
연구논문

Using Event History Analysis to Examine Interstate Compact regarding Internet Taxation

Yang, Chang Hoon*

INTRODUCTION

ON-LINE SALES TAXATION AS A STATE'S INNOVATION

ANALYTICAL APPROACH AND RELATED STUDIES

DATA AND VARIABLES

ANALYTICAL TECHNIQUES

EMPIRICAL FINDINGS AND DISCUSSION

CONCLUSIONS

< Abstract >

This paper examine why, after the emergence of e-commerce, some state governments put aside longstanding tax competition to develop cooperative state tax agreements while other states are still considering whether or not to participate in the interstate compact. By applying a unified innovation framework that draw upon organizational innovation in organization science and policy innovation and diffusion in political science to this question, this research investigates and describes the elements that affect a state's innovation process to adopt the interstate sales tax agreement. The research intends to determine the varying pressures that may have affected state decisions on whether to adopt the Streamlined Sales and Use Tax Agreement (SSUTA) in their states using Event History Analysis. The empirical results show three specific conclusions. First, state fiscal condition is understood as a motivating factor of SSUTA adoption. Second, there is evidence that gubernatorial elections and business interests are potential obstacles associated with the probability of SSUTA adoption. Finally, innovation diffusion is an influential factor in states' decisions to implement cooperative state tax agreements.

[Key words: event history analysis, state compact, cooperative tax agreements, innovation and diffusion model, Internet taxation]

* Assistant Professor, Department of Public Administration, Kwandong University(cy8064@kd.ac.kr)

INTRODUCTION

The issue of multi-state compact in the field of on-line sales taxation in the U.S. consists of the state innovation processes regarding tax policy, which represent important aspects of policymaking at the state level. A theoretical reason for performing this research is that, if interstate cooperation is part of the policy response to a budget deficit resulting from increased untaxed e-commerce activities, investigating the adoption of tax coordination agreements help us better understand the dynamic factors promoting certain states to take the proactive step of adopting cooperative tax agreements for e-commerce. Thus, the recent activity of coordinating tax policies affords researchers an excellent opportunity to test general theories of innovation and diffusion in the specific context of e-commerce sales taxation, an area where such theories have rarely been tested.

Despite the gap in the literature about the process of interstate compact in the field of on-line sales tax, there is a rich related literature on interstate cooperation, tax harmonization, and state tax reform efforts. In particular, the former studies organized collective behavior in a federal system, which is often driven by common agenda or problems in pursuit of a particular common objective (Hill & Hurley, 1988; Florestano, 1994; Bowman, 2004) and presents limitations of the use of interstate cooperation in a variety of research (Duerbeck, 1936; Spengler, 1937). The literature on tax harmonization examines a number of factors that can be expected to influence interstate tax coordination efforts, including varying tax structures and tax conflicts (Rao & Vaillancourt, 1994; Bratton & McCahery, 2001; Holzinger, 2005) and investigates the negative effect that tax harmonization has on overall economic performance and government services (Oates, 2001; Zodrow, 2003; Mitchell, 2004). The latter studies evaluate state sales tax reform efforts (Hellerstein, 1997; McLure, 1997; Zodrow, 2002; Hildreth, Murray, & Sjoquist, 2005). Yet, there is very little in the literature that empirically analyzes a considerable determinant that is more likely to be associated with state consideration of Internet tax policy, including the state's

sales tax, its rate, and political and interest group activities (Best & Teske, 2002; Powell, 2002; Cameron, 2004). Despite the many attempts to explain the intergovernmental cooperation and tax harmonization, there have been few studies that explore the factors influencing the process of multi-state fiscal compact efforts. Most of prior research is focused on theoretical insights of interstate (tax) cooperation or of empirical analysis using a single cross-sectional data with a logistic regression model.

This article is about participation in the Streamlined Sales Tax Project (SSTP or Streamlined Project), a national sales tax simplification project organized in March 2000, and the adoption of the Streamlined Sales and Use Tax Agreement (SSUTA or Streamlined Agreement) up to September 2006, with focuses on state fiscal policies on ecommerce transactions. The objective of the SSUTA is to get remote vendors to register as use tax collectors for the states into which it sells its products. It is a tax already owed by purchasers (but seldom collected) and not a new tax at all. It involves implementation of a collection approach and SSUTA is a device to convince Congress to allow states to register as tax collectors. In the U.S., examples of states coming together to address common fiscal problems and to cooperate in the development of a common policy are relatively rare, because individual states have considerable fiscal autonomy representing state sovereignty and their revenue priorities.

In this study, the research on organizational innovation (Mohr, 1969), tax innovation (Berry & Berry, 1992, 1994; Zhao, 2005; Ashworth, Geys, & Heyndels, 2006) and other policy innovations (Berry & Berry, 1990; Mintrom, 1997, 2001; Balla, 2001; Reenock & Ackerman, 2003; Hoyman & Weinberg, 2006; McLendon, Hearn, & Deaton, 2006) has been adapted to theorize the determinants of SSUTA adoption as well as to model interstate cooperative sales tax agreements as a function of a set of factors affecting cooperation and diffusion (or lack thereof) among the states.

As mentioned before, few empirical studies with state level data have been conducted on the determinants of interstate cooperative behaviors towards Internet taxation. Therefore, this research is one of the empirical analyses of interstate sales

tax compact based on state level data, and this is the first contribution of this research. Moreover, state innovations comprise various key determinants, and it is a major advantage that this research examines among key factors, specifically analyzing patterns of state legislative consideration and approval of on-line sales tax. In this way, this research can contribute to the discussion of how to understand recent efforts by the states to adopt an interstate compact regarding Internet taxation.

ON-LINE SALES TAXATION AS A STATE'S INNOVATION

Following Mohr (1969) and Berry & Berry (1990, 1992, 1994), this research defined a state's innovation as a state's decision to adopt a new innovation which can be affected by both internal and diffusion factors. To examine the determinants that affect a state's innovation process, this research presents a quantitative analysis of state legislative action on Internet taxation – the formation of an interstate cooperative tax agreement that allows states the legitimate right to collect sales and use taxes from remoter transactions with businesses that have no physical presence in their state boundaries. The analytical approach is to develop event history analysis model as a means to understand recent efforts by the states to adopt an interstate compact regarding Internet taxation.

With the growth of a cross-border economy since the commercialization of the Internet, individual states are no longer able to pursue tax policies independently of one another. A major problem in enforcing the existing sales tax law to Internet commerce is, according to McLure (2002), the different applications of the tax by state and local tax jurisdictions in the United States, each with 42 varying rates, exemptions, and procedures. In addition to tax differentials, one constitutional standard for the interstate taxation is taxation neutrality; any company without a substantial physical presence (or nexus) within a state cannot be forced to collect the state's sales tax. The increasing concerns about the complexity of current state tax systems

and current tax law associated with e-commerce growth engenders a need for a collective interstate action as a means of addressing common fiscal problems, identifying a preferred policy alternatives, and establishing a nationally agreed-upon tax system. The convergence of state government preferences leads to a consensus on interstate tax agreement issues and drives states to develop and design a simplified framework for coordinating state tax policies.

The main issues of the interested parties on Internet taxation can be summarized as follows (Powell, 2000; Raisinghani & Petty, 2002). The anti-tax interest groups argue that, first, developing on-line sales taxation can violate the commerce clause of the U.S. Constitution. Second, the current status of state tax system places undue burdens on on-line retailers and hampers the growth of new economy. Third, procedural improvements of the current tax system should be preferred over formulating a new tax system that would amend the tax administrations and practices of individual states. Finally, there is no definitive evidence proving that state concerns arose from uncollected on-line sales taxes. On the contrary, the pro-tax groups state that simplifying the current complex state tax systems would secure the fiscal autonomy of each state by limiting unfair tax competition and would provide a level playing field for all types of commerce activity by offsetting economic inefficiencies. In order to facilitate the simplification process of fiscal policy among state governments, thus, voluntary participation of state and remote retailers in the multi-state agreement is encouraged.

As on-line tax issues started receiving serious attention among state governments, the Streamlined Project was organized in March 2000 to discuss potential problems arising from uncollected on-line sales taxes, and the Streamlined Agreement (for coordinating state tax policies at the national level while implementing common compliance standards at the state level) was created on December 2000. State representatives in the SSTP have organized the Implementing States by enacting a governance model legislation to review, discuss, and approve the implementing legislation adopting the SSUTA. 39 state governments initially considered SSUTA

legislation by implementing governance model legislation and by participating in the Streamlined Project as Implementing States. However, only 21 states out of 39 Implementing States have taken sufficient action to amend their state tax laws to comply with the provisions of SSUTA compliance legislation during 2002-2006. This may indicate that not all states believe it to be in their best interest to adopt the legislation bringing their sales tax codes in compliance with SSTP standards. In this context, this research explore why some states voluntarily participate in interstate cooperative behaviors while others are still considering whether or not to participate in the interstate compact, and how collective actions of state governments are influenced by various elements characterizing innovation patterns of each state government.

ANALYTICAL APPROACH AND RELATED STUDIES

Analytical framework

The analysis of implementing interstate sales tax agreements employs a framework of Berry & Berry's unified theory of innovation model (1990, 1992, 1994) and Mohr's organizational innovation theory (1969) in conceptualizing state policy adoptions as resulting from both internal determinants models and diffusion models.

Berry & Berry's State Lottery Adoption as Policy Innovation (1990) and Tax Innovation in the States (1992) examine the following research issue: what are the factors that cause a state government to innovate? The authors identify two possible explanations for state adoption of a new innovation: internal determinants models and regional diffusion models. The internal determinants models include state characteristics, such as political, economic, and social environments, that impact state decisions to adopt a new innovation. The diffusion models hypothesize that state policymakers' decisions are often affected by certain relationships with neighboring

states that have already adopted a similar policy or who have a shared common values and interests. However, neither internal nor diffusion influences adequately explain state adoption of a new innovation. Internal determinants models are not able to provide an adequate presentation of states' policy choices and their influence over the surrounding states. Diffusion models alone are not able to identify internal political, economic, and social aspects of a state government leading to the adoption of new innovations. In order to identify various factors influencing individual states to adopt or embrace new innovations, therefore, it is important to combine both internal and diffusion determinants models.

Berry & Berry's unified state government innovation model is influenced by the "organizational innovation" theory of Lawrence B. Mohr (1969). The organizational innovation theory describes innovation factors as interactive functions of motivation, obstacles, and resources. In his theory, organizational willingness to innovate is affected by both existing obstacles (events) that need to be resolved and resources (activities of states or neighboring states) that are required to overcome obstacles. The features of organizational innovation theory are equally applicable to Berry & Berry's innovation and diffusion approach. These two different understandings are complementary in analyzing a state's innovation process to adopt the interstate sales tax agreement.

Berry & Berry and Mohr conceptualize the motivation factor as a state's fiscal conditions. Their hypothesis is that as fiscal condition worsen, states are more likely to adopt innovation. They conceptualize the obstacles factor as political and socio-economic characteristics. Their expectation is that as the influence of particular political ideology, electoral politics, and socio-economic standing increases, states are unlikely to adopt innovations to which these political parties, electorates, and constituents of socioeconomic status are opposed. They also conceptualize the resources factor as political party control and institutional powers. Their argument is that under unified party control of government and strong institutional authority governors possess, states are more inclined to initiate innovation efforts to resolve

emerging concerns. Finally, Berry & Berry conceptualize the diffusion factor as regional and professional diffusion. Their prediction is that as a state's participation in professional organizations and/or networking with nearby jurisdictions increases, states are more likely to adopt innovations by sharing and learning about innovations through other states.

This research examines the determinants of interstate cooperation for on-line sales taxation as follows: the probability that a state will implement legislation adopting the SSUTA in a given year is determined by both the state's internal and diffusion characteristics. Based on testable hypotheses of the innovation models, this research raises the following questions regarding interstate tax cooperation: What are the key factors that account for state innovations such as implementation of SSUTA legislation? To what extent do conventional explanations of state innovation and diffusion apply to the specific case of the adoption of interstate sales tax agreements?

As already mentioned, previous literature has not yet answered to the questions of why some states developed cooperative state agreement while others are not and how interstate cooperative behaviors are influenced by various elements characterizing innovation patterns of each state government. Thus, this research tries to contribute to the literature by empirically analyzing recent efforts by the states to adopt the multi-state tax agreement: the research explores the internal factors, which have led to states' decision to adopt the multi-state sales tax agreement. To identify a national interaction aspect of innovation diffusion, the research examines how the interstate policy network, where state decision makers communicate, may play a role in deciding whether each state will adopt the SSUTA. To examine a regional element of innovation diffusion, this research investigates how the adoption of the SSUTA is affected by the innovations in other states that have previously adopted the agreement.

Event History Model

In order to examine factors that lead states to enact compliance legislation to

adopt the SSUTA, this research conducts an analysis across state-year units by utilizing the event history analysis (EHA) model that represents a state's approval of SSUTA legislation and that identifies the effects of different determinants on states' adoption of the SSUTA. EHA is pooled cross-sectional time series analysis considering both the space and time dimensions of the units of analysis. With repeated observations of cross-sections, the space dimension is related to a set of cross-sectional unit of change that occurs in a subject. The time dimension is related to periodic observation of a set of variables taking place in a subject over a particular time span. Thus, event history can be defined as longitudinal data of events occurred in a given time.

In order to understand the nature of the event history model, first, the following four concepts of state, event, risk period, and duration must be understood (Vermunt & Moors, 2005): (1) State is the category of the dependent variable. Two states are generally distinguished: failure and survival (e.g., in this case of interstate sales tax adoption, two states are adopt and not adopt). (2) An event is understood as a transition from origin state to destination state (e.g., an event is the SSUTA adoption, which can be defined as the transition from not adopt, origin state, to adopt, the destination state). (3) The risk period indicates the period that a subject is at risk of a particular event (e.g., the risk period is the period which a given state at risk has not yet adopted SSUTA legislation and at least one other state has adopted the SSUTA). (4) EHA is the analysis of the duration of the non-occurrence of an event during the risk period (e.g., the analysis concerns the duration during which the legislation has not been adopted by the state).

Second, EHA is different from OLS regression due to the time-varying explanatory covariates and the censored observations (Box-Steffensmeier & Jones, 2004). In EHA, covariates are assumed to be time dependent and so vary continuously during observations for a given subject, while the standard regression model assumed that all covariates are time-independent. Thus, including time-varying covariates in the analysis can enhance estimations by explaining the changes in the

risk of an event occurrence in relation to changes in the value of the time-varying covariate. For censored observations, observations represent information about durations of event occurrence. Right-censoring refers to observations that fail to experience the occurrence of an event by the end of the observation. On the contrary, durations are left-censored if the occurrence of an event is experienced prior to the observation. In the case of the SSUTA adoption, a censored case could be a state that did not adopt the SSUTA during the given observation time. Thus, including right-censored observations or treating censored observations the same as uncensored ones in the analysis is more likely to cause bias in risk estimation.

Finally, two important mathematical components of EHA should be understood: the survivor function, which is the probability that an event will not occur at a particular time; and the hazard rate, which is the probability that an event will occur at a particular time (Box-Steffensmeier & Jones, 2004). EHA predicts the conditional probability (the hazard rate) of an event occurring during the risk period, given that the event has not occurred up to a given time. In other words, the risk of an event occurrence corresponds to the probability of failures (e.g., experiencing the event of SSUTA adoption at time) as conditional on the probability of survival to some time (e.g., not experiencing the SSUTA adoption at time). The possible event occurrence in this research consists of a range of state legislative action from initial consideration to a full legislative enactment of the SSUTA,¹⁾ and the research examines the hazard rate of experiencing the SSUTA adoption at time, given the state at risk at time.

1) This research follows the approach of Berry & Berry, "State Lottery Adoptions."; "Tax Innovation."; Mintrom, "Policy Entrepreneurs."; Janet M. Box-Steffensmeier & Bradford S. Jones, *Event History Modeling: A Guide for Social Scientists* (Cambridge, UK.: Cambridge University Press, 2004); Janet M. Box-Steffensmeier, Suzanna De Boef, & Kyle A. Joyce, "Event Dependence and Heterogeneity in Duration Models: The Conditional Frailty Model," *Political Analysis* 15 (2007): 237-256 in setting up our event history analyses.

DATA AND VARIABLES

This pooled longitudinal data set is a collection of data from 41 states for which the same variables are collected annually over the period 2001-2006. Data and empirical evidence are collected from multiple sources. Since the first state, Wyoming, began enacting legislation to enter into a multi-state sales tax simplification effort in 2001, we begin our observation period in that year. We assume that a state is not at risk of adopting the SSUTA until at least one state had adopted it. Upon adoption of SSUTA legislation, a state is no longer at risk of enacting the legislation and is excluded from the risk set over time. Thus, the risk set is depleted over time. States that have no adoptions made by the end of the observation period in 2006 are treated as right censored.

In this research, Alaska, Delaware, Montana, New Hampshire and Oregon were dropped from our analysis because those states do not impose a state sales tax. In the model of initial legislative consideration, Colorado and Idaho were excluded, which have no legislative action either allowing the state to enter into multi-state discussions regarding streamlined sales and use taxes or bringing the state into compliance with the SSUTA. In addition, based on previous studies on the adoption of innovations (Berry & Berry, 1990; Mintrom, 1997; McLendon, Hearn, & Deaton, 2006), Alaska and Hawaii were dropped from the regional diffusion measurement because those states have no regional borders shared with other states. Nebraska is omitted from analysis due to the non-legislative partisanship.

In this research, the criterion for estimation is whether a state's implementation of legislation adopting the SSUTA is explained by various factors such as motivation, obstacles, resources, and diffusion that are interacting with one another in a policy community to shape a common policy goal over the areas of e-commerce taxation. In this research, the dependent variable is defined as a state's adoption or non-adoption of the SSUTA, and it is measured over a pooled time series of cross-section (continuous scale) because the data will be collected every year by state.

As for the independent variables that influence states to adopt the SSUTA legislation, 18 variables are drawn mainly from the hypotheses of Berry & Berry (1990, 1992, 1994) and Mohr (1969) on state innovations mentioned in analytical framework. First, the term *MOTIVATION* is operationalized to reflect the impact of three motivation variables - sales tax base, sales tax reliance, and sales tax rate - on the probability of SSUTA implementation. According to Berry & Berry (1990), the fiscal health of a state government provides an explanation for the motivation to innovate. This is because poor financial condition reduces the political risks to state officials considering adoption of innovation (Hansen, 1983). $TAXBASE_{i,t-1}$, a state's sales tax base, represents the level of the fiscal condition of a state's government in the previous year. This variable is measured as a dummy variable; it has a value of 1 if the tax base is less than the median value of the tax base for all states and all years (40 percent).²⁾ $TAXDEP_{i,t-1}$ denotes the state's sales tax reliance that is measured as a dummy variable coded 1 if the state has no income tax.³⁾ State sales tax data can be obtained from the U.S. Census Bureau.⁴⁾ $TAXRATE_{i,t}$ denotes the initial level of sales tax rates in the year of measurement. It is a dummy variable that takes value of 1 if the sales tax rate is greater than the median tax rate across states (five percent).⁵⁾ The source for this variable was the Tax Foundation.⁶⁾

Second, the term *OBSTACLES* is operationalized to assess the impact of three

2) The value of state sales tax base is computed following Mikesell's method explained in his article "Remote Vendors" (Sales Tax Base = [(Sales Tax Revenue/Sales Tax Rate)/Personal Income]) by using data obtained from the U.S. Department of Commerce from 2001 and 2006. The sales tax base ranges from lows of 23.44 percent in Vermont to highs of 76.67 percent in New Mexico.

3) States that levy no income tax are Florida, Nevada, South Dakota, Tennessee, Texas, Washington, and Wyoming.

4) U.S. Census Bureau, *State Government Tax Collections*; available from: <http://www.census.gov/govs/statetax/>.

5) The sales tax rate ranges from lows of 3.5 percent in Virginia to highs of 7.25 percent in California.

6) Tax Foundation, *State Sales, Gasoline, Cigarette, and Alcohol Tax Rates by State* (2006); available from: <http://www.taxfoundation.org/files/variousstaterates-20070626.xls>.

different types of obstacles conditions – political ideology, gubernatorial election cycle, and socio-economic development – on the adoption of SSUTA legislation. McNeal, Tolbert, Mossberger, & Dotterweich (2003) state that party control of government institutions can be used to explain the policy behavior of states. Additionally, electoral politics shape tax policy by raising broad issues of state tax policies as well as by highlighting anti-tax campaigns against new taxes in particular (Brunori, 2005). In regard to socio-economic development status, Hoyman & Weinberg (2006) state that the structure of social, economic, and demographic conditions can be used as a significant predictor for understanding a policy process. $PIDEO_{i,t}$ measures the degree of political party ideology in power. If state legislators and governors are controlled by a conservative party, the state is scored 0, and otherwise 1, indicating control by a liberal party. The scale ranges from 0.05 in Utah to 0.98 in Maryland. We also measure $VOTER_{i,t}$, the degree of citizen ideology supporting conservative political ideology. In states with a number of constituents supporting conservative political ideology, politicians are less likely to adopt a new tax instrument. This variable ranges from 0.08 in Kentucky to 0.96 in Vermont. Our data source was Berry, Ringquist, Fording, and Hanson (1998).⁷⁾ $GUBELECT_{i,t}$ denotes gubernatorial election that specifies the influence of the election cycle on the probability of SSUTA adoption. It is measured as a dummy variable; it has a value of 1 if it is a gubernatorial election year and 0 otherwise. An unpopular action in election years would threaten political support essential for reelection. The source of these data was the Book of the States (2006, 2007). $INCOME_{i,t-1}$ and $EDU_{i,t-1}$ denote the level of personal income and education in a state. Income is measured by a state's per capita personal income (thousands of dollars), which ranges from 20.9 to 47.39 across the states. The source of personal income data was the U.S. Department of Commerce Bureau of Economic Analysis.⁸⁾ Educational attainment is measured as the percentage

7) Updated Citizen and Government Ideology Data 1960-2006 available from: http://www.uky.edu/~rford/Home_files/ideo6006.xls.

8) U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Accounts, *Local Area Personal Income*; available from: <http://www.bea.gov/regional/reis/>.

of the population having a college degree or beyond, which ranges from 15.3 to 37.6 across the states. The source of education data was the U.S. Census Bureau and the U.S. Department of Education Digest of Education Statistics.⁹⁾ $LOCAL_{i,t-1}$, the influence of local jurisdictions, measures the degree of local fiscal autonomy over their own tax rates and bases within a state. We test a dummy variable that is set to 1 if local sales tax revenue as a percent of total general sales tax revenue is greater than the median value of 25 percent.¹⁰⁾ Data can be obtained from the U.S. Census Bureau.¹¹⁾ Data for the fiscal years 2000-2001 and 2002-2003 are missing, so estimates are made based on averages of the previous and later, following year's data. $INTERNET_{i,t}$ measures the impact of on-line business activities in a state. While we cannot obtain data on on-line business activities, we compare the percentage of residential and business high-speed Internet connections in a state i in year t as a proxy measure. This variable ranges from 0.05 to 15.96 percent across the states. The source of these data was the Federal Communications Commission Wireline Competition Bureau.¹²⁾

Third, the term RESOURCES is operationalized to consider the impact of two types of resource conditions – party control and institutional power – on state SSUTA implementation. According to Hansen (1983), Berry & Berry (1992) and Anderson (2000), unified party control of government is expected to achieve the necessary consensus for the resolution of policy conflicts than fragmented governments led by

9) U.S. Census Bureau, Educational Attainment, *Educational Attainment of the Population 25 Years and Over, By State*; available from: <http://www.census.gov/population/www/socdemo/educ-attn.html>; U.S. Department of Education, Digest of Education Statistics, *Postsecondary Education*; available from: <http://nces.ed.gov/programs/digest/>.

10) Local sales tax revenue as a percent of total general sales tax revenue ranges from 52.35 percent in Louisiana to zero in the 12 states - Connecticut, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, Mississippi, New Jersey, Rhode Island, Vermont, and West Virginia.

11) U.S. Census Bureau, State & Local Government Finance, *State and Local Government Finances by Level of Government and by State*; available from <http://www.census.gov/govs/estimate/>.

12) Federal Communications Commission, Wireline Competition Bureau, Industry Analysis and Technology Division, *Local Telephone Competition and Broadband Deployment*, Statistical Report; available from: <http://www.fcc.gov/wcb/iatd/comp.html>.

two-party systems. In addition, the institutional powers governors possess influence the policymaking process. Governors who hold comparatively strong institutional authority are more responsive to state policy issues (McLendon, Hearn, & Deaton, 2006). $PARTYCOT_{i,t}$ is a dummy variable that indicates whether a single party controls the institutions of the state government in year t . It is coded 1 if both legislative bodies and the governorship are controlled by the same party and 0 if the government is under divided party control. The source of this variable was Klarner (2003).¹³⁾ $HISTCOT_{i,t}$ indicates the historical competition for party control of government institutions in state i in year t , which is scored 1 if the state historically has single party control of both legislative bodies and the governorship. The variable was scaled by using Berry & Berry's (1992) method (0 – 1 scale), and the source was the Klarner dataset. $PARTY*PIDEO_{i,t}$ is the interaction term between the party control and the political ideology where the variables are defined above. The variable was scaled following Berry & Berry's (1992) method (0 – 1 scale). $INSTIT_{i,t}$ measures formal instruments of policy control governors possess. This variable ranges from 2.6 to 4.3 across the states (1 low – 5 high scale). The source of this variable was Beyle.¹⁴⁾

The term DIFFUSION is operationalized to examine the impact of two types of diffusion factors – regional diffusion and national interaction – on the decision to adopt the SSUTA. Previous policy innovations adopted by neighboring states become important resources for overcoming potential obstacles to innovation (Berry & Berry, 1990). Ashworth, Geys, & Heyndels (2006) find that the uncertainty for decision-makers can be lowered significantly by learning of other states' policy experiments. In addition, Balla (2001) states that professional associations facilitate communication among states and promote innovation. $NEIGH_{i,t}$ indicates regional influence, as measured by the number of states sharing a border with state i that

13) Data available from State Politics & Policy Quarterly Data Resource: http://www.ipsr.ku.edu/SPPQ/journal_datasets/klarner.shtml.

14) Thad L. Beyle, Gubernatorial Power: *The Institutional Power Ratings for the 50 Governors of the United States*; available from: <http://www.unc.edu/~beyle/gubnewpwr.html>. Beyle also provided data for 2006 directly for this research.

have adopted the SSUTA in previous. The source of these data was the National Conference of State Legislatures (2007).¹⁵⁾ $PROFNET_{i,t}$ represents a state's participation in professional state government organizations. If a state official has a committee membership in year t , this variable is coded as 1 and 0 otherwise. We also examine the impact of the long-standing committee memberships. If a state has a committee membership in the previous 2 years, it is coded as 1 and 0 otherwise. In order to assess the impact of a leadership role in professional organizations, we coded this variable as 1 if a state has a committee membership as a chair in a certain year and 0 otherwise. These roster data (1999-2006) were obtained directly from the NCSL Committee Task Force.

ANALYTICAL TECHNIQUES

One basic approach for estimating probability of an event occurrence as a function of covariates is to use a discrete-time logistic model. The assumption of the discrete-time event history model is that the event times at risk are not dependent on each other. In other words, the observations at risk only experience a single event of interest in a given time period. The objective of our analysis, however, is to identify the effects of various internal and diffusion determinants on states' adoption of the SSUTA by constructing the process of a repeated time event. According to Box-Steffensmeier, De Boef, & Joyce (2007), event history analysis in a single event process often underestimates the effects of covariates on repeated event observations. In this research, the interstate tax agreement is modeled to reflect the conditions for the formation of repeated event observations by treating the initial legislative consideration of SSUTA adoption as the prior occurrence of a repeated event leading

15) National Conference of State Legislatures, Executive Committee Task Force on State and Local Taxation of Telecommunications and Electronic Commerce; available from: <http://www.ncsl.org/IssuesResearch/BudgetTax/TheExecutiveCommitteeTaskForceonStateandLo/tabid/12671/Default.aspx>.

to final approval of SSUTA implementation. Unlike the single discrete-time logistic model, the risk of an event is affected by any events occurring in previous times. In order to account for duration dependency and for repeatable time-varying events, a conditional stratified risk-set model (with frailty) is suggested as an alternative (Jones & Branton, 2003).¹⁶⁾

In the conditional risk-set model with stratification for repeated events, first, a risk set is defined based on the ordering of events because event times are conditional on the failure of the previous event. Second, event times are treated as gap time (duration) rather than elapse time. Third, stratification is needed to obtain event-specific separate baseline hazards. In time-dependent (or non-proportional) events, the risk for each event varies with time-varying covariates. Therefore, a categorization of the risk sequence produces different baseline hazards for each event at risk. The conditional risk-set model in gap time has the following form of:

$$h_i(gt) = h_{0ki}(gt) \exp(\beta'X),$$

where $h_{0ki}(gt)$ is a baseline hazard function stratified by event type, k , and clustered by individual states, i , in gap time and $\beta'X$ contains regression coefficients to be estimated by the maximum partial likelihood assumption: $L(\beta) = \prod (\exp(\beta'X) / \sum \exp(\beta'X))$. Our analyses were performed with Stata 8 using the `stcox` procedure.

16) See Bradford S. Jones & Regina P. Branton, "Beyond Logit and Probit: Some Alternative Duration Modeling Strategies for State Policy Adoption" (paper presented to the Annual Meeting of the State Policy and Policy Conference, Tucson, Arizona, March 14-15, 2003). According to Jones & Branton, the conditional model for repeated events is a modified Cox model that adjusts "the risk set to account for repeatability of events and to alter the duration time so it measures the timing from the previous event" (p. 21). In order to account for time dependency, according to Box-Steffensmeier & Jones, the use of temporal dummies is the most common feature of a discrete time model. However, the inclusion of the number of temporal dummy variables (year dummies in this study) in a duration dataset may waste the degrees of freedom and make the coefficients of the temporal dummies have no substantive meaning. Therefore, it is recommended to adopt a time counter function to model duration dependency in the discrete time model. Yamaguchi contends, however, that "parametric expression of time dependence does not fit the data well in many empirical studies of life events" (p. 105) and thus recommends a "goodness-of-fit test" in order to adjust temporal dependence of observations in the data set; Kazuo Yamaguchi, *Event History Analysis*. (Newbury Park, California: Sage Publications, 1991).

By using a Cox model technique the factors of SSUTA adoption at the state level are formulated by:

$$h_i(ADOPT_i) = h_{0i}(ADOPT_i) \exp(b_1TAXBASE_{i,t-1} + b_2TAXDEP_{i,t-1} + b_3TAXRATE_{i,t} + b_4PIDEO_{i,t} + b_5VOTER_{i,t} + b_6GUBELECT_{i,t} + b_7INCOME_{i,t-1} + b_8EDU_{i,t-1} + b_9LOCAL_{i,t-1} + b_{10}INTERNET_{i,t} + b_{11}PARTYCOT_{i,t} + b_{12}HISTCOT_{i,t} + b_{13}PARTY*PIDEO_{i,t} + b_{14}INSTIT_{i,t} + b_{15}NEIGH_{i,t} + b_{16}PROFNET_{i,t} + b_{17}PROFNET1_{i,t} + b_{18}PROFNET2_{i,t}),$$

where $ADOPT_{i,t}$ is the dichotomous dependent variable, which measures whether a state i will implement legislation adopting the SSUTA in a given year t , given that the state has not already implemented SSUTA legislation prior to year t . Therefore, the dummy variable, $ADOPT_{i,t}$, is coded 1 if a state implements legislation to adopt the SSUTA in year t and 0 if a state does not adopt the SSUTA legislation during the year t .

EMPIRICAL FINDINGS AND DISCUSSION

We examined patterns of legislative approval of SSUTA implementation by analyzing the effects of covariates on a state's decision to comply with SSUTA provision. The data consist of 190 observations for 41 states between 2001 and 2006. The observation period starts in 2001, when Wyoming became the first state to consider legislative approval of the SSUTA. A total of 60 events for 41 states occurred during the six years, and each state experienced an average of 1.5 events ($= 60/41$). The median survival time before experiencing an event during the observation is two years. The data are stratified by event types coded as 1 and 2 (Strata 1 = initial legislative consideration and Strata 2 = final approval of SSUTA legislation). In our model, two states, Connecticut and Pennsylvania, experienced no events, 18 states experienced only one event (initial consideration), and 21 states experienced two events (initial consideration and final approval). Thus, Strata 2, indicating final legislative approval of SSUTA legislation, has the highest frequency of events (see

Table 1).

Table 1. Event Strata for SSUTA legislation

Strata	Freq. Events	Percent
1	80	42.11
2	110	57.89
Total	190	100.00

Table 2 shows the estimated hazard rates of the given events, legislative consideration and legislative approval of the SSUTA, occurring during the given time period. We treated the duration dataset as the process of repeated time events and estimated the effects of the set of explanatory variables, clustered on state government and stratified by the event type, on final approval of SSUTA implementation. A state is not at risk of SSUTA adoption until it has experienced legislative consideration of the SSUTA. Thus, the baseline hazard for the risk of a failure event is different for the initial consideration of and for final approval of SSUTA legislation. For initial legislative consideration, for instance, the risk period begins in 2001 since Wyoming became the first member of the Implementing States. The total number of time periods for observation of states at risk of experiencing legislative consideration is 80 for 41 states over the period 2001-2006 (total number of risk set in Table 2), and there are total 39 failure events of a state considering legislative enactment of SSUTA adoption (total number of states considered SSUTA in Table 2). Thus, the frequency rate of legislative consideration is 0.49 ($=38/80$), the hazard rate for the state-year 2001 is calculated to be $19/41=0.46$, and the risk set for analysis in the state-year 2002 is the 22 states ($=41-19$). For final approval of SSUTA implementation, 19 states out of 41 participating in the SSTP considered SSUTA legislation by enacting a governance model legislation and became members of the Implementing States in 2001. This implies that final approval of SSUTA implementation is not at risk in 2001 unless the state legislature considers SSUTA legislation in 2001, and therefore is regarded as a time-dependent repeated event. In

this setting, the risk set of final SSUTA approval is the 33 states (=19+14-0) since Wyoming became the only state to adopt SSUTA compliance legislation in 2002, and hazard rate in the state-year 2002 is 0.03 (=1/33).

Table 2. Estimated Hazard Rates for State SSUTA Adoption as Repeated Events

Year	States where the legislature considered SSUTA	Number of States considered SSUTA	Risk set	Hazard rate
2001	Arkansas, Florida, Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Nevada, North Carolina, North Dakota, Oklahoma, Rhode Island, Tennessee, Texas, Utah, Wisconsin, Wyoming	19	41	0.46
2002	Alabama, Arizona, Iowa, Kansas, Maine, Missouri, New Jersey, Ohio, South Carolina, South Dakota, Vermont, Virginia, Washington, West Virginia	14	22	0.64
2003	California, Massachusetts, Mississippi, New York	4	8	0.50
2004	Georgia	1	4	0.25
2005	New Mexico	1	3	0.33
2006		0	2	0.00
Year	States where the legislature approved SSUTA	Number of States approved SSUTA	Risk set	Hazard rate
2001		0	19	0.00
2002	Wyoming	1	33	0.03
2003	Indiana, Iowa, Kansas, Minnesota, North Carolina, North Dakota, Oklahoma, South Dakota, Vermont, West Virginia, Arkansas, Nevada, Ohio, Tennessee, Utah, Washington	16	36	0.44
2004	Michigan	1	21	0.05
2005	Kentucky, New Jersey	2	21	0.10
2006	Rhode Island	1	19	0.05

The results of the analysis are presented in Table 3. The conditional stratified risk-set model in gap time estimates the effects of the set of explanatory variables, clustered on state government and stratified by the event type, on final approval of

SSUTA implementation. The test results shows that six factors, TAXBASE, TAXDEP, GUBELECT, INTERNET, NEIGH, and PROFNET2, influence a state's decision to adopt SSUTA legislation significantly at the $p<0.1$, $p<0.05$, and $p<0.01$ levels respectively.

Table 3. Conditional Risk-Set Model for SSUTA Adoption

Variable	Conditional Stratified Risk-Set in Gap Time ¹⁷⁾	
	Coeff	Exp(Coeff)
Motivation		
TAXBASE	0.63**(0.25)	1.88
TAXDEP	1.21*** (0.39)	3.36
TAXRATE	0.01(0.32)	1.01
Obstacles		
PIDEO	0.50(1.08)	1.65
VOTER	-0.18(1.35)	0.83
GUBELECT	-0.60**(0.25)	0.55
INCOME	-0.01(0.06)	0.99
EDU	-0.06(0.06)	0.94
LOCAL	-0.39(0.44)	0.67
INTERNET	-0.16**(0.08)	0.85
Resources		
PARTYCOT	0.40(0.67)	1.49
HISCOT	-0.97(1.00)	0.38
PARTYPIDEO	-0.06(1.31)	0.94
INSTIT	0.21(0.34)	1.23
Diffusion		
NEIGH	0.46*** (0.08)	1.59
PROFNET	-0.24(0.35)	0.78
PROFNET1	0.35(0.37)	1.42
PROFNET2	-0.88*** (0.33)	0.41
Log-likelihood	-158.81	

Wald Chi2	128.37
Degrees of freedom	17
Number of failures	60
Sample size	190
Note. Significance: *p<0.1; **p<0.05; ***p<0.01. Two-tailed significance tests. Robust standard errors in parentheses.	

Results for Motivation Factors

Our finding pertains to the specific explanations for fiscal condition of a state government. Overall, the model results indicate that the motivating factors of state adoption of SSUTA were sales tax base and sales tax reliance. States that levy narrow-based sales taxes or rely on high sales tax affected the likelihood of SSUTA adoption in the direction predicted at statistical significance levels of $p<0.05$ (0.011) and of $p<0.01$ (0.002), respectively. The test results suggest that a state with a narrow sales tax base that has adopted SSUTA legislation in a given time has 1.88 times the chance of a state with a relatively broad sales tax base of adopting the SSUTA in the next time increment, holding constant all of the other variables. In other words, there is a 65 percent chance that the state with the narrower sales tax base will adopt the SSUTA legislation first. For instance, of the 22 states that have the narrowest sales tax bases of all sales taxing states, 11 states adopted SSUTA compliance legislation. In some states such as Wyoming (68.39 percent), South Dakota (62.59 percent), and Washington (62.29 percent) the sales tax base is broad but SSUTA compliance legislation has been implemented.¹⁸⁾ In addition, there is a 77

17) The frailty test was conducted to estimate unobserved heterogeneity (conditional risk-set model in gap time with shared frailty) for this conditional stratified risk-set model in gap time. The estimated variance of frailty term equals 0 and a likelihood ratio test for theta is not statistically significant ($p = 0.5$), indicating that unobserved heterogeneity is not affecting our model. Therefore, frailty does not need to be included in our estimation when we account for event dependence.

18) 11 Governing Board member states have a sales tax base lower than the median value of 40 percent: Vermont (23.44 percent), New Jersey (28.87 percent), Rhode Island (29.01 percent), Minnesota (34.37 percent), North Carolina (36.02 percent), Kentucky (36.35 percent), Indiana

percent chance the state with no income tax will enact SSUTA legislation first, if all other variables do not change. This implies that the higher the sales tax reliance a state has, the shorter it takes for a state to implement SSUTA legislation. Of the seven states that impose no income tax on state residents, five states were found to be among the first states adopting SSUTA compliance legislation (Washington, Tennessee, South Dakota, Nevada, and Wyoming). In addition, of the 15 high sales-tax-dependent states, nine states adopted the SSUTA.¹⁹⁾ Notably, however, the sales tax rate does not appear to be an adequate explanation for final approval of SSUTA implementation, although the positive coefficient is as expected.

Results for Obstacles Factors

Our analyses of influences of gubernatorial elections and state Internet activity on the hazard of adopting SSUTA legislation produced statistically significant results at the 0.05 level (0.02 and 0.03 respectively) as predicted. It appears that SSUTA legislation is most likely enacted in non-gubernatorial election years. By an odds of 0.55:1, a state in an election year is less likely to adopt the SSUTA than a state in a year following a state election, holding constant the effect of all of the other variables. This provides evidence that imposition of an unpopular policy during an election year might be viewed as an obstacle to innovation, and therefore gubernatorial candidates are unlikely to adopt a multi-state tax coordination agreement in election years. For instance, of the 39 Implementing States with a gubernatorial election, 29 states considered SSUTA legislation in non-election years (eight states among these considered it in the first year after an election). For legislative approval,

(36.68 percent), Alabama (36.96 percent), West Virginia (37.37 percent), Oklahoma (37.54 percent), Ohio (38.38 percent), North Dakota (39.48 percent), and Missouri (39.61 percent).

19) The state's reliance on the sales tax is computed as a percentage of total state tax revenue. Nine Governing Board member states place a higher reliance on sales taxes than does the national average of 34.79 percent: Washington (61.97 percent), Tennessee (59.97 percent), South Dakota (53.88 percent), Nevada (50.64 percent), Indiana (37.42 percent), Arkansas (37.39 percent), Utah (36.93 percent), Kansas (36.36 percent), and Wyoming (35.13 percent).

three states (New Jersey, Rhode Island, and Wyoming) adopted the SSUTA during an election year while 18 states adopted it in non-election years (among these, 11 states adopted it in the first year following an election). In addition, states that are more dependent on e-commerce activities may be unwilling to place the sales tax compliance burden by adopting a tax on Internet sales in order to avoid losing consumers and companies to other states not imposing on-line sales taxation. The results indicate that as the number of residential and business Internet connections increases by one percent, and all other variables are held constant, the rate of approving SSUTA implementation decreases by 15 percent. This implies that the more high-speed Internet connections state residents and businesses have, the longer it takes for a state to approve SSUTA implementation. For instance, of the top ten states with high rates of Internet connections, only two states (Ohio and New Jersey) adopted SSUTA legislation. States like Georgia, California, New York, and Massachusetts were among the last states considering SSUTA legislation. On the contrary, 17 states that adopted the SSUTA have Internet access rates less than the average rate of two percent.²⁰⁾ However, the remaining obstacle factors are not supported by the model results. These findings are consistent with the assumptions and validate the claims of previous studies.

20) The top ten states with high Internet access rates are California (14.85 percent), New York (8.18 percent), Florida (6.97 percent), Texas (6.76 percent), New Jersey (3.89 percent), Illinois (3.80 percent), Ohio (3.61 percent), Pennsylvania (3.56 percent), Georgia (3.25 percent), and Massachusetts (3.21 percent). No states have implemented a compliance legislation to adopt SSUTA except New Jersey and Ohio. Of the 34 states with lower Internet connections, 17 states adopted the SSUTA and 13 of these are among those with Internet access rates of less than one percent:

Tennessee (1.78 percent), Minnesota (1.65 percent), Indiana (1.45 percent), Kansas (0.97 percent), Oklahoma (0.96 percent), Nevada (0.89 percent), Kentucky (0.74 percent), Iowa (0.64 percent), Utah (0.63 percent), Arkansas (0.55 percent), Rhode Island (0.45 percent), West Virginia (0.36 percent), Vermont (0.18 percent), South Dakota (0.13 percent), North Dakota (0.12 percent), and Wyoming (0.11 percent).

Results for Resources Factors

The estimated coefficients for the resources variables are not significantly related to legislative adoption of the SSUTA. This implies that the issue of implementing coordinated e-commerce taxation at the multi-state level does not solely depend on which political party or governor has the ability to convert the uncertain impact of on-line sales tax issues to its advantage.²¹⁾ Rather, the issue relies on how the policy interests are presented to induce voluntary participation in collective action to attain the common policy response for the process of fiscal harmonization.

Results for Diffusion Factors

The measure of regional diffusion does appear to be a significant at $p=0.00$ and positive predictor of final enactment of SSUTA legislation. By the odds of 1.59:1, a state with many neighboring states that have previously adopted the SSUTA is more likely to approve SSUTA legislation than a state with no such neighboring states. In other words, each one state increase in neighboring states that have previously implemented the SSUTA enhances the risk of final approval of the SSUTA by about 59 percent, controlling for the other covariates in the model. This result lends support that the tendency of states to adopt the legislation bringing their sales tax codes in compliance with the streamlined Agreement is considered to be derived from nearby state's policy experiments regarding the most common issues raised by the erosion of sales tax bases and their revenues due to untaxed e-commerce growth. The variables pertaining to state participation in the professional state government organization, however, do not appear to have a significant relationship with legislative approval of SSUTA adoption. In addition, the coefficient for leadership in the NCSL Committee Task Force is significant at $p<0.01$ (0.008) but completely opposite to the preliminary

21) In regarding the political variables, Berry & Berry (1994) found similar results that the party control explanations provide no significant innovation effects on adoption of new tax instruments.

prediction. By an odds of 0.41:1, a state with a leadership role in professional organizations is less likely to adopt the SSUTA, holding constant the effect of all of the other variables. It appears that the leadership role states are taking in efforts to facilitate interstate tax agreements on the task force committee does not always positively affect states coming to comply with SSUTA provisions.

CONCLUSIONS

The innovation and diffusion models presented above show that a dynamic environment where various internal and diffusion factors such as motivation, obstacles, resources, and diffusion conditions are interacting with one another in a policy community shapes a common policy goal and affects actions of state governments in the area of e-commerce taxation.

First, state fiscal condition is understood as a motivating factor of SSUTA adoption. The evidence presented in this analysis suggests that a state's comparatively high sales tax reliance or low sales tax base imposes significant costs of economic inefficiency on the state's fiscal systems associated with uncollected taxes on e-commerce transactions. Mikesell (2000) assumes that states and localities will have zero sales tax base if every commerce transaction is connected with tax-free Internet, making it sales and use tax-free. Thus, even though imposing a new sales tax is unpopular with state electorates, state revenue shortfalls should increase the motivation of politicians to seek new revenue sources by adopting cooperative tax agreements. These findings, therefore, give support to the claims that a state's fiscal condition may function as an incentive for initiating state innovations regarding cooperative sales tax agreements.

Second, there is evidence that gubernatorial elections are potential obstacles associated with the probability of SSUTA adoption. There is less incentive for gubernatorial candidates in an election year to support a new cooperative sales tax

system that may threaten political support for the reelection. In this regard, gubernatorial and legislative candidates and incumbents are likely to adopt new innovations in election cycles when new innovations are most expected to maximize political advantage to those seeking reelection (Kiewiet & McCubbins, 1985; Berry & Berry, 1992). According to Berry & Berry (1990, 1992), imposition of new taxes would be more likely in a year following a state election than during an election year due to substantial opposition from the electorate. Mikesell (1978) also shows that politicians avoid tax adoptions when the gubernatorial election is imminent. The results suggest that the election cycle may have had a substantial effect on highlighting the anti-tax campaigns against a new tax coordinating agreement and hampering political advantage of those considering adoption of the Streamlined Agreement. Thus, the probability of SSUTA adoption by states tends to be greater when the election cycle is in the distant future. Business interests are also likely to increase their political influence over state decision making. The result supports the race to the bottom thesis (Volden, 2002; Berry, Fording, & Hanson, 2003; Holleque & Ratkovic, 2006) that states compete with other states to provide the lowest sales tax burden so as to discourage consumers and companies from moving to other states. The adoption of the SSUTA in a state hinders efforts to attract consumers and companies. However, if other states have already adopted the SSUTA, the fear of a race to the bottom should be diminished, which should reduce the political costs of adopting it. The negative relationship observed in this research between on-line business activities and SSUTA adoption implies that the increasing influence of interest groups in the policy process may bend state behaviors toward a desired policy direction by articulating key issues that a policymaker may wish to bring up in a given policy area.

Third, innovation diffusion is an influential factor in states' decisions to implement cooperative tax agreements. The estimated results show that states' decisions concerning common interests for e-commerce taxation may drive innovation diffusion processes and facilitate the adoption of SSUTA legislation in nearby states. This implies that states in which neighboring states in the region have already

participated in policy experimentation with respect to adopting new innovations may experience higher innovation diffusion than states in which no neighboring states raised the issue of formulating or implementing the innovations. On this point, the resources for overcoming potential obstacles are associated with the mimicking behaviors found in the process of policy diffusion (Zaho, 2005). The argument of mimicking behavior is based on Salmon (1987)'s yardstick competition, which assumes that the electorate compares policies from neighboring jurisdictions as a means of overcoming information asymmetry when assessing the performance of their own politicians. Politicians also enjoy the free ride of mimicking neighboring states' policies in order to avoid potential political backlash from voters. Thus, tax-mimicking behavior is likely to lessen the political cost (the resistance from the electorate), economic cost (losing tax base from tax competition), and information cost (lacking information and experience with a new innovation) that can arise from adopting a new tax policy (Zaho, 2005). When the multi-state streamlining sales tax efforts become open to voluntary participation, the role of professional state government organizations reflecting varied state interests is expected to influence the process of cooperative state innovations. The results provide evidence that a state's committee membership as a chair is negatively related to the likelihood of a tax policy adoption in the state. This means that a chairman's role in policy networks is more focused on representing shared policy concerns and varied interests of all member states in the policy development process and defining the conditions under which states mobilize a political consensus on a given policy issue rather than promoting individual-level innovation efforts of member states through advocating independent policy change for each individual state. This implications support Kingdon's (1995) "softening up" process of diffusion. According to him, policy entrepreneurs utilize strategies to soften up both political actors and the public over time to raise awareness of a given problem and to achieve a consensus on alternative proposals for a given issue.

Given dynamic interactions among various factors in the process of state innovation in the U.S., examining of interstate cooperation in the on-line sales tax

policy provides limitations and directions for future research. One limitation is that available measures of innovation and diffusion variables did not fully describe the complex nature of the state innovation process. Thus, the analysis of different determinants of state cooperative efforts in future research may expand the understanding of how differing factors drive states to adopt new innovations. Another limitation stemming from this research is the need for additional case studies. In order to understand more fully the information about what and how factors facilitate or hamper collaborative behaviors to adopt new innovations, it is critical for future research to analyze recent multistate efforts and other prior efforts perceived as failing to achieve an agreement adopting a new innovation. A comparative case study method in the context of current research on interstate compact regarding Internet taxation may provide useful research findings on, concerning how interstate cooperative behaviors are influenced by various elements characterizing innovation patterns of individual state governments.

REFERENCES

- Anderson, Christopher J. (2000). "Economic Voting and Political Context: A Comparative Perspective," *Electoral Studies*, 19(2): 151-170.
- Ashworth, John., Geys, Benny., & Heyndels, Bruno. (2006). "Determinants of Tax Innovation: The Case of Environmental Taxes in Flemish Municipalities," *European Journal of Political Economy*, 22(1): 223-247.
- Balla, Steven J. (2001). "Interstate Professional Associations and the Diffusion of Policy Innovation.," *American Politics Research*, 29(3): 221-245.
- Berry, Frances S., & Berry, William D. (1990). "State Lottery Adoptions as Policy Innovations: An Event History Analysis," *American Political Science Review*, 84(2): 395-415.
- Berry, Frances S., & Berry, William D. (1992). "Tax Innovation in the States: Capitalizing on Political Opportunity," *American Journal of Political Science*, 36(3): 715-742.

- Berry, Frances S., & Berry, William D. (1994). "The Politics of Tax Increases in the States," *American Journal of Political Science*, 38(3): 855-859.
- Berry, William D., Fording, Richard C., & Hanson, Russell L. (2003). Reassessing the "Race to the Bottom in State Welfare Policy," *The Journal of Politics*, 65(2): 327-349.
- Berry, William D., Ringquist, Evan J., Fording, Richard C., & Hanson, Russell L. (1998). "Measuring Citizen and Government Ideology in the American States, 1960-93," *American Journal of Political Science*, 42: 327-348.
- Best, Samuel J., & Teske, Paul. (2002). "Explaining State Internet Sales Taxation: New Economy, Old-Fashioned Interest Group Politics," *State Politics & Policy Quarterly*, 2(1): 37-51.
- Beyle, Thad L. (n.d.). *Gubernatorial Power: The Institutional Power Ratings for the 50 Governors of the United States*.
- Bowman, Ann O'M. (2004). "Horizontal Federalism: Exploring Interstate Interactions," *Journal of Public Administration Research and Theory*, 14(4): 535-546.
- Box-Steffensmeier, Janet M., & Jones, Bradford S. (2004). *Event History Modeling: A Guide for Social Scientists*, Cambridge, UK.: CambridgeUniversity Press.
- Box-Steffensmeier, Janet M., De Boef, Suzanna., & Joyce, Kyle A. (2007). "Event Dependence and Heterogeneity in Duration Models: The Conditional Frailty Model," *Political Analysis*, 15: 237-256.
- Bratton, William W., & McCahery, Joseph A. (2001). "Tax Coordination and Tax Competition in the European Union: Evaluating the Code of Conduct on Business Taxation," *Common Market Law Review*, 38: 677-718.
- Brunori, David. (2005). *State Tax Policy: A Political Perspective* (2nd ed.), Washington, D.C.: The Urban Institute Press.
- Bureau of Economic Analysis. (n.d.). *Local Area Personal Income. Regional Economic Accounts*: U.S. Department of Commerce.
- Cameron, Amna C. (2004). "Factors Leading to State Participation in the Streamlined Sales Tax Project," *Journal of Public Budgeting, Accounting & Financial Management*. 16(1): 80-108.

- Duerbeck, Edwin M. (1936). "Economic Control by Interstate Compact," *Social Forces*, 15(1): 104-111.
- Federal Communications Commission. (n.d.). Local Telephone Competition and Broadband Deployment. Statistical Report. Industry Analysis and Technology Division. Wireline Competition Bureau.
- Florestano, Patricia S. (1994). "Past and Present Utilization of Interstate Compacts in the United States," *Publius*, 24(4): 13-25.
- Hansen, Susan B. (1983). *The Politics of Taxation: Revenue without Representation*, New York: Praeger.
- Hellerstein, Walter. (1997). "Transaction Taxes and Electronic Commerce: Designing State Taxes that Work in an Interstate Environment," *National Tax Journal*, 50(3): 575-589.
- Hill, Kim Q., & Hurley, Patricia A. (1988). "Uniform State Law Adoptions in the American States: An Explanatory Analysis," *Publius*, 18(1): 117-126.
- Hildreth, W. Bartley., Murray, Matthew N., & Sjoquist, David L. (2005). "Interstate Tax Uniformity and the Multistate Tax Commission," *National Tax Journal*, 58(3): 575-589.
- Holleque, Matt., & Ratkovic, Marc. (2006). *A Race to Where?: Searching for Evidence of Strategic Interaction in the American States*, Paper presented at the Inequality and American Democracy: Building on the APSA Task Force, University of Minnesota. April 7-9, 2006.
- Holzinger, Katharina. (2005). "Tax Competition and Tax Co-operation in the EU: The Case of Savings Taxation," *Rationality and Society*, 17(4): 475-510.
- Hoyman, Michele., & Weinberg, Micah. (2006). "The Process of Policy Innovation: Prison Sitings in Rural North Carolina," *The Political Studies Journal*, 34(1): 95-112.
- Jones, Bradford S., & Branton, Regina P. (2003). *Beyond Logit and Probit: Some Alternative Duration Modeling Strategies for State Policy Adoption*, Paper presented at the Annual Meeting of the State Policy and Policy Conference, Tucson, Arizona. March 14-15, 2003.

- Kiewiet, D. Roderick., & McCubbins, Mathew D. (1985). "Congressional Appropriations and the Electoral Connection," *Journal of Politics*, 47(1): 59-82.
- Kingdon, John W. (1995). *Agenda, Alternatives, and Public Policy* (2nd ed.), New York: Addison-Wseley Educational Publishers.
- Klarner, Carl. (2003). "Measurement of Partisan Balance of State Government," *State Politics & Policy Quarterly*, 3: 309-319.
- McLendon, Michael K., Hearn, James C., & Deaton, Russ. (2006). "Called to Account: Analyzing the Origins and Spread of State Performance-Accountability Policies for Higher Education," *Educational Evaluation and Policy Analysis*, 28(1): 1-24.
- McLure, Charles E. Jr. (1997). "Electronic Commerce State Sales Taxation, and Intergovernmental Fiscal Relations," *National Tax Journal*, 50(4): 731-749.
- McLure, Charles E. Jr. (2002). "Thinking Straight About the Taxation of Electronic Commerce: Tax Principles, Compliance Problems, and Taxable Nexus," *National Bureau of Economic Research: Tax Policy and the Economy*, 16(1): 115-140.
- McNeal, Ramona S., Tolbert, Caroline J., Mossberger, Karen., & Dotterweich, Lisa J. (2003). "Innovating in digital government in the American States," *Social Science Quarterly*, 84(1): 52-70.
- Mikesell, John L. (1978). "Election Periods and State Tax Policy Cycles," *Public Choice*, 33(3): 99-106.
- Mikesell, John L. (2000). "Remote Vendors and American Sales and Use Taxation: The Balance between Fixing the Problem and Fixing the Tax," *National Tax Journal*, 53(4): 1273-1285.
- Mintrom, Michael. (1997). "Policy Entrepreneurs and the Diffusion of Innovation," *American Journal of Political Science*, 41(3): 738-770.
- Mintrom, Michael. (2001). *Achieving Quality Early Childhood Education For All: Insights from the Policy Innovation Diffusion Research*, New York: Foundation for Child Development.
- Mitchell, Dan. (2004). *Tax Competition and Fiscal Reform: Rewarding Pro-Growth Tax Policy*, Paper presented at the A Liberal Agenda for the New Century: A Global Perspective, Moscow, Russian Federation. April 8-9, 2004.

- Mohr, Lawrence B. (1969). "Determinants of Innovation in Organizations," *The American Political Science Review*, 63(1): 111-126.
- National Conference of State Legislatures. (2008). Member and Associate Member State Compliance, Executive Committee Task Force on State and Local Taxation of Telecommunications and Electronic Commerce.
- Oates, Wallace E. (2001). "Fiscal Competition or Harmonization? Some Reflections," *National Tax Journal*, 54(3): 507-512.
- Powell, David C. (2000). "Internet Taxation and U.S. Intergovernmental Relations: From Quill to the Present," *Publius: The Journal of Federalism*, 30(1): 39-52.
- Powell, David C. (2002). Interstate Cooperation and Internet Taxation: An Analysis of the Reasons for State Membership in the Streamlined Sales Tax Project, Paper presented at the Annual Meeting of the Western Political Science Association, Long Beach, California.
- Rao, M. Govinda., & Vaillancourt, Francois. (1994). "Interstate Tax Disharmony in India: A Comparative Perspective," *Publius*, 24(4): 99-114.
- Raisinghani, Mahesh S., & Petty, Dan S. (2002). E-Commerce Taxation Issues: A Balanced Perspective and Options for Resolution, In G. Dhillon (ed), *Social Responsibility in the Information Age: Issues and Controversies*, 160-172, Hershey, PA: Idea Group Publishing.
- Reenock, Christopher M., & Ackerman, John. (2003). Shifting Regulatory Responsibilities: Explaining State Environmental Audit Immunity and Privilege Law, Paper presented to the 61st National Conference, the Midwest Political Science Association, Chicago, IL, April 3-6, 2003.
- Salmon, Pierre. (1987). "Decentralization as an Incentive Scheme," *Oxford Review of Economic Policy*, 3(2): 24-43.
- Spengler, Joseph J. (1937). "The Economic Limitations to Certain Uses of Interstate Compacts," *The American Political Science Review*, 31(1): 41-51.
- The Tax Foundation, (2006). State Sales, Gasoline, Cigarette, and Alcohol Tax Rates by State.
- The Book of the States. (2006). Cost of Gubernatorial Campaigns, Most Recent Elections,

- 2000-2004: 148, The Council of State Governments.
- The Book of the States. (2007). Cost of Gubernatorial Campaigns, Most Recent Elections, 2000-2005: 159, The Council of State Governments.
- U.S. Census Bureau, (n.d.). Educational Attainment of the Population 25 Years and Over, By State, U.S. Department of Commerce.
- U.S. Census Bureau. (n.d.). State and Local Government Finances by Level of Government and by State, U.S. Department of Commerce.
- U.S. Census Bureau. (n.d.). State Government Tax Collections, U.S. Department of Commerce.
- U.S. Department of Education. (n.d.). Postsecondary Education, Digest of Education Statistics.
- Vermunt, Jeroen K., & Moors, Guy. (2005). Event History Analysis, In B. S. Everitt, & Howell, D. C. (ed), Encyclopedia of Statistics in Behavioral Science, 568-575, Chichester, U.K.: John Wiley & Sons.
- Volden, Craig. (2002). "The Politics of Competitive Federalism: A Race to the Bottom in Welfare Benefits?," American Journal of Political Science, 46(2): 352-363.
- Yamaguchi, Kazuo. (1991). Event History Analysis, Newbury Park, California: Sage Publications.
- Zhao, Zhirong. (2005). "Motivations, Obstacles, and Resources: The Adoption of the General Purpose Local Option Sales Tax in Georgia Counties," Public Finance Review, 33(6): 721-746.
- Zodrow, George R. (2002). Streamlining the Sales Tax: The SSTP, Other Approaches and Implications for State Economic Growth, Paper presented at the Texas Economists Economic Conference, Austin, Texas. April 10, 2002.
- Zodrow, George R. (2003). "Tax Competition and Tax Coordination in the European Union," International Tax and Public Finance, 10: 651-671.