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STATE SUPREME COURTS AND SHARED NETWORKING: THE  
DIFFUSION OF EDUCATION POLICY

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ABSTRACT

Studies of state supreme courts recognize the policy-making role of state courts, but often assume the decisions made by each court are independent of all other peer courts. While it is true that courts are independent from each other in the sense that they are not bound by the precedent of their peers,<sup>1</sup> and individual court-level attributes, such as ideology and institutional design, influence decisions and policy, a growing body of literature stresses that political actors, such as legislators, interest groups, and others, are interdependent and make decisions based on the attributes and actions of their peers, as well as individual-level factors.<sup>2</sup> This interconnected framework stresses that interactions between actors are governed not just by individual-level characteristics, but also the similarities and differences of actors. This theoretical approach is incompatible with traditional modeling strategies, which assume observations are independent of each other, and necessitates employing social network analysis that explicitly account for interdependence in statistical models.<sup>3</sup> In this study, we extend both the interdependent assumptions of social network analysis and the policy diffusion literatures to state supreme courts by

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<sup>1</sup> See, e.g., Gregory A. Caldeira, *On the Reputation of State Supreme Courts*, 5 POL. BEHAVIOR 83 (1983).

<sup>2</sup> See, e.g., Janet M. Box-Steffensmeier & Dino P. Christensen, *The Evolution and Formation of Amicus Curiae Networks*, 36 SOC. NETWORKS 82 (2014); James H. Fowler & Sangick Jeon, *The Authority of Supreme Court Precedent*, 30 SOC. NETWORKS 16 (2008); Scott A. Comparato & Shane A. Gleason, *Influencing the Law from Afar: State Supreme Court Citation Networks* (unpublished manuscript) (on file with the author).

<sup>3</sup> STANLEY WASSERMAN & KATHERINE FAUST, *SOCIAL NETWORK ANALYSIS: METHODS AND APPLICATIONS* 3–4 (1994).

examining education policy diffusion via court opinions. Importantly, we examine education policy diffusion across three waves from 1974 to 2004, which highlights the changing nature of the state supreme court policy network.

## I. INTRODUCTION

State court decisions play a prominent role in many policy areas. In our federalist system, many policy domains are left predominantly to the states, including such areas as marriage, divorce, and, perhaps most prominently, education.<sup>4</sup> Particularly since *San Antonio Independent School District v. Rodriguez*,<sup>5</sup> state supreme courts are often the final authority on education finance law.<sup>6</sup> However, while the decisions of state supreme courts are final within their jurisdictions, state high courts often look to the decisions of other courts for guidance.<sup>7</sup> Education finance reform is a matter of policy, and while scholars have long recognized the diffusion of policy between state legislatures, no study has, as of yet, studied the diffusion of policy change through the use of state supreme court citations as a diffusion mechanism.

Traditionally, the literature on state courts holds that judicial decisions are a function of attitudes or policy preferences, constrained by institutional considerations and the separation of powers system inherent in each state.<sup>8</sup> Much of this literature assumes that decisions reached by state courts of last resort are largely independent of other state courts of last resort.<sup>9</sup> Each state court has its own preferences; laws; particular set of institutional constraints; and confronts different governors, publics, and state

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<sup>4</sup> See, e.g., N.Y. DOM. REL. LAW §§ 1–272 (McKinney 2015); N.Y. EDUC. LAW §§ 1–9003 (McKinney 2015).

<sup>5</sup> *San Antonio Indep. Sch. Dist. v. Rodriguez*, 411 U.S. 1 (1973).

<sup>6</sup> DORE VAN SLYKE ET AL., *SCHOOL FINANCE LITIGATION: A REVIEW OF KEY CASES* 2 (1995).

<sup>7</sup> See, e.g., Caldeira, *supra* note 1, at 83; Comparato & Gleason, *supra* note 2, at 23; Shane A. Gleason & Scott A. Comparato, *The Importance of Context and Opinion Author Identity in State Supreme Court Citation Networks* 3 (Apr. 2014) (unpublished manuscript) (on file with authors).

<sup>8</sup> See, e.g., Melinda Gann Hall & Paul Brace, *State Supreme Courts and Their Environments: Avenues to General Theories of Judicial Choice*, in *SUPREME COURT DECISION-MAKING: NEW INSTITUTIONALIST APPROACHES* 281, 284 (Cornell W. Clayton & Howard Gillman eds., 1999); Paul Brace & Melinda Gann Hall, *Neo-Institutionalism and Dissent in State Supreme Courts*, 52 *J. POLITICS* 54, 66–67 (1990) [hereinafter *Neo-Institutionalism and Dissent in State Supreme Courts*]; Melinda Gann Hall, *Electoral Politics and Strategic Voting in State Supreme Courts*, 54 *J. POLITICS* 427, 430 (1992).

<sup>9</sup> See, e.g., *Neo-Institutionalism and Dissent in State Supreme Courts*, *supra* note 8, at 66 tbl.2 (examining only environmental and institutional factors in state supreme court decision making).

legislatures in rendering decisions. In addition, legal factors such as precedent within the state, state legislative history, and state constitutional and statutory language also play a role. However, this literature largely assumes that the decisions of one state supreme court are independent of decisions reached by neighboring state supreme courts.<sup>10</sup> We contend that this assumption misses the judicial dialog between state high courts.<sup>11</sup>

A small, but growing, literature finds state supreme courts often turn to each other for citations. This literature contends that state supreme courts look to their peers or other courts for guidance, particularly when dealing with a new area of case law.<sup>12</sup> Specifically, state supreme courts tend to cite their peers that are more professional and have specialized case law.<sup>13</sup> Thus, if a court is deciding a securities case, they may turn to the New York Court of Appeals since that court has developed an extensive specialized case law in that area.<sup>14</sup> While this literature is informative to the present study, it does not speak to the diffusion of policy, only the presence of citations. In this article, we wed this literature to that analyzing state policy change.

The diffusion literature shows state legislatures often adopt policy that has previously been adopted by neighboring states. Recent scholarship on policy diffusion has reached beyond the simple concept of geography by focusing on how states and nations learn from or emulate other states or nations, looking for leadership in a particular policy domain.<sup>15</sup> Emulation does not depend upon neighboring geographic lines but, rather, upon whether or not the policy has been adopted by a similarly situated state or nation and whether or not the policy worked.<sup>16</sup>

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<sup>10</sup> See, e.g., *id.*

<sup>11</sup> See, e.g., Gregory A. Caldeira, *The Transmission of Legal Precedent: A Study of State Supreme Courts*, 79 AM. POL. SCI. REV. 178, 178 (1985); Comparato & Gleason, *supra* note 2, at 25.

<sup>12</sup> Comparato & Gleason, *supra* note 2, at 24.

<sup>13</sup> *Id.* at 23–25.

<sup>14</sup> See, e.g., *Assured Guar. (UK) Ltd. v. J.P. Morgan Inv. Mgmt., Inc.*, 962 N.E.2d 765 (N.Y. 2011); *EBC I, Inc. v. Goldman Sachs & Co.*, 832 N.E.2d 26 (N.Y. 2005); *CPC Int'l, Inc. v. McKesson Corp.*, 514 N.E.2d 116 (N.Y. 1987); *Hotaling v. A. B. Leach & Co.*, 159 N.E. 870 (N.Y. 1928).

<sup>15</sup> See, e.g., Jack L. Walker, *The Diffusion of Innovations Among the American States*, 63 AM. POL. SCI. REV. 880, 897 (1969); Frederick J. Boehmke, *Policy Emulation or Policy Convergence? Potential Ambiguities in the Dyadic Event History Approach to State Policy Emulation*, 71 J. POLITICS 1125, 1136–37 (2009).

<sup>16</sup> See, e.g., Fabrizio Gilardi & Katharina Füglistler, *Empirical Modeling of Policy Diffusion in Federal States: The Dyadic Approach*, 14 SWISS POL. SCI. REV. 413, 439 (2008); Craig Volden, *States as Policy Laboratories: Emulating Success in the Children's Health Insurance*

In one of the rare instances where diffusion has been modeled for state courts' decisions, no influence was seen on state court decisions predicated on neighboring court decisions or neighboring legislative policy.<sup>17</sup> However, other research finds that geographic proximity does matter to citation patterns.<sup>18</sup> We contend that the lack of significant findings by Roch and Howard<sup>19</sup> may be due to failure to account for the inherent interdependence of citation networks. Diffusion necessarily requires states to be considered in relationship to each other, rather than as independent observations as is typical in most research designs. Recent studies of diffusion note that social network analysis, which treats observations as interdependent, holds great promise for modeling diffusion networks.<sup>20</sup> Drawing upon both previous work on state supreme court citations and legislative diffusion, we evaluate the diffusion of state supreme court education policy.

In this article we examine this citation of precedent in the promulgation of public school finance reform rulings. We do so through the examination of education policy diffusion through three successive waves of education finance reform. Importantly, because changes in education finance have gone through three waves from 1974 to 2004, we contend that the underlying data generation process for the network has changed. This highlights the changing nature of the state supreme court policy network.

## II. THE EVOLVING EDUCATION FINANCE REFORM

Education finance reform litigation is not monolithic; rather it has undergone three distinct waves since the 1970s.<sup>21</sup> Diffusion in each of these waves, we contend, will differ based on the environment imposed by the differing balance of power between federal and state courts, the relative focus of litigation, and the accompanying context in which the decisions occur. We now turn to

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*Program*, 50 AM. J. POL. SCI. 294, 310 (2006).

<sup>17</sup> See, e.g., Bradley C. Canon & Lawrence Baum, *Patterns of Adoption of Tort Law Innovations: An Application of Diffusion Theory to Judicial Doctrines*, 75 AM. POL. SCI. REV. 975, 985 (1981); Christine H. Roch & Robert M. Howard, *State Policy Innovation in Perspective: Courts, Legislatures, and Education Finance Reform*, 61 POL. RES. Q. 333, 341 tbl.2 (2008).

<sup>18</sup> Caldeira, *supra* note 11, at 188.

<sup>19</sup> Roch & Howard, *supra* note 17, at 341 tbl.2.

<sup>20</sup> See Bruce Desmarais et al., *Inferring Policy Diffusion Networks in the American States* 15–16 (May 17, 2013) (unpublished manuscript) (on file with authors).

<sup>21</sup> Michael Heise, *State Constitutions, School Finance Litigation, and the "Third Wave": From Equity to Adequacy*, 68 TEMP. L. REV. 1151, 1152 (1995).

a discussion of the three waves of this evolving network.

Scholars typically date the start of the first wave of education finance reform to the late 1960s.<sup>22</sup> During this first wave, opponents of unequal financing premised the remedy to inequality through the use of the Equal Protection Clause of the 14th Amendment to the U.S. Constitution.<sup>23</sup> However, in *San Antonio Independent School District v. Rodriguez*, the U.S. Supreme Court ruled that unequal financing for education did not violate the Equal Protection Clause of the U.S. Constitution.<sup>24</sup> That is, “the Constitution did not prohibit the government from providing different services to children in poor school districts than it did to children in wealthy school districts.”<sup>25</sup> This action effectively precluded any further court action at the federal level and ended the first wave of court ordered education finance reform. However, the ruling did not exclude further state court action.<sup>26</sup>

The second wave rested primarily on state education clauses and state equal protection clauses.<sup>27</sup> This second wave of cases began following the *Rodriguez* decision and lasted until 1989.<sup>28</sup> The third wave focused on specific adequacy provisions of state constitutions and continues to the present day.<sup>29</sup>

As of December 2009, forty-four states have experienced some form of state education finance litigation.<sup>30</sup> While the first wave

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<sup>22</sup> William E. Thro, *The Third Wave: The Impact of the Montana, Kentucky, and Texas Decisions on the Future of Public School Finance Reform Litigation*, 19 J.L. & EDUC. 219, 222–25 (1990).

<sup>23</sup> Heise, *supra* note 21, at 1153.

<sup>24</sup> *San Antonio Indep. Sch. Dist. v. Rodriguez*, 411 U.S. 1, 54–55 (1973).

<sup>25</sup> VAN SLYKE, *supra* note 6, at 2.

<sup>26</sup> *See id.*

<sup>27</sup> Heise, *supra* note 21, at 1157.

<sup>28</sup> *Id.* at 1157, 1159.

<sup>29</sup> See Michael Heise, *State Constitutional Litigation, Educational Finance, and Legal Impact: An Empirical Analysis*, 63 U. CIN. L. REV. 1735, 1737 (1995); Heise, *supra* note 21, at 1162; Thro, *supra* note 22, at 250.

<sup>30</sup> “Equity” and “Adequacy” School Funding Liability Court Decisions, NAT’L EDUC. ACCESS NETWORK, <http://schoolfunding.info/wp-content/uploads/2011/07/Equity-and-Adequacy-School-Funding-Decisions-by-Outcome2.pdf> (last visited Oct. 12, 2015). The six states where the courts have not ruled on education finance litigation are Delaware, Hawaii, Mississippi, Nevada, Utah and Iowa. *Id.* No litigation has been filed in the first five, while in Iowa there has not been a court decision. *School Funding Cases in Iowa*, NAT’L EDUC. ACCESS NETWORK, <http://schoolfunding.info/2011/12/school-funding-cases-in-iowa/> (last updated May 2012). Hawaii has a statewide unified school district and therefore no variation across districts. *School Funding Cases in Hawaii*, NAT’L EDUC. ACCESS NETWORK, <http://schoolfunding.info/2011/12/school-funding-cases-in-hawaii/> (last updated Dec. 2011). In addition, New Mexico has not had a high court decision. *See School Funding in New Mexico*, NAT’L EDUC. ACCESS NETWORK, <http://schoolfunding.info/2014/12/school-funding-cases-in-new-mexico/> (last updated Dec. 2014).

failed to effectuate change in financing reform and some of the early phases of the second wave were also often unsuccessful because they relied on state constitution equal protection clauses,<sup>31</sup> the later part of the second wave and the third wave have been much more successful.<sup>32</sup> In these later efforts, plaintiffs shifted to using state constitutional education clauses.<sup>33</sup> In the second wave of reform, these later equity-based cases were initially premised on state equal protection grounds and then centered on state education articles.<sup>34</sup> These clauses, in conjunction with state equal protection clauses, required states to create and maintain public school systems.<sup>35</sup> In the third wave, litigants have particularly focused on these articles to insist that they require the state to fund an acceptable and adequate education.<sup>36</sup> During this third wave, a significant number of litigants have sued to force the political branches to carry out the specific adequacy mandates of prior court orders.<sup>37</sup> It became more common for courts to find themselves in the position of enforcing their own decisions.<sup>38</sup> During this wave one often sees repeat litigation in a specific state.<sup>39</sup> The same parties that had filed suit in previous cases relitigate the matter to ensure that education in the state meets the mandated definition of “adequacy.”<sup>40</sup>

In this article, our focus is the way in which the decisions of one court transmit to other courts as a form of diffusion across the three waves. We now turn to a discussion of both citations between state supreme courts and the diffusion of precedent.

### III. STATE NETWORKING: THE DIFFERENCES IN CITATION AND DIFFUSION

The diffusion literature shows that state and national legislatures look to the adoption of policy in other states and nations as models to emulate. Early literature emphasized geographic proximity; a state or nation would adopt a policy that had been promulgated by a

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<sup>31</sup> See Heise, *supra* note 21, at 1155, 1157.

<sup>32</sup> See *id.* at 1159, 1163–64.

<sup>33</sup> *Id.* at 1162.

<sup>34</sup> *Id.* at 1157.

<sup>35</sup> See *id.* at 1160–61.

<sup>36</sup> See *id.* at 1162.

<sup>37</sup> See, e.g., *Lake View Sch. Dist. No. 25 v. Huckabee*, 91 S.W.3d 472, 477 (Ark. 2002); *Claremont Sch. Dist. v. Governor*, 635 A.2d 1375, 1381 (N.H. 1993).

<sup>38</sup> See, e.g., *Huckabee*, 91 S.W.3d at 511.

<sup>39</sup> *Id.* at 479.

<sup>40</sup> *Id.*; *Claremont Sch. Dist.*, 635 A.2d at 1381.

geographically neighboring state or nation.<sup>41</sup> According to Walker, by learning about the impact of policies in other states, policy makers may increase their ability to predict the potential impact of policies in their own state.<sup>42</sup> Mooney further suggests that such diffusion is most likely during the early stages of a policy's implementation and in cases when policies are likely to have geographically based impacts.<sup>43</sup>

Later scholars have deemphasized geographic proximity, finding instead that states or nations emulate the successful policies of states or nations that share similar political, demographic, or socioeconomic characteristics.<sup>44</sup> Emulation does not depend upon neighboring geographic lines but, rather, whether or not the policy has been adopted by a similarly situated state or nation and whether or not the policy worked.<sup>45</sup>

When examining state supreme court policy adoption, it is difficult to directly import studies of legislative diffusion to state supreme courts. Courts operate very differently from legislatures, and hence the process of legislative diffusion will be different from the learning and adoption process of state courts. A legislature justifies its policy adoptions on majoritarian preferences and preferred policy outcomes.<sup>46</sup> Courts, on the other hand, have to justify their decision on the law—and in our system of jurisprudence that means *stare decisis* precedent, as “[s]tare decisis remains at the heart of scholarly thinking about law.”<sup>47</sup> While a court might want to, and often does, follow its policy preferences, courts have to justify the decision through law and citation to precedent.

Of course, state supreme courts' use of *stare decisis* depends heavily on citations to their own prior decisions.<sup>48</sup> However, a state supreme court's cases are not its sole citation to authority. In addition to citing their own cases, state supreme court justices often employ citations from other state supreme courts that do not have

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<sup>41</sup> See, e.g., Frances Stokes Berry & William D. Berry, *State Lottery Adoptions as Policy Innovations: An Event History Analysis*, 84 AM. POL. SCI. REV. 395, 396 (1990); Walker, *supra* note 15, at 896.

<sup>42</sup> Walker, *supra* note 15, at 890.

<sup>43</sup> Christopher Z. Mooney, *Modeling Regional Effects on State Policy Diffusion*, 54 POL. RES. Q. 103, 119–20 (2001).

<sup>44</sup> Volden, *supra* note 16, at 310.

<sup>45</sup> See Gilardi & Fuglister, *supra* note 16, at 439; Volden, *supra* note 16, at 310.

<sup>46</sup> Maxwell L. Stearns, *Direct (Anti-)Democracy*, 80 GEO. WASH. L. REV. 311, 317 (2012).

<sup>47</sup> Jeffrey A. Segal & Robert M. Howard, *How Supreme Court Justices Respond to Litigant Requests to Overturn Precedent*, 85 JUDICATURE 148, 148 (2001).

<sup>48</sup> Randy J. Kozel, *The Scope of Precedent*, 113 MICH. L. REV. 179, 203 (2014).

any precedential authority over the citing court.<sup>49</sup> This discretionary citation is known as horizontal, as opposed to vertical, precedent.<sup>50</sup>

These horizontal citations are important for several reasons. First, they can help shape the content of the justice's opinion and thus the policy ultimately promulgated by the court. A growing body of literature acknowledges that the ability to shape the content of opinions can have a profound impact on the shape of the decision, perhaps to the point of drawing the opinion into line with outside preferences.<sup>51</sup>

Next, these citations can impact how the cited court's decisions are regarded in the broader legal community.<sup>52</sup> The inclusion of discretionary citations allows opinions to appear grounded in legal reasoning rather than an expression of policy preference.<sup>53</sup> Doing so may actually stave off review of state supreme court opinions by the U.S. Supreme Court.<sup>54</sup> Of course, using outside citations does come at a cost.<sup>55</sup> Discretionary citations allow an outside authority to exert influence, either positive or negative, over the shape of the citing court's case law.<sup>56</sup> In this sense then, state supreme courts must give up their status as the final authority on legal matters within the state, to an extent. Thus one would expect some care and thought to go into the citation of the opinions from other jurisdictions. Despite these possible deterrents, citations between state supreme courts are exceptionally common.<sup>57</sup> However, the systematic use of citations has not been explicitly modeled in the diffusion literature.

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<sup>49</sup> *Id.* at 204.

<sup>50</sup> *Id.* at 203–04.

<sup>51</sup> See generally Comparato & Gleason, *supra* note 2 (examining the variety of factors that influence state supreme court horizontal citations); Pamela C. Corley et al., *Lower Court Influence on U.S. Supreme Court Opinion Content*, 73 J. POLITICS 31, 42 (2011).

<sup>52</sup> See, e.g., Michael E. Solimine, *Judicial Stratification and the Reputations of the United States Courts of Appeals*, 32 FLA. ST. U. L. REV. 1331, 1336 (2005).

<sup>53</sup> See, e.g., Robert Anderson IV, *Distinguishing Judges: An Empirical Ranking of Judicial Quality in the United States Courts of Appeals*, 76 MO. L. REV. 315, 363 (2011); Jordi Blanes i Vidal & Clare Leaver, *Social Interactions and the Content of Legal Opinions*, 29 J.L. ECON. & ORG. 78, 79 (2013); Nuno Garoupa & Tom Ginsburg, *Building Reputation in Constitutional Courts: Political and Judicial Audiences*, 28 ARIZ. J. INT'L & COMP. L. 539, 550 (2011); Gleason & Comparato, *supra* note 7, at 3.

<sup>54</sup> Gleason & Comparato, *supra* note 7, at 4.

<sup>55</sup> See, e.g., Yonatan Lupu & James H. Fowler, *Strategic Citations to Precedent on the U.S. Supreme Court*, 42 J. LEGAL STUD. 151, 157 (2013).

<sup>56</sup> See, e.g., Stephen J. Choi et al., *Judicial Evaluations and Information Forcing: Ranking State High Courts and Their Judges*, 58 DUKE L.J. 1313, 1330 (2009); Corley et al., *supra* note 51, at 42; Garoupa & Ginsburg, *supra* note 53, at 542–43.

<sup>57</sup> See *infra* Figures 1–3.

Early work by Caldeira focused on the transmission of precedent by state courts,<sup>58</sup> while later work by Roch and Howard, Howard and Roch, and Cann and Wilhelm examined why and how state courts would rule in favor of a policy, in particular state education finance reform.<sup>59</sup> Howard and Roch in their latter work used a dyadic approach to model court diffusion premised on a court following another court that successfully ruled in favor of education finance reform.<sup>60</sup> In this study, citation was not seen as a motivating factor in policy adoption but as a necessary tactic to legitimize the policy ruling after a state court would analyze the political and socioeconomic characteristics of a sister state and use those as factors in emulation.<sup>61</sup>

Thus in this article, we seek to examine citations to precedent not just as after-the-fact legitimations, but as reasons in themselves for policy adoption. In short we seek to examine the factors that would lead one state court to cite another state court in the specific area of education finance reform. Simply put, citations are the diffusion mechanism for courts.

There has been an emergent literature on state supreme court citation network since the Caldeira work of the 1980s.<sup>62</sup> This work finds that patterns in state supreme court citations, both citing and being cited, are contingent on a combination of considerations. Similar to the diffusion literature, state supreme courts are inclined to cite those courts that mirror them politically and ideologically.<sup>63</sup> However, going beyond the diffusion literature, scholars note that other factors in citation include courts that have a good legal reputation and those that have the resources to produce high-quality judicial opinions.<sup>64</sup> We stress that these factors do not compete with each other but rather they complement each other.

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<sup>58</sup> See generally Gregory A. Caldeira, *Legal Precedent: Structures of Communication Between State Supreme Courts*, 10 SOC. NETWORKS 29 (1988) (examining state supreme courts' use of different sources of authority); Caldeira, *supra* note 1, at 84 (studying the effect of court reputation on the transmission of precedent); Caldeira, *supra* note 11, at 178 (discussing how state supreme courts rely on precedent from other jurisdictions to justify their decisions).

<sup>59</sup> See, e.g., Roch & Howard, *supra* note 17, at 333; Robert M. Howard & Christine H. Roch, *Leaders and Followers: Examining State Court Ordered Education Finance Reform 5–8* (unpublished manuscript) (on file with authors); Damon Cann & Teena Wilhelm, *Policy Venues and Policy Change: The Case of Education Finance Reform*, 92 SOC. SCI. Q. 1074, 1075 (2011).

<sup>60</sup> Howard & Roch, *supra* note 59, at 30.

<sup>61</sup> See *id.* at 22.

<sup>62</sup> See, e.g., Comparato & Gleason, *supra* note 2, at 3.

<sup>63</sup> See Caldeira, *supra* note 1, at 103; Caldeira, *supra* note 11, at 187.

<sup>64</sup> Caldeira, *supra* note 1, at 96–97; Caldeira, *supra* note 11, at 186–87.

To consider one factor alone provides an incomplete picture of state supreme court citation networks. Rather, state supreme courts must balance each consideration when deciding which courts to cite and the interplay of each of these factors also influences which state supreme courts are cited by their peers.

It is almost a scholarly given that ideology matters. State supreme court justices, like their federal counterparts, have distinct policy preferences, which they pursue through their opinions.<sup>65</sup> Of course, most state supreme courts face a number of constraints unique to the state level. For example, while Justices on the U.S. Supreme Court enjoy life tenure, most state supreme court justices must stand for reelection or reappointment on a regular basis.<sup>66</sup> Because of this, state supreme court justices must account for the preferences of other political actors in their respective states. Accordingly, majoritarian preferences may exert an influence over the decisions of state supreme court justices. For example, the 2010 Iowa Supreme Court retention election demonstrated the perils to elected judges of ignoring constituent and legislative preferences. From the time the Iowa retention system was instituted in the 1960s until 2010, no justice had failed to be retained.<sup>67</sup> However, in 2009 the Iowa Supreme Court issued a decision legalizing same-sex marriage.<sup>68</sup> The following year, voters removed three justices.<sup>69</sup> We assume that retention of their positions is a goal for state supreme court justices and expect to find that justices consider the political preferences of their principals—the voters and state-level elites to whom justices owe their tenure.

While we expect state supreme courts to cite ideologically proximate courts and conversely, not cite ideologically distant courts, we also expect them to be aware of other important state actors in the states in which those courts sit. Thus, state supreme courts will take into consideration the ideological distance of the states with whom they engage in citations.<sup>70</sup> In order to ensure the

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<sup>65</sup> See generally JEFFERY A. SEGAL & HAROLD J. SPAETH, *SUPREME COURT AND THE ATTITUDINAL MODEL REVISITED* (2002).

<sup>66</sup> Neal Devins & Nicole Mansker, *Public Opinion and State Supreme Courts*, 13 U. PA. J. CONST. L. 455, 457–58 (2010).

<sup>67</sup> Tyler J. Buller, Note, *Framing the Debate: Understanding Iowa's 2010 Judicial-Retention Election Through a Content Analysis of Letters to the Editor*, 97 IOWA L. REV. 1745, 1747 (2012).

<sup>68</sup> *Id.*

<sup>69</sup> A.G. Sulzberger, *Ouster of Iowa Judges Sends Signal to Bench*, N.Y. TIMES, Nov. 4, 2010, at A1.

<sup>70</sup> See Caldeira, *supra* note 58, at 52.

maximum compatibility of their opinions with the preferences of state actors, state supreme courts should cite states with similar ideological dispositions.

In addition to ideology, research has shown that citations patterns follow reputations. Some courts are viewed more favorably by their colleagues.<sup>71</sup> More reputable state supreme courts are more likely to be cited and, conversely, more reputable courts are less likely to cite other state supreme courts.<sup>72</sup> Reputation is typically operationalized as prestige. Prestigious courts are often well paid, have numerous law clerks, low caseloads, and highly discretionary dockets.<sup>73</sup> With ample resources and low demands, prestigious courts are able to produce high-quality opinions that are attractive to other courts, particularly those with little expertise in the issue area and fewer resources with which to craft opinions.<sup>74</sup> We contend the effect of prestige, which Comparato and Gleason find across all issue areas,<sup>75</sup> is present within education finance reform decisions.

Courts with specialized case law are more likely to be cited than courts with general case law.<sup>76</sup> Particularly in issue area research, one would expect that a court that issues more opinions in the area of education finance reform will be cited more by other states. Conversely, a state that has often issued rulings in the area of education finance reform might be less likely to cite other state courts since it has ample case law of its own upon which to draw. This suggests that legal capital may impact incoming and outgoing citations differently. A court with high legal capital can easily draw upon its own legal capital for citations, whereas a court with low legal capital must look beyond its own borders for high-quality legal citations.

While research emphasizes the importance of attitudes and institutional constraints, recent scholarship has reemphasized the importance of law to decisional outcomes, even after controlling for

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<sup>71</sup> See, e.g., Caldeira, *supra* note 1, at 84–86; John Henry Merryman, *The Authority of Authority: What the California Supreme Court Cited in 1950*, 6 STAN. L. REV. 613, 667 & tbl.11 (1954); Rodney L. Mott, *Judicial Affairs*, 30 AM. POL. SCI. REV. 295, 295, 303, 307 (1936).

<sup>72</sup> Comparato & Gleason, *supra* note 2, at 25.

<sup>73</sup> Peverill Squire, *Measuring the Professionalization of U.S. State Courts of Last Resort*, 8 ST. POL. & POL'Y Q. 223, 225–27 (2008).

<sup>74</sup> See Comparato & Gleason, *supra* note 2, at 12–13.

<sup>75</sup> See generally *id.*

<sup>76</sup> See, e.g., Caldeira, *supra* note 11, at 183; Comparato & Gleason, *supra* note 2, at 10; Gleason & Comparato, *supra* note 7, at 5, 10.

attitudes.<sup>77</sup> An important consideration in state education is the language of state constitutions. Most state constitutions have provisions guaranteeing free public education.<sup>78</sup> While many of these only speak of the obligation to provide free education, several states have much more detailed provisions describing the funding of, or providing for, uniform or efficient free public schools.<sup>79</sup> Generally the stronger the constitutional education provision, the more likely the state court will adopt education finance reform. For example, in *Connecticut Coalition for Justice in Education Funding, Inc. v. Rell*,<sup>80</sup> the Connecticut Supreme Court explicitly referenced their state constitution's educational provision and similarly worded education provisions of other state constitutions.<sup>81</sup> The majority opinion noted that

[w]e have discussed in detail . . . cases from states whose education clauses are worded and structured closely to article eighth [sic], § 1, of the constitution of Connecticut. The vast majority of the other states have reached the same conclusion, namely, that students are entitled to a sound basic, or minimally adequate, education in the public schools . . . .<sup>82</sup>

Thus, a court that has strong constitutional language regarding education finance reform will likely produce strong opinions that will be attractive to other courts. Additionally, with strong constitutional language in their own constitutions, courts like

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<sup>77</sup> See, e.g., Michael A. Bailey & Forrest Maltzman, *Does Legal Doctrine Matter? Unpacking Law and Policy Preferences on the U.S. Supreme Court*, 102 AM. POL. SCI. REV. 369, 369–70, 381 (2008); Brandon L. Bartels, *The Constraining Capacity of Legal Doctrine on the U.S. Supreme Court*, 103 AM. POL. SCI. REV. 474, 474, 488–90 (2009); Mark J. Richards & Herbert M. Kritzer, *Jurisprudential Regimes in Supreme Court Decision Making*, 96 AM. POL. SCI. REV. 305, 307, 316 (2002).

<sup>78</sup> E.g., CAL. CONST. art. IX, § 5 (“The Legislature shall provide for a system of common schools by which a free school shall be kept up and supported in each district at least six months in every year, after the first year in which a school has been established.”); N.Y. CONST. art. XI, § 1 (“The legislature shall provide for the maintenance and support of a system of free common schools, wherein all the children of this state may be educated.”); VA. CONST. art. VIII, § 1 (“The General Assembly shall provide for a system of free public elementary and secondary schools for all children of school age throughout the Commonwealth, and shall seek to ensure that an educational program of high quality is established and continually maintained.”).

<sup>79</sup> For example, while the Kansas Constitution speaks only of “establishing and maintaining public schools,” the Idaho Constitution calls for a “general, uniform and thorough system of public, free common schools.” Compare KAN. CONST. art. VI, § 1, with IDAHO CONST. art. IX, § 1.

<sup>80</sup> Conn. Coal. for Justice in Educ. Funding, Inc. v. Rell, 990 A.2d 206 (Conn. 2010).

<sup>81</sup> *Id.* at 229–30.

<sup>82</sup> *Id.* at 250 n.55.

Connecticut's in *Reil* will feel compelled to justify their decisions more broadly to provide ample justification for a pivotal part of their state constitutions.

Finally, we also examine geography. Although legislative diffusion studies have moved beyond simple geographic diversity, the early studies by Caldeira found that state supreme courts are most likely to cite geographically proximate courts.<sup>83</sup> However, later research with larger datasets and timelines has not found similar results. For example, Roch and Howard specifically modeled geographic diffusion in their 2008 analysis of court and legislative adoption of education finance reform and found no evidence of geographically proximate court diffusion.<sup>84</sup> Comparato and Gleason, despite hypothesizing that diffusion would occur in overall citations likewise found no support.<sup>85</sup> They offer two possible explanations for this null finding. First, Caldeira's results may have been a result of improper model specification.<sup>86</sup> Second, geography may have ceased to be a factor in citations with the advent of Lexis and Westlaw.<sup>87</sup> At least with respect to education finance decisions, we are able to evaluate which is the case.

#### IV. HYPOTHESES

Based on the above ideological, political, prestige, and legal factors, we offer the following hypotheses:

- The greater the ideological distance between courts, the less likely it is that a court will cite another state court's opinions.
- The greater the ideological distance between states as measured by citizen and elite ideology, the less likely it is that a court will cite that state court's opinions.
- The greater the prestige of a court, the more likely that court's opinions will be cited by another state court.
- The greater the prestige of a court, the less likely it is that the court will cite another state supreme court's opinions.
- The greater the number of opinions issued by a court, the greater the likelihood that another court will cite that court's opinions.

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<sup>83</sup> Caldeira, *supra* note 11, at 182–83, 188.

<sup>84</sup> See Roch & Howard, *supra* note 17, at 341 tbl.2.

<sup>85</sup> Comparato & Gleason, *supra* note 2, at 14, 24.

<sup>86</sup> See Comparato & Gleason, *supra* note 2, at 3, 14.

<sup>87</sup> *Id.* at 11–12.

- The stronger the state constitutional language, the greater the likelihood that a court will cite that state court's opinions.
- The stronger the state constitutional language the greater the likelihood that a court will cite another court's opinions.
- A court will not be more likely to cite another court's opinions simply because of geographic proximity.

## V. METHODS

Previous studies of state supreme court citation networks typically use dyads as the unit of analysis. This approach assumes GA:ID is independent of ID:GA and IL:OH. This assumption of independence may well produce biased results and, as a result, we employ social network analysis (SNA). SNA disposes of the traditional independence assumption in statistical modeling and instead treats observations as interdependent on each other.<sup>88</sup> SNA is unique in that it allows us to evaluate not only the propensity of a given court to cite decisions from other courts, but also to account for the interdependencies between each pair of courts, and all courts, simultaneously.

SNA is a broad term, which encompasses a number of different methods that treat observations as interdependent. In this article we employ two distinct approaches within the broader methodological family. First, we use descriptive methods to create a graphical representation of the network. This approach utilizes sociograms, the familiar "spider web" plots, which allow us to determine each actor's place in the network and to assess the centrality, or importance, of each actor. While sociograms are a useful starting point for any network analysis, they are not able to assess hypotheses in a manner akin to traditional regression analysis. In order to do that, it is necessary to turn to exponential random graph models. Exponential random graph models assess the propensity of tie formation within a network by modeling both actor and dyad level factors with structural features of the network. The end result of exponential random graph models is statistical output, which can be interpreted somewhat akin to regression or logit output. We now turn to a brief overview of each methodological approach.

Descriptive network models are often depicted with "spider web"

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<sup>88</sup> WASSERMAN & FAUST, *supra* note 3, at 3–4.

like plots. Beyond simply being interesting figures, these plots are calculated with a host of individual and network level statistics. For instance, in-degree measures the total number of times a court's decision is cited by a peer court. This statistic is a count and a higher in-degree indicates a node receives more citations. Out-degree measures the total number of citations each node makes to other nodes. Again, a higher out-degree means a court cites other courts more often. A court that is cited extensively takes on a prominent place in the network as its education finance decisions diffuse to peer courts. Far from simply indicating which courts are influential throughout the country, we are able to calculate the extent to which courts are connected to each other. That is to say, do courts treat education policy as something to be resolved internally, or is there a vibrant dialog between courts? The answer to this question is ascertainable through the density statistic, which measures the overall connectedness of the nodes. Density is calculated by taking the total number of ties formed across the entire network and dividing by the total number of possible ties. A network with the highest possible density, 1, would be one where every court cites every other court. In contrast, a network with a density of 0 would be one where each state cites only itself. In the sociogram itself, courts that are prolific, as either borrowers of other court's precedent or as sources of precedent for other courts, are located near the center, or core, of the network. Courts that are seldom active in the network are located near the edge, or periphery, of the network. Courts that do not participate in the network at all, neither drawing upon other courts' precedent nor having their opinions cited by their peers, are termed isolates and sit at the edge of the sociogram.

Exponential random graph models function almost as a traditional regression model by evaluating the probability of a tie forming between two nodes. However, unlike traditional causal models that assume independence of observations, exponential random graph models assume interdependence between observations. Key to modeling tie formation, exponential random graphs account for structural features of the network along with attributes or independent variables through an iterative modeling process. These models are then evaluated for their goodness of fit and interpreted in a manner quite similar to those used in traditional regression models.

## VI. DATA

We collect the full universe of state education decisions from 1971, which represents the onset of education finance reform cases, to 2007. We then utilize Shepard's Citations via Lexis to determine which state supreme courts cite each decision from 1971 through 2010.<sup>89</sup> These data are collected in the "traditional" form with each row in the dataset denoting a unique case and a series of forty-eight independent variables noting whether that decision was cited by each of the forty-eight continental state supreme courts.<sup>90</sup> We divide this data into three datasets corresponding to the three distinct "waves" of education finance reform.<sup>91</sup> While general citation patterns should hold for all three waves, because each wave relied on different areas of law (the first federal law, the latter two state law, and the last an area of law distinct from the second wave), we think there might be some discernible differences in citation patterns reflecting the changes in the legal and political bases of education finance reform.

While we collect our data in a conventional fashion with each case as an observation, SNA requires data to be in matrix form for analysis. In network matrices rows and columns have identical lists of courts. An intersection between a row and column notes how many times the first court cites the second across all cases. To provide a better account of the structure of a matrix consider the following hypothetical example. There are three states, A, B, and C, each with three education finance decisions. Their citations to each other are noted in Table 1.

**Table 1: Hypothetical Term Citations**

State	Case	A	B	C
A	1	4	0	0
A	2	6	3	0
A	3	5	2	0
B	1	1	1	0
B	2	0	8	1
B	3	0	7	0

<sup>89</sup> We also include lower state court decisions that are not reviewed by the state supreme court.

<sup>90</sup> Keeping with the norm in the diffusion literature, we exclude Alaska and Hawaii.

<sup>91</sup> See, e.g., Heise, *supra* note 29, at 1736; Heise, *supra* note 21, at 1152.

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<b>C</b>	1	1	0	5
<b>C</b>	2	2	1	4
<b>C</b>	3	1	0	3

We transform the data in Table 1 into the matrix shown in Table 2. The rows show the total number of times each state cites each state's decisions in the top row. So, A cites B's decisions five times, whereas B only cites A's decisions once.<sup>92</sup>

**Table 2: Hypothetical Network Matrix Citations**

State	A	B	C
<b>A</b>	-	5	0
<b>B</b>	1	-	1
<b>C</b>	4	1	-

We create three matrices, one for each wave of the data. We also gather an assortment of attributes, or independent variables, to use in evaluating the networks. We measure court ideology with the mean PAJID score for each court. Alternatively, we also employ the Berry et al.<sup>93</sup> measure of elite ideology in place of the PAJID measure. We account for the professionalism of each court with Squire's<sup>94</sup> measure of state supreme court professionalism. We note geographical contiguity with a dichotomous variable set to "1" if two courts' states physically touch, and "0" otherwise. We measure each court's potential pool of cases that can be cited with a count of all education finance decisions issued by that court in each wave. We note each state's legal culture with a three point measure of the complexity of each state's constitutional education provisions.<sup>95</sup>

In exponential random graphs, the dependent variable is whether or not a tie is formed between a pair of courts. In this case, the dyad is the citing court and the court that authored the opinion being cited. We begin our exponential random graph models with

<sup>92</sup> This is an example of a directed network where a dyad can have different values (i.e., AB can have a value of five whereas BA has a value of one). Some social network data are symmetrical, such as Box-Steffensmeier and Christenson's data, which notes the total number of times each interest group files together. Box-Steffensmeier & Christenson, *supra* note 2, at 85. The choice between the two approaches is theoretically driven and our research question only makes sense in the context of a directed graph.

<sup>93</sup> William D. Berry et al., *Measuring Citizen and Government Ideology in the American States, 1960–63*, 42 AM. J. POL. SCI. 327, 329–34 (1998).

<sup>94</sup> See Squire, *supra* note 73, at 223.

<sup>95</sup> See, e.g., Roch & Howard, *supra* note 17, at 334.

network structural terms designed to model the underlying data generation process in the network. After extensive model testing, we find that measures of both in-degree and out-degree, along with a measure dyad wise shared partners, best captures the underlying data generation process in the network. Exponential random graph models further require operator terms to model each attribute. The choice of operators is driven by theory and the nature of the hypothesis to be tested.

We model ideology with the absolute difference between each given pair of courts. To illustrate this point, consider Court A, which has an ideology score of 0.9, and Court B, which has an ideology score of 0.1. The absolute difference between those two courts' ideology scores is 0.8. Accordingly, our hypothesis suggests these courts will not cite each other. On the other hand, if Court C has an ideology of 0.9 and Court D has an ideology of 0.8, our hypothesis suggests a difference of 0.1 will lead to citation. We measure geographical proximity with dyadic covariance, which is a dichotomous variable set to "1" when two states share a physical border and "0" otherwise. We note the professionalism, constitutional provisions, and number of decisions issued by each court with the node covariance, which functions much like a regression coefficient. With the specification of both our networks and attributes complete, we now turn to a discussion of our results.

## VII. DESCRIPTIVE RESULTS

We begin with a descriptive overview of each wave's network. The first wave (pre-1973) is displayed in Figure 1. This network is sparse, with a density of 0.01. This has two causes. First, there were only four state supreme court education finance decisions filed during this wave.<sup>96</sup> Of those four decisions, only two decisions are actually cited. California's decision is cited by twenty-one other courts. Michigan's is cited by six courts. Additionally, in the first wave, courts either cite or are cited, and no court in this wave is both cited and cites. Interestingly, five of the courts that cite Michigan also cite California. Four of those five cite both the Michigan and California decisions in the same opinion,<sup>97</sup> indicating

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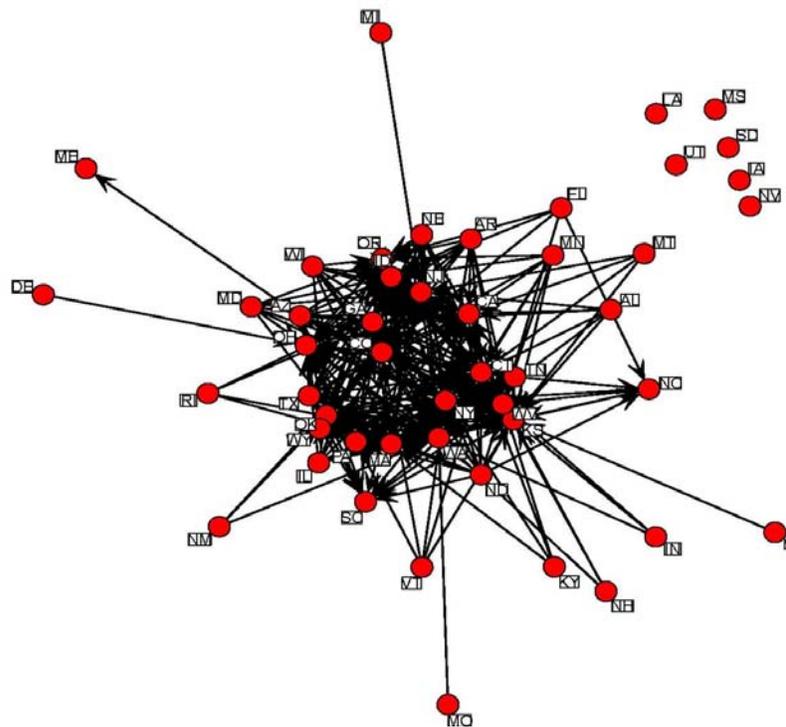
<sup>96</sup> *Serrano v. Priest*, 487 P.2d 1241 (Cal. 1971); *Governor v. State Treasurer*, 203 N.W.2d 457 (Mich. 1972); *Granger v. Cascade Cnty. Sch. Dist.*, 499 P.2d 780 (Mont. 1972); *Laconia Bd. of Educ. v. Laconia*, 285 A.2d 793 (N.H. 1971).

<sup>97</sup> *Roosevelt Elementary Sch. Dist. No. 66 v. Bishop*, 877 P.2d 806, 814 (Ariz. 1994); *Shofstall v. Hollins*, 515 P.2d 590, 592 (Ariz. 1973); *Robinson v. Cahill*, 303 A.2d 273, 278, 290



draw extensively on the opinions of other states, though they are never cited themselves. Others, like California, are extensively cited, though the California Supreme Court cites only one out-of-state opinion throughout the entire second wave. A few courts are more equitable in their citations. The Massachusetts Supreme Judicial Court is cited fourteen times and cites eleven out-of-state opinions. While only six courts completely abstain from the network, the core of the network is relatively exclusive and is populated by states with high judicial professionalism,<sup>100</sup> such as the New York Court of Appeals, the Pennsylvania Supreme Court, and the Massachusetts Supreme Judicial Court.<sup>101</sup>

**Figure 2: Wave Two Network**



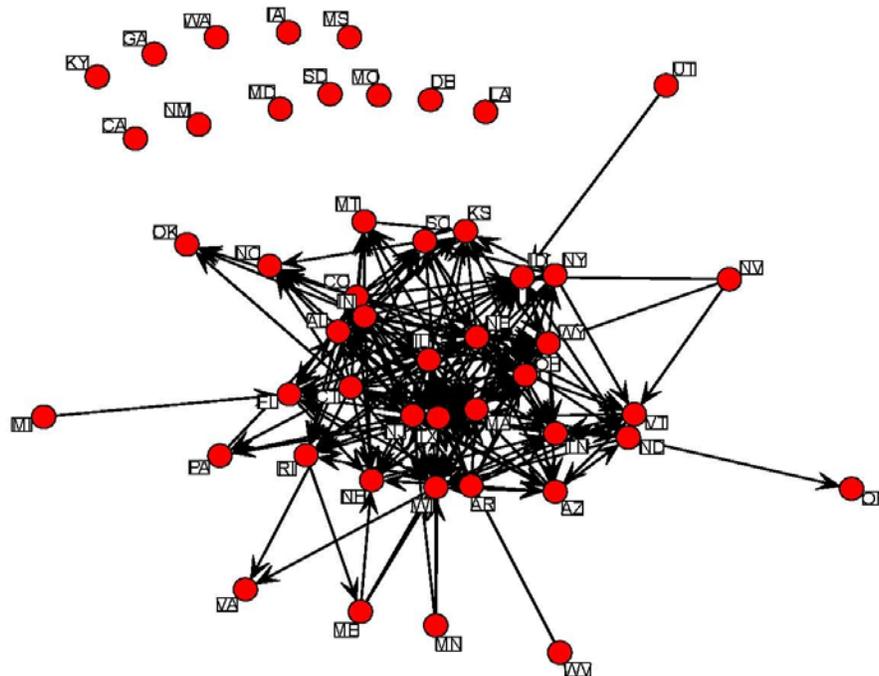
The third wave of the network departs from the second wave in several ways. The most striking difference between the third wave and its predecessor is the overall density. In the third wave, twelve

<sup>100</sup> See Squire, *supra* note 73, at 228 tbl.1.

<sup>101</sup> See *id.*

states are isolates and the overall density falls to 0.08. While the network still has a dense core and many states still cite several peers in their opinions, the distribution of citations is somewhat equitable to the second wave.<sup>102</sup> Interestingly, the behavior of actors changes from the second wave. Whereas Massachusetts had a roughly even balance between citations made and citations received in the second wave, it received nearly three times as many citations as it made in the third. California, which received a total of forty citations, while making just one, in the first two waves, completely abstains from the third wave network.<sup>103</sup> This is also evident in the changing network location of prominent actors from the second to third waves. Whereas Massachusetts, New York, and Pennsylvania are prominent in the second wave, both New York and Pennsylvania are now located somewhat on the periphery of the network.<sup>104</sup> This lends support to the notion that education finance decisions can be grouped into waves.

**Figure 3: Wave Three Network**



<sup>102</sup> Compare *supra* Figure 2, with *infra* Figure 3.

<sup>103</sup> Compare *supra* Figures 1, 2, with *infra* Figure 3.

<sup>104</sup> Compare *supra* Figure 2, with *infra* Figure 3.

An interesting aspect of the third wave is the identity of the isolates. In the first wave, twenty-four state supreme courts do not participate in the network. By the second wave, there are only six isolates. However, all of the second wave isolates were also isolates in the first wave.<sup>105</sup> Four states, Iowa, Louisiana, Mississippi, and South Dakota, never participate in the network.<sup>106</sup> While this does not indicate an unwillingness to network with peer courts, Mississippi and South Dakota did not hear any education finance decisions over the entire course of this study,<sup>107</sup> it does raise questions about what makes a state an attractive source to another court. As Table 3 shows, a number of education finance decisions from a variety of states are never cited. Descriptive social network analysis is not able to determine why those courts' decisions were not utilized by peers in other states. In order to do so, it is necessary to turn to exponential random graph models.

**Table 3: Noncited Education Finance Decisions by State**

State	Cases
AL	3
AK	3
AZ	4
AR	2
CA	1
CT	1
ID	1
IL	2
KS	1
KY	1
LA	1
MI	1
MN	1
MO	1
MT	2
NH	3

<sup>105</sup> Compare *supra* Figure 1, with *supra* Figure 2.

<sup>106</sup> See *supra* Figures 1–3.

<sup>107</sup> *School Funding Cases in Mississippi*, NAT'L EDUC. ACCESS NETWORK, <http://schoolfunding.info/2011/12/school-funding-cases-in-mississippi/> (last updated Aug. 2015); *School Funding Cases in South Dakota*, NAT'L EDUC. ACCESS NETWORK, <http://schoolfunding.info/2011/10/school-funding-cases-in-south-dakota/> (last updated Aug. 2013).

<b>NJ</b>	3
<b>NY</b>	2
<b>NC</b>	2
<b>OH</b>	3
<b>OR</b>	1
<b>PA</b>	2
<b>SC</b>	1
<b>TN</b>	1
<b>VT</b>	1
<b>WA</b>	1
<b>WV</b>	2
<b>WI</b>	1
<b>WY</b>	2

### VIII. EXPONENTIAL RANDOM GRAPH RESULTS

Much like we divide results by wave with our descriptive results, we employ a similar approach with the exponential random graph models. Unfortunately, the first wave is too sparse for meaningful analysis with exponential random graph models, and we are thus unable to model it. However, the second and third waves are amendable to exponential random graph models. The results of each model are presented in Table 4.

In the second wave we find more professional state high courts are less likely to cite out-of-state education finance decisions. Somewhat surprisingly, we also find that the more professional a court becomes, the less likely it is to be cited by its peers. Likewise, state supreme courts are less likely to be cited by their peers when their constitutions contain stronger language pertaining to educational finance. As expected, we find that the greater number of education finance decisions issued the more likely the court is to receive citations.<sup>108</sup>

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<sup>108</sup> We also run an alternative specification of the second wave model in which we replace the court's ideology with state elite ideology. This change, we find, is substantively similar to the model that uses court ideology, although increasing ideological distance between state elites decreases the probability of citation between states. This suggests that perhaps ideological considerations at this stage of the educational finance network are dominated by elite preferences and not those of the justices themselves.

**Table 4: Education Finance Decision Diffusion**

Variable	Wave 2	Wave 3
In-Degree	-0.050	-2.287*
Out-Degree	3.865**	0.304
Dyad-Shared Partners	-	-0.111
Geographical Contiguity	0.830	0.754
$\Delta$ Court Ideology	-0.001	-0.023**
Court Professionalism (Cited)	-1.564**	-3.030**
Court Professionalism (Citing)	-0.680*	-1.025*
Prior Decisions (Cited)	0.499**	0.073
Prior Decisions (Citing)	0.004	0.062
Constitutional Provisions (Cited)	-0.406**	-0.159
Constitutional Provisions (Citing)	-0.026	0.468**

Significance Levels: †: 10%\*: 5%\*\*: 1%

Much like we note marked changes in the descriptive results from the second to third wave, we find the underlying process determining citations also changes from the second to third wave in the exponential random graph models. In the third wave, we note some continuity from the second wave model, though we also note changes that demonstrate the network, and the underlying determinants of citation, evolve and change over the course of the study. The findings of court professionalism carry over from the previous model and demonstrate how more professional courts are less likely to both cite and be cited by peer courts.<sup>109</sup> Interestingly, in the third wave we find that courts with stronger constitutional language are more likely to cite other courts, perhaps in an effort to better justify their decisions in light of the heightened expectations that come with extensive constitutional language on education finance. While this change is notable for its marked departure from the second wave model, the most prominent difference between the second and third wave networks is the role of ideology. In the third wave, we find that greater ideological distance between two courts decreases the likelihood of citation between them. This indicates that what may have been a decidedly apolitical opinion writing process, at least with respect to the justices' own preferences, has taken on a political flare in the third wave.

<sup>109</sup> See Comparato & Gleason, *supra* note 2, at 22 (“[P]rofessional courts, which have the resources to conduct searches for opinions authored by other courts, are less likely to cite other courts themselves and instead rely on citations from their own case law.”).

## IX. DISCUSSION AND CONCLUSION

The results, with some exceptions, generally confirm our expectations via both descriptive network analysis and from a more causal standpoint via exponential random graph models. From a purely descriptive standpoint, we find that not all states participate in the education finance reform diffusion network.<sup>110</sup> Moreover, the states that do participate, both in terms of citing and being cited, change with the waves, which is in line with the literature's previous findings about the changing nature of the network.<sup>111</sup> Interestingly, the most network activity occurs in the second wave, suggesting that states are becoming more insular in the third wave.<sup>112</sup>

Unfortunately, the low density of the first wave network prevents us from assessing the first wave via exponential random graph models. However, the second and third waves provide us with ample data about the evolving nature of the education finance reform diffusion network. In the second wave we find that as courts become more professional, they are *less likely* to cite other courts.<sup>113</sup> Several states also began to develop their own large body of case law in the area of education finance reform, thus lessening the need for reliance on other courts' opinions and diffusion.<sup>114</sup> The obvious converse to this is that as courts issue more education rulings, they should receive more citations; however, we also find that as states issue more education finance decisions, they are actually *less likely* to be cited.<sup>115</sup>

In addition, we find an interesting pattern to the constitutional provisions. The stronger the education constitutional provisions, the lower the likelihood that the opinions from that state court will be cited.<sup>116</sup> This makes sense to the extent one agrees that law matters as much as, if not more than, ideology. Constitutional provisions and their interpretations by a state supreme court are

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<sup>110</sup> See *supra* Figures 1–3.

<sup>111</sup> See *supra* Figures 1–3.

<sup>112</sup> Compare *supra* Figure 2, with *supra* Figures 1, 3.

<sup>113</sup> See *supra* Table 4.

<sup>114</sup> See, e.g., *School Funding Cases in California*, NAT'L EDUC. ACCESS NETWORK, <http://schoolfunding.info/2015/01/school-funding-cases-in-california/> (last updated Oct. 2015); *School Funding Cases in New York*, NAT'L EDUC. ACCESS NETWORK, <http://schoolfunding.info/2014/12/school-funding-cases-in-new-york/> (last updated Dec. 2014); *School Funding Cases in Texas*, NAT'L EDUC. ACCESS NETWORK, <http://schoolfunding.info/2014/10/school-funding-cases-in-texas/> (last updated Oct. 2014).

<sup>115</sup> See *supra* Table 4.

<sup>116</sup> See *supra* Table 4.

unique to the law of that state and thus might have little relevance in convincing another court to cite that particular state and thus change the policy on education finance reform. However, as a state issues more decisions on education finance reform, they become more attractive as sources to peer courts.<sup>117</sup> This implies that while complicated constitutional provisions disqualify a court's decisions from being relevant to peer courts, a greater volume of case law allows a court to establish itself as a network leader in the second wave education finance reform diffusion network.

Turning to wave three, we find somewhat similar results, but the process seems to become more political in that ideological distance between courts now matters. Whereas second wave citations are made without respect to the ideological preferences of each court, by the third wave, ideologically distant courts are less likely to cite each other.<sup>118</sup> This, we suspect, may indicate a politicization of education finance reform litigation. This makes sense to the extent that court decisions now have an impact on state resources, in itself a political decision. That is, during wave two courts ruled on whether or not education finance reform *should* occur.<sup>119</sup> If yes, then it was up to the legislature to implement the decision. In wave three, the "adequacy" litigation, courts were being asked whether or not the legislature had *allocated* adequate funds to equalize education reform.<sup>120</sup> In other words, the court is now deciding if the legislature has adequately addressed education finance. Any ruling by the court now has political question implications because it decides the allocation of resources.

Thus, we now see that as courts become more ideologically distant from each other, they are less likely to cite each other,<sup>121</sup> preferences now matter. Also, in the converse to wave two, in wave three as courts have stronger educational language in their constitutions, they are more likely to cite other courts.<sup>122</sup> This implies that the decisions might be result-oriented jurisprudence—stronger constitutional provisions lead a state court to rule in favor of education finance reform.<sup>123</sup> A state court seeking to rule in the same way will now be more likely to cite that court even if their

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<sup>117</sup> See *supra* Table 4.

<sup>118</sup> See *supra* Table 4.

<sup>119</sup> See *supra* text accompanying note 35.

<sup>120</sup> See *supra* text accompanying notes 29, 36–40.

<sup>121</sup> See *supra* Table 4.

<sup>122</sup> See *supra* Table 4.

<sup>123</sup> See *Conn. Coal. for Justice in Educ. Funding, Inc. v. Rell*, 990 A.2d 206, 250 n.55 (Conn. 2010).

state constitution lacks specific language.<sup>124</sup>

We also find confirmation to our results in wave two that as courts become more professional they are less likely to be cited and as courts become more professional they are less likely to cite other courts. However, in both waves we confirm more recent findings that geographic proximity does not seem to matter. This may be a question of time.

What we find is that citations matter—they allow state courts to transmit models of policy change and implementation from one to another. Patterns do change as the nature of the legal challenge changed. Citation patterns in wave two, premised on whether or not there was a right to equal financing in education, appears more based on law. Citation patterns in wave three, premised on the notion of adequacy, appears based on politics.

Obviously this is only one issue area and it is possible that education finance reform is unique. These results differ in important ways from Comparato and Gleason's findings,<sup>125</sup> suggesting that the process of citation and diffusion may be issue-area specific. Our next step is to expand this citation analysis to other issue areas.

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<sup>124</sup> See *Rell*, 990 A.D. at 250 n. 55.

<sup>125</sup> See Comparato & Gleason, *supra* note 2, at 25.