Networked Justice: Judges, the Diffusion of Ideas, and Legal Reform Movements in Mexico

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Abstract. Existing research shows that the ideas of judges shape their behaviour. A natural next question to ask is, where do these ideas come from? Yet, there is little empirical evidence regarding the content and distribution of these ideas and even less evidence regarding the sources of these ideas, especially how ideas transfer or diffuse among judges. In this article, a survey of judges in the Mexican state of Michoacán generates original data on the attitudes and professional ties among these legal elites, and a mixed-methods design examines the diffusion of these attitudes along these ties, sequencing quantitative network analyses and interviews with judges to strengthen causal inferences. The core finding that the social structure of judges influences the attitudes judges hold contributes a valuable analytic complement to scholarship on comparative judicial behaviour, and clarifies our understanding of the role of judicial networks in strengthening democracy and the rule of law.

Keywords: judges, legal reform, network analysis, Mexico

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Introduction

Effective courts are widely regarded as vital to both democracy and development,[1] and a now substantial literature offers explanations of the political factors that help and hinder judicial reform, as well as the political sources of judicial behaviour once courts have been empowered.[2] While much of this literature focuses on the United States, comparative research on the empowerment of courts and the behaviour of judges, on and off the bench, has grown dramatically in recent years,[3] and Latin America stands out as a region with a rich literature on judicial empowerment and behaviour. Recent high-profile reforms in the region include the expansion of judicial review[4] and a massive transformation in criminal procedure,[5] and the behaviour of judges is an object of inquiry in a rapidly expanding literature examining the formal adjudication of cases on the bench, as well as a wide range of judge-led behaviours off the bench, including lobbying, litigation, labour actions, and so on.[6] In the context of this debate on the role of judges in both institutional change and judicial decision-making, the ideas of judges play a prominent causal role in shaping key legal and judicial outcomes in Latin America.[7]

[1] Guillermo O'Donnell, 'Democracy, Law, and Comparative Politics', *Studies in International Comparative Development,* 36: 1 (2001), pp. 5–36; United Nations Development Programme (UNDP), *Democracy in Latin America: Towards a Citizens' Democracy* (New York: United Nations, 2004).

[2] Lee Epstein and Jack Knight, *The Choices Justices Make* (Washington, DC: CQ Press, 1998); Jeffrey Segal and Harold Spaeth, *The Supreme Court and the Attitudinal Account Revisited* (Cambridge: Cambridge University Press, 2002).

[3] Tom Ginsburg, *Judicial Review in New Democracies* (Cambridge: Cambridge University Press, 2003); Ran Hirschl, *Towards Juristocracy: The Origins and Consequences of the New Constitutionalism* (Cambridge, MA: Harvard University Press, 2004); Jodi Finkel, *Judicial Reform as Political Insurance* (Notre Dame, IN: University of Notre Dame Press, 2008); Diana Kapiszewski, Sheldon Silverstein and Robert Kagan, *Consequential Courts: Judicial Roles in Comparative Perspective* (Cambridge: Cambridge University Press, 2013).

[4] For example, Finkel, *Judicial Reform*; Gretchen Helmke and Julio Rios-Figueroa (eds.), *Courts in Latin America* (Cambridge: Cambridge University Press, 2010).

[5] Máximo Langer, 'Revolution in Latin American Criminal Procedure: Diffusion of Legal Ideas from the Periphery', *American Journal of Comparative Law,* 55 (2007), pp. 617–76.

[6] For example, Gretchen Helmke, *Courts under Constraints* (Cambridge: Cambridge University Press, 2005); Javier Couso, Alexandra Huneeus and Rachel Sieder, *Cultures of Legality* (Cambridge: Cambridge University Press, 2011); Diana Kapiszewski and Matthew M. Taylor, 'Doing Courts Justice? Studying Judicial Politics in Latin America', *Perspectives on Politics*, 6: 4 (2008), pp. 741–67; Jeffrey K. Staton, *Judicial Power and Strategic Communication* (Cambridge: Cambridge University Press, 2010); Diana Kapiszewski, *High Courts and Economic Governance in Argentina and Brazil* (Cambridge: Cambridge University Press, 2012); Matthew C. Ingram, *Crafting Courts in New Democracies* (Cambridge: Cambridge University Press, 2016).

[7] Lisa Hilbink, *Judges beyond Politics in Democracy and Dictatorship: Lessons from Chile* (New York: Cambridge University Press, 2007); Ingram, *Crafting Courts*; Javier Couso and Lisa Hilbink, 'From Quietism to Incipient Activism: The Institutional and Ideational Roots of Rights Adjudication in Chile', in Helmke and Ríos-Figueroa (eds.), *Courts in Latin America*, pp. 99–127; Cesar Rodríguez-Garavito, 'Toward a Sociology of the Global

That is, judges play pivotal roles in either helping or hindering processes of legal change – legislative, institutional, and jurisprudential – depending on their attitudes towards that change. Put simply, the ideas of judges matter for core legal outcomes that concern a wide range of political and socio-legal scholarship, in Latin America and beyond.

Yet, despite the firmly established importance of judges' ideas for key judicial outcomes, scholars know very little about the *content* and *distribution* of these ideas, especially outside the United States, and even less about how these ideas *transfer* or *diffuse* among judges. In other words, if the ideas of judges matter so much for legal reform movements and judicial behaviour, then a notable gap exists in our understanding of the distribution and origins of these ideas. In short, if ideas matter so much, where do they come from? How do ideas spread among judges? Why do different attitudes regarding institutional design, jurisprudence and other forms of legal change diffuse among legal elites?

Addressing these empirical and theoretical gaps, I conduct a network analysis of the diffusion of ideas among all judges in the Mexican state of Michoacán. Building on recent network analyses of the law,[8] the project's core contribution is the empirical explanation of how ideas travel among judges. To be sure, diffusion is very difficult to study. The tools of network analysis lend themselves to this endeavour, yet causal inference about diffusion remains challenging even in network analysis, especially in contexts with limited relational data and no temporal variation in data.[9] Here, original and hard-to-find data on the relational ties among judges are gathered, as reported by judges themselves, and a way for studying the phenomenon of diffusion in contexts of limited data and no temporal variation is also proposed. Specifically, I follow recent advice that network research should adopt more

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Rule of Law Field: Neoliberalism, Neoconstitutionalism, and the Contest over Judicial Reform in Latin America', in Yves Dezalay and Bryant Garth (eds.), *Lawyers and the Rule of Law in an Era of Globalisation* (New York: Routledge), pp. 155–81; Rodrigo Nunes, 'Ideational Origins of Progressive Judicial Activism', *Latin American Politics and Society*, 52: 3 (2010), pp. 67–97.

[8] James H. Fowler, Timothy R. Johnson, James F. Spriggs II, Sangick Jeon, and Paul J. Wahlbeck, 'Network Analysis and the Law: Measuring the Legal Importance of Supreme Court Precedents', *Political Analysis*, 15: 3 (2007), pp. 324–46; Daniel Martin Katz, Joshua Gubler, Jon Zelner, Michael James Bommarito, Eric A. Provins and Eitan M. Ingall, 'Reproduction of Hierarchy? A Social Network Analysis of the American Law Professoriate', *Journal of Legal Education*, 61: 1 (2011), pp. 1–28; Yonatan Lupu and Erik Voeten, 'Precedent in International Courts: A Network Analysis of Case Citations by the European Court of Human Rights', *British Journal of Political Science*, 42 (2012), pp. 413–39.

[9] For example, James H. Fowler, Michael T. Heaney, David W. Nickerson, John F. Padgett, and Betsy Sinclair, 'Causality in Political Networks', *American Politics Research*, 39: 2 (2011), pp. 437–80.

local levels of analysis in order to increase analytic leverage in the study of network effects,[10] and I sequence quantitative network analysis with qualitative, in-depth interviews. Following advocates of qualitative network research[11] and mixed-methods network analysis,[12] the qualitative phase of this project helps clarify how judges themselves understand the origins of their own ideas, that is, how they attribute meaning to their ties and relations with other judges, complementing the quantitative analysis to help identify the causal effects of judicial networks. Crucially, the interview subjects are selected from the sample studied econometrically, offering a network version of nested analysis,[13] or what Bettina Hollstein called 'embedded' analysis.[14] This local, mixed-methods, embedded design offers analytic purchase that is otherwise absent in designs that might pursue similar questions at more aggregate levels of analysis or by using either method in isolation.

In greater detail, the project makes four main contributions: (1) original data on the variation in attitudes of judges regarding prominent institutional and jurisprudential changes shaping the legal landscape in Mexico; (2) personal, egocentric network data for individual judges; (3) group, socio-centric data for the judicial network in the whole state generated by aggregating the egocentric data; and (4) an analysis of the causal relationship between network structure and judicial attitudes. Complementing literatures on comparative judicial politics, sub-national politics, policy diffusion, and network analysis, a relationship between the social structure among judges and their attitudes is found. I call this phenomenon 'networked justice'.

Given the vital role of judges and their ideas in shaping institutional design, jurisprudence and other legal changes, a better understanding of this phenomenon clarifies the role of judges in strengthening democracy and the rule of law. However, the findings are also relevant beyond judges and well beyond Mexico. The diffusion of ideas is not restricted to legal ideas, so the findings have broad implications for politicians, academics, technical professions and any other fields or activities where one's influence or competence hinges on adopting current standards, best practices or behaviours consistent with dominant norms. Further, the particular institutional and jurisprudential changes referenced here are taking place throughout Latin America and other parts of the

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[10] Anand E. Sokhey and Paul A. Djupe, 'Interpersonal Networks and Democratic Politics', *PS: Political Science* (Jan. 2011), pp. 55–9.

[11] Bettina Hollstein, 'Qualitative Network Analysis', in James Scott and Peter J. Carrington (eds.), *Sage Handbook of Social Network Analysis* (London and New Delhi: Sage, 2011), pp. 404–16.

[12] Sylvia Domínguez and Bettina Hollstein (eds.), *Mixed Methods Social Networks Research: Design and Applications* (Cambridge: Cambridge University Press, 2014).

[13] Evan S. Lieberman, 'Nested Analysis as a Mixed-Method Strategy for Cross-National Research', *American Political Science Review*, 99 (2005), pp. 435–52.

[14] Bettina Hollstein, 'Mixed-Methods Social Networks Research: An Introduction', in Domínguez and Hollstein (eds.), *Mixed Methods Social Networks Research*, p. 16.

world.[15] In short, the findings have theoretical, methodological, and policy implications well beyond legal actors and Mexico. I return to these broader implications in the conclusion.

Looking ahead, I first motivate the emphasis on judicial networks by highlighting (1) the emphasis existing research places on the role of ideas in explaining key judicial outcomes and (2) how a network perspective can be harnessed to examine the origin and spread of these ideas. The following section introduces the reader to the landscape of legal change in Mexico, emphasising the extent to which patterns seen in Mexico are illustrative of patterns seen elsewhere in the region and in other parts of the world. Subsequently, the fourth section outlines working hypotheses, and in the fifth section the data are presented and the sequence of methods introduced. Notably, the egocentric, socio-centric and qualitative portions of the analysis require different methods, and the approach to each of these phases is outlined separately in this section. The empirical analysis is concentrated in the sixth and seventh sections: the first part of the sixth section examines the egocentric data, and the second part analyses the socio-centric data generated by aggregating the egocentric data; the seventh section offers qualitative evidence from personal interviews with focal individuals. This mixed-methods approach draws on several streams of evidence and techniques, engaging in a process of data- and method-triangulation to maximise the validity of conclusions.[16]

Overall, I find consistent and robust evidence that social structure influences judicial attitudes. This is evident in the two different statistical approaches required to examine egocentric and socio-centric data, and in the qualitative component, as well, where judges report the meaning that they themselves attribute to their network connections. That is, the legal attitudes judges hold are shaped by those with whom they interact. In short, *whom* they know shapes *what* they know.

Why Judicial Networks?

Ideas are a well-established predictor of judicial decisions and institutional change. Given the importance of ideas, network analysis is a promising tool to examine ideas and how these transfer among relevant actors. The following paragraphs expand on both these points.

In decision-making (judicial behaviour on the bench) attitudes, values and ideology play a critical role in determining the willingness of judges to review

[15] For example, Langer, 'Revolution in Latin American Criminal Procedure', pp. 617–76.
[16] Norman K. Denzin, 'The Logic of Naturalistic Inquiry', in Norman K. Denzin (ed.), *Sociological Methods: A Sourcebook* (New York: McGraw-Hill, 1978), pp. 54–73; Sidney Tarrow, 'Bridging the Quantitative-Qualitative Divide in Political Science', *American Political Science Review*, 89 (1995): 471–4.

particular cases, to address certain issues and in determining the final outcome of cases. The US literature holds ample evidence of this phenomenon, perhaps most dramatically in the emphasis on political ideology in the 'attitudinal model' of decision-making,[17] also called 'ideological voting'.[18] Scholars of comparative judicial politics are increasingly finding similar results.[19] Indeed, the comparative literature is moving beyond the US focus on political ideology, understood as an actor's placement along a conventional left–right continuum, to address other kinds of ideational variation among judges, including 'judicial role conception',[20] understood as a judge's view of the appropriateness of challenging actions by dominant political actors.[21]

In addition to shaping judicial decision-making, ideational factors also motivate and shape the behaviour of judges off the bench, activities of judges for and against institutional reforms. Evidence from the United States includes ideologically progressive, rights-oriented expansion and contraction of the judicial agenda[22] and court jurisdiction.[23] Comparative evidence includes variants of similar movements in Canada, Britain and India,[24] neoliberal judicial elites in Israel, Canada, South Africa and New Zealand,[25] and progressive judges in Spain,[26] Israel,[27] Mexico[28] and Brazil.[29] In sum, institutional

[17] For example, Segal and Spaeth, *The Supreme Court*.
[18] Cass R. Sunstein, David Schkade and Lisa Michelle Ellman, 'Ideological Voting on Federal Courts of Appeals: A Preliminary Investigation', *Virginia Law Review*, 90 (2004), pp. 301–54; Cass R. Sunstein, David Schkade, Lisa M. Ellman and Andres Sawicki, *Are Judges Ideological? An Empirical Analysis of the Federal Judiciary* (Washington, DC: Brookings Institution Press, 2006).
[19] See note 7, above.
[20] Lisa Hilbink, 'The Origins of Positive Judicial Independence', *World Politics*, 64: 4 (2012), pp. 587–621.
[21] See Couso and Hilbink, 'From Quietism to Incipient Activism', pp. 99–127.
[22] Charles R. Epp, *The Rights Revolution: Lawyers, Activists, and Supreme Courts in Comparative Perspective* (Chicago: University of Chicago Press, 1998).
[23] Howard Gillman, 'How Political Parties Can Use the Courts to Advance Their Agendas: Federal Courts in the United States, 1875–1891', *American Political Science Review*, 96 (2002), 511–24; 'Courts and the Politics of Partisan Coalitions', in Keith E. Whittington, R. Daniel Kelemen and Gregory A. Caldeira (eds.), *The Oxford Handbook of Law and Politics* (Oxford: Oxford University Press, 2008), 644–62.
[24] Epp, *Rights Revolution*.
[25] Ran Hirschl, 'The Political Origins of Judicial Empowerment through Constitutionalisation: Lessons from Four Constitutional Revolutions', *Law & Social Inquiry*, 25: 1 (2000), pp. 91–149.
[26] Lisa Hilbink, 'Politicising Law to Liberalise Politics: Anti-Francoist Judges and Prosecutors in Spain's Democratic Transition', in Terence C. Halliday, Lucien Karpik and Malcolm M. Feeley (eds.), *Fighting for Political Freedom: Comparative Studies of the Legal Complex and Political Liberalism* (Portland, OR: Hart Publishing, 2007), pp. 403–37.
[27] Patricia Woods, *Judicial Power and National Politics: Courts and Gender in the Religious-Secular Conflict in Israel* (Albany, NY: SUNY Press, 2008).
[28] Ingram, *Crafting Courts*.
[29] Fabiano Engelmann, 'Diversificação do espaço jurídico e lutas pela definição do direito no Rio Grande do Sul', unpubl. PhD diss., Federal University of Rio Grande do Sul

insiders (judges) and their subjective, non-material commitments play an important role in explaining crucial judicial outcomes. Judges can either help or hinder institutional design, jurisprudence and other forms of legal change depending on their attitudes towards said change.

Given the importance of judges and their ideas, a natural next question would be to ask about the content of these ideas and how some judges come to hold them while others do not. In short, where do judges' ideas come from? Notably, while we know the ideas of judges matter, there is little empirical evidence regarding the *content* and *distribution* of these ideas and even less evidence regarding how these ideas *transfer* or *diffuse* among judges.

First, we know very little about the content and distribution of judicial attitudes, especially outside the United States. That is, we know ideas matter and have a general sense of the kinds of ideas that matter, but little research to date has sought to systematically examine judges' attitudes about a range of institutional and jurisprudential issues.[30] In part, this empirical gap is due to a degree of vagueness in the term 'ideas', or what social movement scholars refer to as the 'ephemeral, amorphous nature of the subject matter'.[31] To be clear, current research does operationalise attitudinal orientations among judges.[32] While existing metrics offer valuable and increasingly sophisticated

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[30] Matthew C. Ingram, Octavio Rodríguez Ferreira and David A. Shirk, *Justiciabarómetro* (San Diego, CA: Trans-Border Institute, 2011). This was a survey of judges, prosecutors and defense attorneys and their attitudes towards legal reforms in nine Mexican states.

(UFRGS), Brazil, 2004; 'Tradition and Diversification in the Uses and Definitions of the Law: A Proposed Analysis', *Brazilian Political Science Review*, 1: 1 (2007), 53–70; Ingram, *Crafting Courts*.

[31] Doug McAdam, John D. McCarthy and Mayer N. Zald, 'Introduction: Opportunities, Mobilizing Structures, and Framing Processes – Toward a Synthetic, Comparative Perspective on Social Movements', in Doug McAdam, John D. McCarthy and Mayer N. Zald (eds.), *Comparative Perspectives on Social Movements* (New York: Cambridge University Press, 1996), p. 6.

[32] Several projects measure judicial ideology as a categorical variable capturing party affiliation and/or ideology as the party of the appointing executive, e.g., Sunstein et al., 'Ideological Voting', pp. 301–54. Segal-Cover scores code newspaper editorials for each Supreme Court nominee, yielding an index (−1 to 1) for ideology; see Jeffrey A. Segal and Albert D. Cover, 'Ideological Values and the Votes of U. S. Supreme Court Justices', *American Political Science Review*, 83: 2 (1989), pp. 557–65. Martin-Quinn scores use techniques from legislative roll-call analysis to estimate judicial ideal points based on the votes of judges. See Andrew D. Martin and Kevin M. Quinn, 'Dynamic Ideal Point Estimation via Markov Chain Monte Carlo for the U. S. Supreme Court, 1953–1999', *Political Analysis*, 10: 2 (2002), pp. 134–53; 'Assessing Preference Change on the U. S. Supreme Court', *Journal of Law, Economics, and Organisation*, 23: 2 (2007), pp. 365–85; for application in Brazil, see Scott Desposato, Matthew C. Ingram and Osmar P. Lannes, Jr., 'Power, Composition, and Decision Making: The Behavioral Consequences of Institutional Reform on Brazil's Supremo Tribunal Federal', *Journal of Law, Economics & Organisation*, 31: 3 (2015), pp. 534–67.

contributions, they seek to place judges on a conventional left–right ideological spectrum, and some, like the Martin-Quinn scores, rely on revealed preferences from behaviour that may be highly strategic, in which case these measures may not coincide with sincere preferences. Further, these metrics do not ask judges themselves about their attitudes. Here, I conceptualise ideas specifically as attitudes towards existing legal reforms (e.g., the creation of judicial councils) and styles of decision-making (e.g., whether lower-court judges should always have to defer to the decisions of higher courts). The survey questionnaire captures a wide range of attitudes regarding these institutional and jurisprudential topics and relies on judges' self-reports to identify their attitudes.

Second, we know even less about how these attitudes transfer or diffuse among judges. The overwhelming majority of research treats judicial attitudes as an explanatory variable in a broad endeavour to understand the consequences of these attitudes for judicial behaviour. Where attitudes do become an outcome of interest, studies tend to focus on static attributes or characteristics of actors as being the principal forces that shape ideas. Ideational profiles are understood as the product of an individual's features, for example, socioeconomic status. This may in fact be what is taking place. However, network analysis suggests that individual characteristics are only part of the story and that an individual's social relations and interactions with other individuals may account for a larger part of the origin of a judge's ideational profile. Indeed, these relational dynamics may be most of the story.

To be clear, attention to relational sources of legal change and law reform networks is not new. The idea of social networks and their influence is implicit in much social movement literature, including the legal mobilisation scholarship in the United States and abroad.[33] For instance, Woods explains the emergence of 'consensus around norms' as the result of sustained interaction within relatively diffuse 'judicial communities', groups of judges who also share similar demographic characteristics such as education and professional trajectory.[34] However, the treatment of network concepts is informal in the research cited above.[35] Even where the notion of networks and diffusion effects are referenced more explicitly, network concepts remain largely informal.[36]

More recently, a small number of scholars have framed the explanation of the diffusion of legal ideas in explicitly structural, network-analytic terms,

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[33] Michael W. McCann, *Rights at Work* (Chicago: University of Chicago Press, 1994); Epp, *Rights Revolution*; Hilbink, 'Politicising Law to Liberalise Politics', pp. 403–37; Woods, *Judicial Power*.

[34] Woods, *Judicial Power*, p. 23.

[35] For instance, a 'justice network' (*red de justicia*) might be a group of interested individuals or an informal association of groups, not a formal, structural representation of a network.

[36] For example, Langer, 'Revolution in Latin American Criminal Procedure'; Rodríguez-Garavito, 'Toward a Sociology', pp. 617–76.

harnessing a fuller set of conceptual, measurement and analytic techniques for the study of judicial networks. Fowler and co-authors examine citation networks of US Supreme Court precedents, identifying the most central or influential cases.[37] Similarly, Lupu and Voeten examine the citation networks of the European Court of Human Rights.[38] Back in the United States, Katz and Stafford use law clerks to proxy relations among US federal judges, constructing a network of the connectedness of the federal judiciary and operationalising judicial authority or power according to the structural location of actors in this network.[39] Closely related to the present study of ideational contagion among judges, Katz et al. examine the 'infectiousness of ideas' among the professoriate in 184 ABA-accredited law schools in the United States.[40] Using measures of network centrality, they conclude that law schools that send more of their graduates to tenure-track positions at other law schools become 'hubs' of legal influence, establishing the hierarchical structure of legal education. The architecture of these relations serves as the conduit for diffusing legal ideas, much as I propose judges' relational architecture shapes the diffusion of ideas regarding reform.

Network analysis also has some methodological advantages for examining the diffusion of ideas. For instance, conventional data sets and statistical techniques view units as independent of each other. That is, judges' attitudes are seen as a function of their own individual attributes (e.g., age, sex, education, income), and perhaps some contextual events (e.g., financial crisis), but not as a function of their colleagues' attitudes, which would violate the independence or non-interference assumption underlying most analyses of observational and even experimental data. Thus, the adoption of a new idea is fundamentally understood as an individualistic or atomistic phenomenon, based on the properties, features or attributes of isolated individuals. Conversely, a network perspective conceptualises units of analysis as *inter*dependent; judicial attitudes may be shaped in part by individual attributes, but they are also a function of the attitudes of other judges. One's attitude is explicitly dependent on the attitude of one's neighbours. Echoing earlier social movement theory, ideas spread among individuals who are in 'intense regular contact with each other'.[41] Thus, a long line of research applies network analysis to

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[37] Fowler et al., 'Network Analysis and the Law'; James H. Fowler and Sangick Jeon, 'The Authority of Supreme Court Precedent', *Social Networks*, 30: 1 (2008), pp. 16–30.

[38] Lupu and Voeten, 'Precedent in International Courts', pp. 413–39.

[39] Katz, Daniel Martin and Derek K. Stafford, 'Hustle and Flow: A Social Network Analysis of the American Federal Judiciary', *Ohio State Law Journal*, 71: 3 (2010), pp. 457–507.

[40] Katz et al., 'Reproduction of Hierarchy?', pp. 1–28.

[41] Myra Marx Ferree and Frederick D. Miller, 'Winning Hearts and Minds: Some Psychological Contributions to the Resource Mobilisation Perspective on Social Movements', Unpublished paper, 1977, p. 34, cited in McAdam, McCarthy and Zald, 'Introduction: Opportunities, Mobilizing Structures, and Framing Processes', p. 9.

problems and puzzles of diffusion, contagion and innovation, finding that 'an individual's direct contacts influence his or her decision to adopt or not adopt an innovation'.[42]

Judicial Reform Networks in Mexico

Mexico offers a promising environment in which to study justice reform networks. Historically suffering from weak and dysfunctional courts,[43] in the last 20 years, through a slow political opening starting in 1977 and after a transition to democracy in 2000, Mexico has advanced several high-profile reforms to address the widely recognised weakness of justice institutions. The two most prominent reforms target judicial councils and criminal procedure. First, a national reform in 1994 reshaped the supreme court and created a federal judicial council.[44] Mexico's 32 states were supposed to follow suit, but there was no explicit directive to do so and there is wide variation in the timing and content of judicial council reforms across Mexico's 32 sub-national units. Second, following developments in criminal law elsewhere in Latin America,[45] a 2008 federal constitutional reform has revolutionised the way Mexican judges think about criminal procedure and due process, transitioning from an inquisitorial process traditionally associated with civil law systems to an adversarial process associated with common law systems. This time, the federal reform mandated that all 32 states (including the federal district of Mexico City) adopt local versions of the new criminal procedure by 2016. Both the judicial council and criminal procedure reforms have filtered through the states in a highly uneven pattern.[46]

Beyond critical reforms that deserve attention for their substantive importance, existing research offers qualitative evidence of judges who act as reform entrepreneurs or agents of socialisation, constituting the kind of justice reform networks the present study seeks to formalise in a more systematic manner. For instance, a group of judges from the state of Michoacán formed a close-knit

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[42] Thomas W. Valente, *Network Models of the Diffusion of Innovations* (Cresskill, NJ: Hampton Press, 1995), p. 31.

[43] For example, Dato Param Cumaraswamy, *Independence of the Judiciary, Administration of Justice, Impunity: Report on the Mission to Mexico (2002).* Report of the Special Rapporteur on the Independence of Judges and Lawyers, Economic and Social Council of the United Nations. Submitted in accordance with Commission on Human Rights resolution 2001/39.

[44] Héctor Fix-Fierro, 'Judicial Reform in Mexico: What Next?', in Erik G. Jensen and Thomas C. Heller (eds.), *Beyond Common Knowledge: Empirical Approaches to the Rule of Law* (Stanford, CA: Stanford University Press, 2003), pp. 240–89; Finkel, *Judicial Reform as Political Insurance*; Ingram, *Crafting Courts.*

[45] Langer, 'Revolution in Latin American Criminal Procedure', pp. 617–76.

[46] Ingram, *Crafting Courts*; 'Mandates, Geography, and Networks: Diffusion of Criminal Procedure Reform in Mexico', *Latin American Politics & Society*, 58: 1 (2016), pp. 121–45.

group that promoted the judicial council reform in that state from 2002 onwards, and members of this group have since also promoted the criminal procedure reform. The judicial council reform was ultimately passed in 2005, and on 13 January 2012, the state passed the vital new code of criminal procedure. Several members of this group, led by state supreme court judge Alejandro González Gómez and state electoral judge Jaime del Río, studied law together in Spain at the Universidad Complutense de Madrid and were influenced by the teachings and experiences of progressive judges who lived through Spain's transition from Franco's dictatorship to democracy in the late 1970s and 1980s, including the 'Democratic Justice' movement.[47] Further, judges like Alejandro González also had academic careers (either before joining the bench or after) and interviews conducted in 2008 and 2012 showed that exposure to these individuals' academic and professional presence influenced colleagues and newer generations of legal professionals.[48]

On case selection, Michoacán is a good case for both methodological and non-methodological reasons. First, a network approach to ideational diffusion among judges is novel, and it was reasonable to expect that judges might not be willing to answer questions about their relational structure, so the ability to generate original data for the project at first seemed unlikely, especially in a less developed country facing serious challenges in public safety and security. Thus, it made sense to start somewhere where prior work indicated at least some form of network influence. Ingram established that judges discussed the presence of informal judicial networks and network influence in the state.[49] Thus, the research design builds on prior research for a more systematic examination of how relations among judges shape their ideas. Further, given the breadth and depth of legal reforms being pursued in Mexico, the country offers a rich environment in which to study the diffusion of ideas among judges that might help or hinder such a process. However, as in many larger federal systems, the implementation of many reforms in Mexico, including the judicial council and criminal procedure reforms, are left to the states. Many states have not promoted these reforms, while others have advanced far. In this regard, a good state in which to conduct this research is one in which there is some evidence of variation in the attitudes of judges towards these reforms. Again, Michoacán provides this variation to a much greater degree than other states. For instance, the judicial council reform of 2005 was a highly contested process, due in part to a deep division *among judges* regarding the composition and powers of the council. Similar divisions exist among judges regarding the criminal procedure reform. Lastly, the analytic gains from moving to a lower level of analysis

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[47] Hilbink, 'Politicising Law to Liberalise Politics', pp. 403–37.
[48] Ingram, *Crafting Courts*.
[49] Ingram, *Crafting Courts*.

motivate the focus on diffusion within a single state. As noted by a recent review of network research, 'instead of worrying about national representativeness, progress may come from in-depth study in smaller settings'.[50] This project is that kind of in-depth study in a smaller setting.

Working Hypotheses

The discussion above leads to two general, theoretical expectations. First, judges who interact more with other judges will be, all else being equal, 'more likely to receive information and influence',[51] and will therefore tend to be exposed to a wider range or diversity of ideas, facilitating the adoption or innovation of new ideas. The concrete, empirical implication in egocentric networks is that judges who have (1) large number or (2) high density of ties will be more likely to have higher values on attitudes towards reform (Hypothesis 1a). In socio-centric networks, judges who have a large number of ties will also tend to have more positive attitudes towards reform (Hypothesis 1b). Finally, in both types of networks, judges who interact more frequently or intensely will, all else being equal, tend have more positive attitudes towards reform (Hypothesis 2).

Second, judges who interact more with other judges who hold a particular attitude will, all else being equal, be more likely themselves to hold said attitude. In short, judges who are more connected will tend to share similar attitudes, capturing the diffusion argument. These judges and their connections constitute what I call 'justice reform networks'. By understanding the relational sources of judges' ideas, we can understand the social origins of strong courts, or 'networked justice'.

Methods and Data

This study applies quantitative and qualitative methods to the analysis of the relationship between judicial networks and judicial attitudes. At the outset, a clarification is in order regarding the potential endogenous relationship between network structure and attitudes.[52] That is, how much confidence should be placed in the conclusion that judicial interactions shape judicial attitudes given that judges with similar attitudes may be drawn to interact more frequently, rather than the other way around? Potential solutions to this problem include (1) longitudinal analysis,[53] (2) qualitative analysis[54] and (3)

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[50] Sokhey and Djupe, 'Interpersonal Networks', p. 58; see also Richard Snyder, 'Scaling Down: The Subnational Comparative Method', *Studies in Comparative International Development*, 36:1 (2001), pp. 93–110.

[51] Valente, *Network Models*, p. 53.

[52] Fowler et al., 'Causality in Political Networks', pp. 437–80.

[53] Fowler et al., 'Causality in Political Networks', *ibid*.

[54] Hollstein, 'Qualitative Network Analysis', pp. 404–16.

mixed-methods network analysis.[55] For this project, longitudinal analysis would necessitate additional survey waves. Absent these additional survey waves, I rely on the alternative, a mixed-methods approach sequencing quantitative and qualitative network analysis, to flesh out the causal relationship between network structure and attitudes. The methods are described in greater detail in a web appendix.[56]

No single method is perfect, so relying on a multi-method approach leverages the 'diversity of imperfections'[57] to strengthen the validity of conclusions. To this end, a mixed-methods strategy is employed in two ways: (1) in the combination of ego (egocentric) and whole (socio-centric) network data and analysis; and (2) in the combination of quantitative and qualitative methods. This approach builds on and contributes to a recent literature on systematic approaches to enhancing analytic leverage via mixed-methods designs,[58] including mixed-methods network analysis.[59] Notably, in addition to nesting qualitative evidence within the sample of observations analysed quantitatively to form an 'embedded' network design,[60] I also rely on two different forms of quantitative network analysis: ego- and socio-centric.

First, only the egocentric data are examined. Since each ego network is sampled independently of the others, these data can be studied with standard regression techniques that treat each observation as independent. Given the ordinal nature of the response variable, an ordered probabilistic regression model is applied. Second, the egocentric data is aggregated to form socio-centric networks, thereby drawing on the strengths of each type of data to offset their weaknesses. Network regressions that account for the structural dependence among observations model these socio-centric data.

Lastly, the research design combines these two forms of quantitative network analysis (personal and whole) with in-depth, qualitative network analysis. Following Hollstein, '[m]embers of networks [are] experts on the networks of which they are part', so the qualitative phase of work is

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[55] Hollstein, 'Mixed-Methods Social Networks Research: An Introduction', pp. 19–20. For still other suggestions, albeit with a more pessimistic outlook about the prospect for disentangling the direction of causation, see Cosma Rohila Shalizi and Andrew C. Thomas, 'Homophily and Contagion Are Generically Confounded in Observational Social Network Studies', *Sociological Methods and Research*, 40: 2 (2011), pp. 211–39.

[56] Web appendix available from author: mattingram.net.

[57] J. Brewer and A. Hunter, *Multimethod Research: A Synthesis of Styles* (Thousand Oaks, CA: Sage Publications, 1989) pp. 16–17; Abbas Tashakkori and Charles Teddlie, *Mixed Methodology: Combining Qualitative and Quantitative Approaches* (Thousand Oaks, CA: Sage Publications, 1998), pp. 40–2.

[58] Jason Seawright, *Multi-Method Social Science: Combining Qualitative and Quantitative Tools* (Cambridge: Cambridge University Press, forthcoming); see also Lieberman, 'Nested Analysis', pp. 435–52.

[59] Dominguez and Hollstein, *Mixed-Methods Social Networks Analysis*.

[60] Hollstein, 'Mixed-Methods Social Networks Research: An Introduction', pp. 16–17.

sequenced after the quantitative phase, using quantitative tools to select five judges for personal, semi-structured interviews in order to gain a 'better understanding of how networks matter and of what mechanisms and conditions figure in when producing certain network outcomes'.[61] The triangulation of data and methods of analysis inherent in this combination enhances the quality of the measures and the validity of final conclusions regarding causation.[62]

Data

A survey of judges in 2011 in the Mexican state of Michoacán generated original data for this study. The state had a total of 110 judges, including first-instance *jueces* and second-instance *magistrados*. Of this total, telephonic contacts sought a full census of these judges but obtained 85 responses. A follow-up effort via email obtained an additional five responses, yielding a total of 90 completed questionnaires, for a response rate of 81.82 per cent.[63] Once the initial data analysis was complete, personal interviews with five focal individuals were conducted in the state capital, Morelia, in January 2012.

The survey yields two types of network data: egocentric and socio-centric. Variables capturing network structure include degree (i.e., number of ties), density and average tie strength. Density is the number of ties as a proportion of the total possible ties. Tie strength was measured by asking respondents how close they were to each alter and how close each of the alters were to each other (*cercanía*). As noted above, higher values for size, density and tie strength indicate more connectivity within the personal network.[64] Following Betsy Sinclair's advice, additional variables must control for homophily and confounders that might be ascribed to context.[65] Homophily is the similarity between nodes on individual attributes that might cause these individuals to have the attitude of interest. Thus, control variables include age, progressiveness, ideological orientation, highest level of education, income, professional

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[61] Hollstein, 'Mixed-Methods Social Networks Research: An Introduction', p. 19.

[62] Hollstein, 'Qualitative Network Analysis', pp. 404–16; 'Mixed-Methods Social Networks Research: An Introduction', pp. 18–21; see also Padgett in Fowler et al., 'Causality in Political Networks', 466–70.

[63] The polling firm Data Opinión Pública y Mercados (DataOPM, Mexico City) conducted the telephonic interviews in June–July 2011. At DataOPM, Pablo Parás and Carlos López managed the survey administration, and both have conducted previous surveys in the justice sector in Mexico. I am grateful to them and to their staff for valuable feedback on early drafts of the questionnaire and for communications during the survey administration that enhanced its feasibility and interpretation.

[64] High density could potentially also impede the entrance of new ideas; Valente, *Network Models*, p. 40, citing James A. Danowski, 'Interpersonal Network Structure and Media Use: A Focus on Radiality and Non-Mass Media Use', in Gary Gumpert and Robert Cathcart (eds.), *Intermedia*, 3rd ed., (New York: Oxford University Press, 1986), pp. 168–75.

[65] Fowler et al., 'Causality in Political Networks', pp. 437–80.

position and judicial district. Progressiveness is captured by an ordinal variable generated by judges placing themselves on a continuum from traditional to progressive (1–7). A second question asks judges to place themselves on a left–right scale of ideological orientation (1–10; 1 = left, 10 = right). This variable was transformed to create three dichotomous variables (1–4 = left, 5–6 = centre, 7–10 = right).

Regarding age, there is reason to expect that younger judges may be more open to institutional and jurisprudential changes. Interview evidence suggests judicial elders are resistant to legal change because these changes tend to require a new way of performing their job, something they are disinclined to do late in their careers, and, in a study of judges, public defenders, and prosecutors across nine Mexican states, Ingram, Rodríguez-Ferreira, and Shirk found that age negatively correlated with positive attitudes towards certain reforms.[66] Therefore, age is expected to be negatively related to attitude towards reform. Further, the dummy variable for position distinguishes first- from second-instance appellate judges (1 if second-instance *magistrado*, 0 if first-instance *juez*). I anticipate that income and position capture seniority, which should also have a negative relationship with attitude. Table 1 summarises descriptive statistics for ego's attitude on four legal issues, network composition on these issues (alters' mean attitude), ego's demographic characteristics, and structural features of personal network.

Next, the egocentric data is aggregated to generate socio-centric network data. Given that the survey targeted all judges in the state, it is reasonable to conclude that some of these judges would list each other as alters. For instance, judge A may list judges B and C as alters, and then judge B may also be a respondent with her own alters, or judge D may list judge C as also being one of her alters; thus, we can get a fuller sense of the structure of social relations between these judges by finding the ways in which their social structure overlaps, weaving personal networks together into one large, whole network. Doing this for all respondents aggregates ego networks according to alter-alter matches or ego-alter matches, resulting in a whole network of 113 judges in the state of Michoacán.[67] Thus, for all practical purposes, the data capture a full network of all judges in the state. The attitudes of judges who did not participate in the survey (i.e., alters who were named by survey participants but who did not themselves participate in survey) were established by averaging the responses provided by participants.

[66] Ingram et al., *Justiciabarómetro*.
[67] One hundred and thirteen is more than the 110 judges listed in the official directory of the judiciary, but this directory does not account for recent personnel changes: indeed, the consultant who administered the survey noted that the interviewer was turned away from several courts because a judge had either been reassigned or no judge had yet been assigned to the court; in other cases, a new judge not yet on the official roster/directory was already there and completed the questionnaire.

Table 1. *Descriptive Statistics for Egocentric Data*

Variable	N	Mean	S. D.	Min	Max
Ego Attitudes					
Judicial Councils	78	4.24	1.20	1	5
Criminal Procedure	71	3.97	1.19	1	5
Same Sex Marriage	78	3.36	1.64	1	5
Deference to Higher Courts	78	3.58	1.62	1	5
Positivism	78	4.08	1.10	1	5
Military Jurisdiction	78	2.58	1.51	1	5
Network Composition (mean alter attitude)					
Judicial Councils	78	4.25	0.91	1.67	5
Criminal Procedure	76	4.12	0.87	2	5
Same Sex Marriage	74	2.96	1.38	1	5
Deference to Higher Courts	76	3.54	1.37	1	5
Positivism	76	3.95	1.01	1	5
Military Jurisdiction	74	2.73	1.25	1	5
Network Structure					
Size	78	2.81	1.15	1	5
Density	78	0.37	0.20	0	50
Closeness (mean tie strength)	78	3.99	0.87	1	5
Ego Demographic Data					
Progressive	78	6.10	1.03	2	7
Education (highest level)	78	2.47	0.80	1	3
Female	78	0.31	0.46	0	1
Age	78	44.18	7.42	32	62
Salary	76	4.78	1.31	2	7

After removing isolates and a number of observations that were missing data, the full, connected network consists of 102 nodes with varying demographic and attitudinal characteristics and 290 edges of varying strength. The 102 nodes constitute 92.73 per cent of the 110 names on the official directory of judges.[68] Figure 1 visualises the full network. Node size is based on number of ties (degree centrality); edge colour reflects tie strength (strongest in black); and node colour reflects attitude towards judicial councils (low to high passing from blue, through yellow, to red).[69] Table 2 summarises statistics for this socio-centric network.

Two features of the network in Figure 1 that are not conveyed by Table 2 are worth noting. First, the prominent group of judges on the state supreme court is, for the most part, centrally located. Nodes 658, 2,174, 2,482, 2,690,

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[68] Though these networks are technically incomplete, they are very nearly complete, and existing research includes examples of socio-centric analysis on networks ranging in completeness from 65.3 per cent to 77.7 per cent. See Ramiro Berardo, 'Networking Networkers: An Initial Exploration of the Patterns of Collaboration among the Members of a New Community in Political Science', *PS: Political Science* (2011), pp. 69.

[69] Visualisation generated using Cytoscape 2.8.2; Michael Smoot, Keiichiro Ono, Johannes Ruscheinski, Peng-Liang Wang and Trey Ideker, 'Cytoscape 2.8: New Features for Data Integration and Network Visualisation', *Bioinformatics*, 27: 3 (2011), pp. 431–2. Colour images available from author at http://mattingram.net/.

Figure 1. *Full Network of Judges in Michoacán*
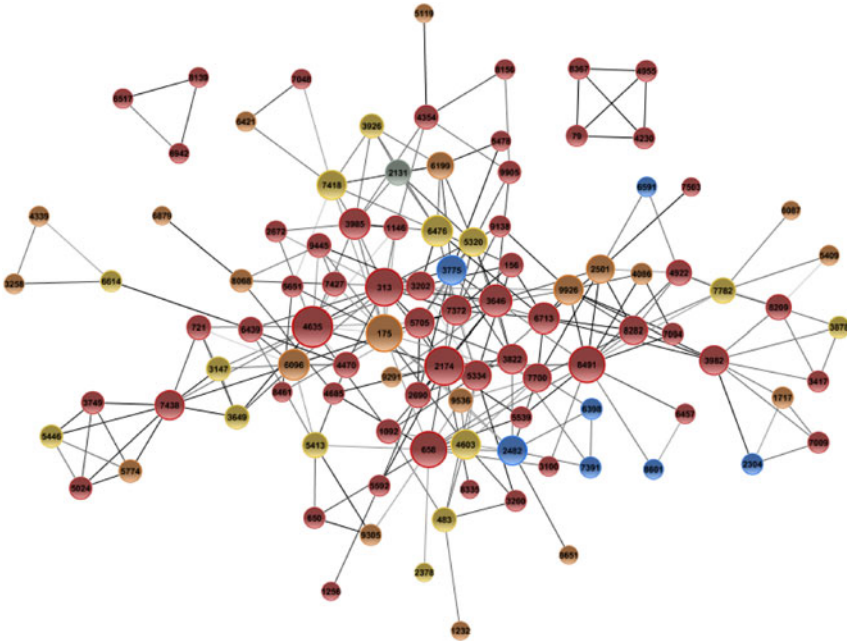
Table 2. *Descriptive Statistics for Socio-centric Data*

Variable	N	Mean	S. D.	Min	Max
Ego Attitude (Judicial Councils)	102	4.22	1.16	1	5
Network Weighted Mean	102	3.13	0.93	0.80	5.00
Female	102	0.31	0.47	0	1
Magistrado	102	0.18	0.38	0	1
Morelia	102	0.46	0.50	0	1
Measures of Centrality					
Degree	102	5.18	3.67	1	17
Betweenness	102	100.30	172.04	0.00	748.39
Closeness	102	1744	2292	1030	10202
Eigenvector	102	0.07	0.07	0.00	0.30

3,646, 3,775, 3,822, 5,320, 5,705, 6,398, 7,391, 8,335, 8,491 and 9,926 identify the judges in the state's highest court near the structural core or centre. Exceptions are 4,086, 6,457, 7,094 and 8,651, which are located either to the right or below the structural core, and 6,876 and 8,989, both of which were isolates (nodes without any ties to other nodes) and therefore excluded from analysis. Even among this reduced, elite group from the state supreme court, there is substantial variation in attitudes towards legal-institutional change. Second, while judges are assigned to judicial districts that correspond

with geographic areas across the state, several judges assigned to areas outside the state capital are nonetheless centrally located in the network, alongside state supreme court judges from the capital. For example, nodes 313 and 4,635 identify two first-instance judges from rural judicial districts that are nevertheless proximate to the structural core of the network (two larger nodes to the left of centre in Figure 1).

Some observers may wonder about the clustered nature of the dependent variable. That is, is it a problem that so many of the units seem to have similar values? Indeed, it is this convergence around a value or set of values that is of interest here, since it suggests that relational networks may help explain why judges hold similar attitudes. As noted more than 100 years ago by Galton (1889), clustering is itself a sign of interdependence.

In the socio-centric analysis of the network represented in Figure 1, the key explanatory variable is the mean value of the attitude of each of a node's neighbours (neighbourhood mean). Additional explanatory variables operationalise centrality in the overall network,[70] homophily (similarity between any two judges) and contextual factors. The entire network is treated as undirected, so all incoming and outgoing ties are treated equally. Measures of centrality are based on this undirected network, and all measures were generated in UCINET.[71]

Results

Egocentric networks

Given the ordinal dependent variable (ego's attitude), ordered probabilistic regressions were applied to the egocentric data. The main explanatory variable is the mean value of the attitude among the ego's alters, capturing the attitudinal composition of the network. This model approximates a 'personal network exposure' model of diffusion.[72]

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[70] The analysis includes four measures of centrality: degree (number of ties), betweenness, closeness, and eigenvector centrality. Betweenness centrality captures the extent to which a node is on the shortest path between two other nodes. Nodes with high values on this measure are often thought of as being good conduits, bridges, brokers, or gatekeepers between other nodes. Because more information should flow through these nodes than through others with lower values, these nodes are exposed to more information and should therefore adopt new ideas and attitudes faster or sooner than others. Closeness centrality captures the ease with which a node can reach all other nodes in the network. Lastly, eigenvector centrality counts ties to other nodes, but does so in a manner that gives more weight to connections to nodes that are themselves well-connected, capturing centrality in a way that takes the centrality of other nodes into consideration. See Stanley Wasserman and Katherine Faust, *Social Network Analysis: Methods and Applications* (Cambridge: Cambridge University Press, 1994), chap. 5.

[71] Steve P. Borgatti, Martin G. Everett and Lin C. Freeman, *Ucinet for Windows: Software for Social Network Analysis* (Harvard, MA: Analytic Technologies, 2002).

[72] Valente, *Network Models*, pp. 43–5.

Focusing on attitudes towards judicial councils, the partial correlation between ego's attitude and alters' mean attitude is 0.68 (p < 0.01). Table 3 summarises the regression results.[73]

The key predictor alters' mean(y), has the expected positive relationship with ego's attitude, and this result is statistically significant. Similarly, mean tie strength has a positive and statistically significant relationship. These core results hold while controlling for other aspects of network structure, demographic variables and judicial district, none of which are significant. Indeed, the substantive effect of alters' attitudes increases as the controls are added.[74]

Figure 2 clarifies the substantive significance of the main result. Based on Model 5, each plot graphs the predicted probability of each outcome (1–5) sequentially against alters' mean attitude, shading the area between the upper and lower bounds of the 95 per cent confidence interval.[75] The probability of the lowest attitude (y = 1) is highest where alters' mean attitude is at its lowest; in this instance, there is about an 87 per cent likelihood that ego's attitude has the lowest value if alters' mean is at its lowest value ($Pr(y|x) = Pr(1|1) = .87$), and this likelihood declines rapidly as alters' attitude increases. Conversely, there is approximately a 90 per cent likelihood of the highest outcome (y = 5) if mean(y) is also at its highest value. This likelihood drops precipitously if mean(y) decreases, to 60 per cent if mean(y) = 4, and to only 20 per cent if mean(y) = 3. In short, a judge's attitude towards judicial councils is shaped by his or her colleagues' attitudes towards councils. Taken in

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[73] Ordered logistic regressions must meet the parallel regression assumption, also called the probabilistic odds assumption. That is, ordered probit (and logit) assume that the effect of the explanatory variables (X) across all levels of the response variable (Y) is the same, i.e., the size of the coefficients does not change for different values of Y. A likelihood ratio test implemented at the bottom of each column shows whether the analysis meets that assumption. Test was implemented using *omodel* in Stata v.11. See also Malcolm M. Dow, 'Network Autocorrelation Regression with Binary and Ordinal Dependent Variables: Galton's Problem', *Cross-Cultural Research*, 42: 4 (2008), p. 407; Stata Data Analysis Examples: Ordered Logistic Regression, UCLA: Academic Technology Services, Statistical Consulting Group, available at http://www.ats.ucla.edu/stat/stata/output/stata_ologit_output.htm.

[74] Age, salary and position (*magistrado* dummy) are theoretically capturing similar dynamics, and *magistrado* and salary are empirically correlated (0.66), so they are not included in the same model. Still, including (1) age and *magistrado* or (2) age and salary in the same model did not alter core results.

[75] There is no simple, straightforward method for interpreting substantive effect in ordered probabilistic regressions; Dow, 'Network Autocorrelation Regression'. However, graphing the results offers one of the more intuitive ways of conveying substantive significance. Predicted probabilities were generated using *margins* and *prgen* commands in Stata v.11 and setting other variables at their means, and graphs by using the *rarea* option. See J. Scott Long and Jeremy Freese, *Regression Models for Categorical Dependent Variables Using Stata* (College Station, TX: Stata Press, 2006); Stata Annotated Output Ordered Logistic Regression. UCLA: Academic Technology Services, Statistical Consulting Group, available at http://www.ats.ucla.edu/stat/stata/output/stata_ologit_output.htm.

Table 3. *Personal Networks: Ordered Probabilistic Regression*
y = attitudes towards judicial councils (1–5)

|	1	2	3	4	5
Alters' mean(y)	0.92**	1.41**	0.98**	1.04**	1.01**
	(0.16)	(0.36)	(0.21)	(0.21)	(0.20)
Size		−0.09	−0.01	−0.03	0.05
		(0.23)	(0.15)	(0.14)	(0.14)
Density		0.83	0.18	0.53	0.03
		(1.18)	(0.85)	(0.87)	(0.83)
Tie strength (mean)		−0.01	0.42*	0.41*	0.46*
		(0.27)	(0.18)	(0.19)	(0.18)
Left		0.32			
		(0.65)			
Right		−0.00			
		(0.54)			
Progressive			0.07	0.11	0.07
			(0.14)	(0.15)	(0.14)
Education		0.20	0.02	0.08	0.03
		(0.29)	(0.19)	(0.20)	(0.20)
Female		−0.14	−0.20	0.03	0.22
		(0.38)	(0.38)	(0.39)	(0.38)
Age		−0.02	−0.02		
		(0.02)	(0.02)		
Salary				−0.22	
				(0.15)	
Magistrado					−0.24
					(0.49)
District (Morelia)		0.57	0.38	0.36	0.39
		(0.52)	(0.34)	(0.39)	(0.36)
N	78	45	78	76	78
LR chi2(4)	33.20	40.91	42.93	48.86	42.26
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R2	0.1918	0.3805	0.2481	0.2929	.2442
Test of parallel regression assumption (should not be significant):					
chi2(12)	1.37	32.13	16.76	31.44	25.99
Prob > chi2	0.71	0.46	0.94	0.25	0.52

** p < .01 *p < .05

combination with the finding regarding tie strength, this is systematic, empirical support for the proposition that intense interaction promotes ideational diffusion. These findings contrast with propositions that diffuse connections characterise 'judicial communities' that generate ideational consensus.[76]

Results for other attitudes, including the criminal procedure reform of 2008, and jurisprudential attitudes, positivism and deference to higher courts, are not

[76] For example, Woods, *Judicial Power*. Though the role of 'weak ties' inherent in Woods's account is not directly tested here; the positive and significant effect of tie strength cuts against that argument.

Figure 2. *Predicted Probability of Ego's Attitude by Alters' Mean Attitude*
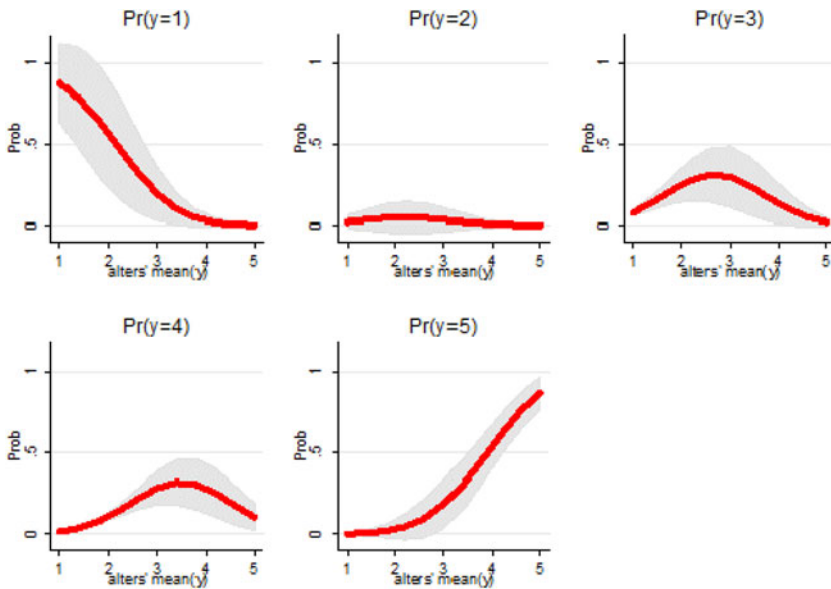
reported here for economy of presentation. In each analysis, mean attitude among alters maintains its positive and statistically significant relationship with ego's attitude on the same issue. Further, it is worth noting that higher education levels have a negative and statistically significant relationship with positivism. That is, the traditionally formalistic, technical-legal approach to judging may be losing strength as more and more judges obtain graduate degrees.

Socio-centric analysis

Moving to the whole network data, Table 4 reports the regression results for attitudes regarding the judicial council. The key variable of interest (the mean attitude of all contacts one step away from each judge) has a positive coefficient across all models, providing general support for the proposition that a judge's attitude towards council reform increases as the attitude towards said reform increases among a judge's close colleagues. This result is also statistically significant across all models. Indeed, even controlling for various measures of centrality, homophily and context, the result regarding direct contact remains.

It should be noted, however, that the analysis reported in Table 4 was conducted with network weights based on a valued adjacency matrix (W2 in

Table 4. *Whole Network; Ordered Probabilistic Regression*
y = attitudes towards judicial councils (1–5)

	1	2	3	4	5	6
Mean(y) for one-step alters	0.43**	0.47**	0.46**	0.35**	0.48**	0.42**
	(0.14)	(0.14)	(0.14)	(0.15)	(0.14)	(0.15)
Degree		−0.05				0.03
		(0.05)				(0.05)
Betweenness			0.00			
			(0.00)			
Closeness				0.00		
				(0.00)		
Eigenvector					3.66	
					(2.63)	
Female						−0.36
						(0.26)
Magistrado						−0.40
						(0.37)
Morelia[77]						−0.21
						(0.28)
N	102	102	102	102	102	102
LR chi2(4)	11.98	12.93	14.38	15.49	14.00	16.75
Prob > chi2	0.0025	0.0048	0.0024	0.0014	0.0029	0.0102
Pseudo R2	0.0514	0.0554	0.0616	.0664	.0600	0.0718

Test of parallel regression assumption (should not be significant):

|	1	2	3	4	5	6
chi2(12)	2.48	4.50	4.26	2.92	3.48	18.96
Prob > chi2	0.87	0.88	0.89	0.97	0.94	0.3945

** $p < .01$ * $p < .05$

code). Additional analysis with a simple binary adjacency matrix (W1) yielded no statistically significant results (findings not reported here). Stated otherwise, the mere presence of a direct relation between ego and alter is not sufficient to influence ego's attitude; rather, the influence of direct relations is contingent on the strength or intensity of that relation. Thus, the socio-centric analysis generates strong support for H2. The findings clearly complement the findings from the egocentric analysis, where both alters' mean attitude and tie strength had positive, statistically significant relationships with the ego's attitude towards judicial councils.

Turning to the other variables, none of the centrality measures has a statistically significant relationship with the respondent's attitude, so there is no support for H1a or H1b. Therefore, the results support the conclusion

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[77] There are 23 judicial districts in the state. Initially, 21 dummies captured the districts individually (two districts were unrepresented in the data). However, only one district had any significance (Zinapecuaro) relating to a single judge, and there were no meaningful departures from the results here. Judicial districts were then collapsed into three categories: Morelia, west of Morelia, and east of Morelia. Again, there were no meaningful differences compared with the results here.

Figure 3. *Predicted Probability of Ego's Attitude as a Function of Alters' Mean Attitude*
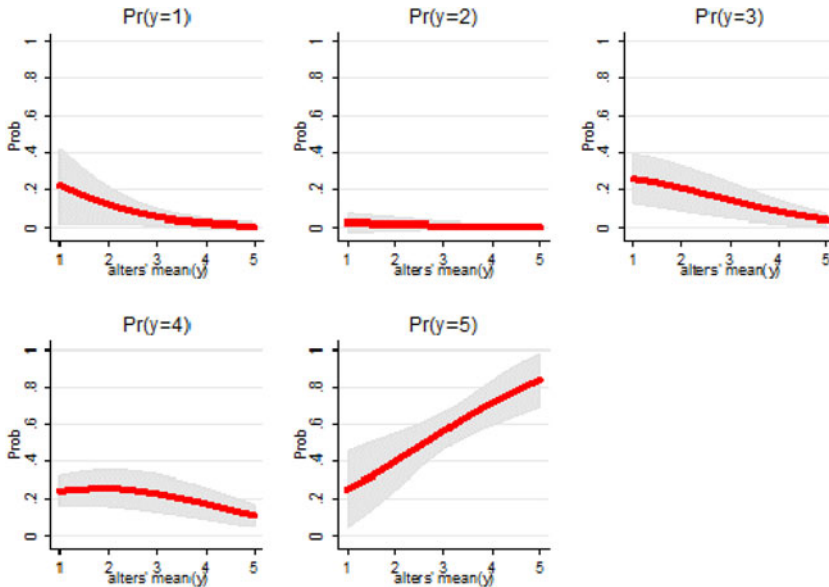
that general social location (captured by centrality), in and of itself, matters less than the strength of direct relations. Measures of homophily (sex and position) are not consistently significant, but in several alternative specifications (not reported here), female has a negative relationship at the 0.10 level of significance. For instance, controlling for closeness centrality, judicial district and position, female exerts a negative effect (p = 0.08). Further, in all auxiliary models the coefficient for *magistrado* has a negative sign. Both of these results complement the negative sign on these coefficients (though lack of statistical significance) from the egocentric analysis in the previous section.

Clarifying further, Figure 3 graphs predicted probabilities across response categories, setting the remaining variables at their means. As was the case with the prior egocentric analysis, each graph plots the predicted probability of each outcome (1–5; y-axis) against alters' mean attitude, weighted by the valued adjacency matrix (x-axis).

Two patterns should be highlighted from these graphs. First, the slope of the probability curves in the graphs supports the expected relationships. Specifically, in the first graph, it is more likely that ego will hold the most negative attitude towards judicial councils if her peers hold a negative attitude. Conversely, in the last graph, it is dramatically more likely that a judge will hold the most positive attitude towards judicial councils if her peers hold a

positive attitude than if they hold the most negative attitude. Second, however, the relationship is only clearly significant for the highest value of the outcome variable. Thus, the evidence is still complementary of the egocentric analysis, but only for the highest value of the outcome variable.

As a robustness check a linear network autocorrelation model was applied.[78] Linear network autocorrelation is not exactly appropriate given the ordinal response variable. Nonetheless, linear models generally yield robust results with ordinal variables, and results should at least be instructive. Various specifications of the network effects model[79] yielded results that were supportive of the core finding that social interaction, especially intense interaction, shapes one's attitudes (results not reported here). Indeed, the findings were statistically more significant than the 2SCML methods detailed above (see appendix), suggesting that the core results from the 2SCML reported in full above are among the more conservative.

In sum, quantitative analyses of network diffusion for ego- and socio-centric data complement each other in showing that two key factors influence ego's attitude: (1) alters' mean attitude, and (2) the strength of ties, that is, the intensity of interactions. Both of these key findings across different types of quantitative network analysis support the argument about the diffusion of ideas.

Qualitative network analysis

Triangulating further, qualitative methods yield additional insights regarding the core finding of the diffusion of ideas, and elucidate mechanisms of diffusion. The substantive part of the analysis addresses two issues (1) external validity of network structure, and (2) validity of causal inferences) and draws on a set of five personal, in-depth interviews with judges who participated in the survey generating the network data above. These judges are nodes 313, 2,174, 2,690, 3,646 and 4,635 in Figure 1.

Table 5 summarises features of the interview sample. First, these five judges constitute low-residual observations, as evidenced by their 'typicality' scores.[80]

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[78] This model was applied using *lnam* in the *sna* package in R; see Carter T. Butts, 'Social Network Analysis with sna', *Journal of Statistical Software*, 24: 6 (2008), pp. 1–51; R Core Team, 'R: A Language and Environment for Statistical Computing', R Foundation for Statistical Computing (2015), available at https://www.R-project.org.

[79] Butts, 'Social Network Analysis with sna', pp. 1–51; Malcolm M. Dow, 'Galton's Problem as Multiple Network Autocorrelation Effects: Cultural Trait Transmission and Ecological Constraint', *Cross-Cultural Research*, 41: 4 (2007), pp. 336–63.

[80] Given the ordinal nature of the outcome of interest, rather than using the absolute value of residuals I rank observations within each category by the predicted probability of the outcome, in essence yielding typicality scores ranked by the 'confidence' in that typicality score. See John Gerring and Jason Seawright, 'Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options', *Political Research Quarterly*, 61: 2 (2008), pp. 294–308.

Table 5. *Features of Interviewees*

ID	Typicality rank	Mean(y)	Degree centrality rank	Betweenness centrality rank	Closeness rank	Eigenvector centrality rank	Sex	Post	Morelia
313	8	4.6	3	4	1	1	M	Juez	N
2,174	18	5.0	2	1	2	3	F	Mag	Y
2,690	39	4.3	33	47	37	16	M	Mag	Y
3,646	25	4.7	7	11	7	6	M	Mag	Y
4,635	9	4.7	1	2	4	2	M	Juez	N

All of the interview participants are in the top half of typicality scores, and two of them are in the top 10 per cent. Thus, these are promising observations in which we might expect to find additional evidence of the central argument tested in the quantitative analysis.[81] All individuals are central according to various network measures. Further, the sample consists of four men and one woman, two judges from the interior of the state and three magistrados from the state capital, Morelia.

In January 2012, six months after the administration of the survey, these judges were reminded of the questionnaire and shown a visualisation of the judicial network for the full state as well as a visualisation of the network for the state supreme court. They were then asked to focus on two questions: (1) whether the network structure reflected their own mental image of social relations among judges (external validity), and (2) what meaning they themselves attributed to those ties and the network structure now visualised (causal inference).

Regarding external validity, 2,174, 2,690 and 3,646 (all magistrados) immediately recognised the visualisation of the network of the state supreme court as a fair representation of a split between primarily two groups of judges, including a core group of more progressive judges spearheading changes in institutional design and jurisprudence. Each of these judges also spontaneously volunteered his or her guesses about which magistrados were part of the core group and which were more peripheral; a clear majority of these unsolicited observations were correct. Thus, the transition from questionnaire to network visualisation appears to faithfully reproduce social structures that members of the court recognise from their own daily experience.

Beyond external validity, 2,690 acknowledged that the individuals he listed as contacts in his discussion group are people he considers influential for his own way of thinking. He explicitly stated that these contacts shape the way he thinks about the law, legal conflicts and institutional design. For instance, he noted an example in which he called one of his principal contacts, 1,660, now retired and not included in the network, to discuss a particular

[81] Lieberman, 'Nested Analysis', pp. 435–52.

technical-legal issue and how the conversation with 1,660 changed his perspective on the issue.

Similarly, 2,174 noted that she feels influenced by those individuals with whom she is in contact. Asked specifically whether the people with whom she interacts most frequently, her judicial discussion group, shaped her attitudes and ideas, she affirmed that this was the case. Over sustained interactions, she said, this group has come to have similar ideas. Pressed to give examples of this sort of phenomenon, 2,174 noted that she relies on her discussion group contacts (and her contacts rely on her) for information and advice regarding novel legal issues that arise in cases and insights regarding institutional conflicts and political conflicts outside the judiciary that might affect the institution. For instance, regarding jurisprudential issues, 2,174 recalled a conversation with one of her contacts in which she came to understand a particular legal concept from a different perspective. That is, judges might share entirely new legal concepts with each other, but they might also come to understand existing legal concepts from an entirely new vantage point.

Judges 313 and 4,635 clarified this dynamic further. Both named 3,646 as very influential in the way they think about both judicial councils and criminal procedure. Both also named 2,174 as influential in the way they think about responsibility in criminal law. They mentioned the concepts of *dolo* and *culpa*, both of which are used to establish different degrees of culpability, or elements of what US lawyers might call *mens rea* in criminal cases. These concepts generally have very strict and inflexible interpretations in Mexican law, but due to interactions with 2,174 both judges came to adopt a more flexible interpretation of these concepts, particularly variations of dolo.[82]

Asked specifically whether they interacted frequently with 3,646, 2,174 or their other named contact due to shared ideas or whether they held similar ideas because of the frequency of interactions, both affirmed the latter. For instance, both 313 and 4,635 were students of 3,646 in law school, though in separate years, so they were exposed to 3,646's ideas in academic settings and came to hold similar attitudes regarding legal issues. Further, they have both matured professionally under the mentorship of 2,174, first working for her and then interacting with her as they ascended through different positions and district posts. The early professional contact with 2,174 set the stage for sustained interaction over time, and both 313 and 4,635 said they have come to adopt some of her ideas (e.g., regarding dolo, as noted above).

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[82] 'Dolo' is equivalent to deliberate criminal intent, intending to commit or allow an act to be committed knowing (or acknowledging the possibility) that said act is criminal, while 'culpa' is equivalent to criminal negligence, unintentionally committing a crime out of recklessness or carelessness. See Stephen Zamora, José Ramón Cossío, Leonel Pereznieto, José Roldán-Xopa and David López, *Mexican Law* (Oxford: Oxford University Press, 2004), pp. 352–3.

Separately, 313 and 4,635 said they have both worked, at different times, in some of the most difficult districts in the state, including those districts where organised crime has a strong presence (e.g., Lázaro Cárdenas and Apatzingán). While judges in these districts, they faced bribe attempts and complex legal cases and also had to coexist alongside witnesses, victims and offenders in communities heavily populated with individuals connected to organised crime. They were able to successfully navigate these challenges, and as a result colleagues seek them out for advice when faced with similar situations. This, they said, may account for their prominence in the network.

In sum, the interview evidence supports the network influence finding, adding context and depth regarding certain structural features of the network. Further, regarding mechanisms of diffusion, interviews identified academic and professional mentorship relations as mechanisms underlying diffusion. Indeed, since most judges in Michoacán come from the state's main public law school (following a pattern seen across the Mexican states), professors in these institutions who are concurrently or subsequently also judges may be particularly influential. This insight resonates with findings regarding the 'infectiousness of ideas' among law professors and clerks.[83]

Conclusions and Implications

The network analysis presented here of the diffusion of ideas among judges in Mexico fills a gap in knowledge of legal reforms that are taking place in Mexico and across the continent. Further, the analysis has deep theoretical and policy implications for scholarly understanding of legal reform and the behaviour of legal professionals in Latin America. As noted in the opening, Latin America stands out as a region with a rich literature on the reform of justice institutions and the behaviour of legal professionals within these institutions. Scholarship on these phenomena seeks to better understand the sources of reform, the effects of reform, including the behaviour of legal professionals within these institutions, and the consequences of both reform and behaviour on society in general. In the context of this debate on the role of judges in both institutional change and judicial decision-making, the ideas of judges play a prominent causal role in shaping key legal and judicial outcomes in Latin America.[84] Yet, despite the firmly established importance of judges' ideas for key judicial outcomes, scholars know very little about how these ideas *transfer* or *diffuse* among judges. In short, if ideas matter so much, where do they come from?

In this context of an established literature on the causal role of ideas in explaining judicial behaviour on and off the bench, and responding to key

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[83] Katz et al., 'Reproduction of Hierarchy?', pp. 1–28.
[84] Hilbink, *Judges beyond Politics*; Couso and Hilbink, 'From Quietism', pp. 99–127; Rodríguez-Garavito, 'Toward a Sociology', pp. 155–81; Ingram, *Crafting Courts*.

questions about the sources of these ideas, the findings strongly support the proposition that attitudes and other ideas about legal reform diffuse in systematic and identifiable ways among judges. If ideas are important predictors of reform and these ideas spread among judges, then taken together these findings support thinking of judges as interconnected or interrelated with each other in ways that affect how they think about the law and legal institutions. This attitudinal interdependence challenges much of the existing literature that focuses exclusively on factors specific to isolated individuals, rather than treating judges as interconnected with other judges and legal institutions as interconnected with other legal institutions. Current research on judicial behaviour and reform tends to emphasise characteristics of individual judges or institutions, so if the findings here are taken seriously, then we need to expand these theories to think of sets or groups of connected units rather than as independent units, and theorise how these connections exert an influence across units, identifying the mechanisms by which characteristics of one judge might shape not only that judge but also nearby judges, and how this web of personal and institutional relations evolves over time. Pressed further, we need to theorise how multiple types of interrelated connections exert an influence across judges, other legal professionals and the institutions that house them, perhaps drawing on interdisciplinary literatures on complex systems,[85] enabling a more explicit examination of the justice system *as a system*.[86]

If interdependence is theorised more thoroughly, this theoretical adjustment has practical implications for our understanding of how best to promote concrete policies geared towards improving justice systems, as well as other efforts by judicial leaders, policy-makers, consultants and donors promoting reforms or technical assistance projects, of which there are large numbers in Mexico and elsewhere in Latin America. For these projects to be most successful, the findings suggest reform advocates need to have a better sense of the social or relational architecture in which these advocates

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[85] For example, Melanie Mitchell, *Complexity: A Guided Tour* (Oxford: Oxford University Press, 2011).

[86] See Matthew C. Ingram and Diana Kapiszewski, 'Introduction', in Matthew C. Ingram and Diana Kapiszewski (eds.), *Beyond High Courts: The Justice Complex in Contemporary Latin America* (n.d.). Separately, the findings are also broadly suggestive of a relationship between structure and agency. If social structure has a powerful influence over ideas and behaviour, then agency may not always be a fully conscious, deliberative phenomenon, as work on 'satisficing' and mental shortcuts has suggested (Herbert A. Simon, 'Human Nature in Politics: The Dialogue of Psychology with Political Science', *American Political Science Review* 79 (1985), pp. 293–304.). Nonconscious influences have deep implications for the nature of the relationship between structure and agency across multiple arenas, including rationalist, decision-theoretic approaches to behaviour. Beyond cognitive shortcuts, however, our individual decisions are not independent of other individuals; they are imbedded in a dependent web of relations. Thus, what appears to be an individualistic, conscious decision may in fact be the result of the non-conscious influence of social structure. Put simply if crudely, *whom* we know affects *what* we know, and perhaps *without us even knowing it*!

operate. The conceptual, theoretical and methodological tools of network analysis, including the theoretical insights above, offer concrete ways for mapping and analysing that social architecture in order to maximise the chances of success for myriad reform projects. For instance, the kind of network analysis presented here can help identify highly central or connected individuals (or institutions) that can be targeted early on in reform efforts, thereby facilitating support for, or the later adoption and spread of, reform by other individuals. Separately, workshops or other trainings related to a reform effort could be structured to maximise interactions among individuals in a way that enhances exposure to particularly influential individuals.

In sum, the project contributes original network data for judges in a large state in Mexico, and pairs these data with interview evidence in a mixed-methods network design to show how key attitudes diffuse among judges in empirically identifiable ways. The data, design and findings offer a novel (if not unique) contribution to the literature on comparative judicial politics, especially to existing research on the causal role of ideas in explaining judicial outcomes in Latin America.[87] Given the vital role of judges and their ideas in shaping institutional design, jurisprudence and other legal changes, a better understanding of the phenomenon of 'networked justice' promises to improve our understanding of the role of judges and other legal professionals in strengthening democracy and the rule of law.

The findings and implications of this study are relevant beyond the justice sector and well beyond Mexico. The diffusion of ideas is not restricted to legal ideas, so the findings have broad implications for politicians, academics, technical professions and many other fields or activities. Further, the particular institutional and jurisprudential changes referenced here are taking place throughout Latin America and other parts of the world, so the implications are not restricted to the particular courts or legal issues examined here. In short, the findings have implications for theory and policy well beyond legal actors and Mexico.

Spanish and Portuguese abstracts

Spanish abstract. Estudios muestran que las ideas de los jueces moldean su comportamiento. Una segunda pregunta normal sería: ¿De dónde vienen esas ideas? Ahora bien, hay muy poca evidencia empírica en relación al contenido y distribución de tales ideas y todavía menos evidencia en relación a las fuentes de tales ideas, especialmente cómo las ideas se transfieren y difunden entre los jueces. En este artículo, una encuesta a jueces en el estado mexicano de Michoacán generaron datos sobre las actitudes y los lazos profesionales entre estas elites legales. Además, un diseño con varios métodos examina la difusión de estas actitudes a lo largo de tales lazos, enumerando análisis

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[87] Hilbink, *Judges beyond Politics*; 'Origins of Positive Judicial Independence', pp. 587–621; Ingram, *Crafting Courts*.

de redes cuantitativas y entrevistas con jueces para reforzar las inferencias causales. El hallazgo principal de que la estructura social de los jueces influye en las actitudes que ellos mismos mantienen contribuye a la academia con un complemento analítico valioso sobre el comportamiento judicial, y clarifica nuestro entendimiento sobre el papel de las redes judiciales en relación al fortalecimiento de la democracia y el estado de derecho.

Spanish keywords: jueces, reforma legal, análisis de redes, México

Portuguese abstract. Pesquisas existentes mostram como as ideias dos juízes moldam seus comportamentos. A pergunta natural que se segue é: de onde vêm estas ideias? No entanto, há pouca evidência empírica com relação ao conteúdo e distribuição destas ideias e, ainda menos, em relação à origem destas ideias, especialmente, como estas são transferidas ou difundem-se entre juízes. Neste artigo, um levantamento entre juízes do estado mexicano de Michoacán produziu dados originais acerca das atitudes e laços profissionais entre estas elites legais. A partir de métodos mistos de pesquisa examina-se a difusão dessas atitudes ao longo destas relações, intercala-se análises quantitativas de rede e entrevistas com juízes para reforçar inferências causais. A observação central de que a estrutura social na qual os juízes se inserem influencia suas atitudes representa uma valiosa contribuição analítica complementar para estudos sobre comportamento judicial comparativo, além de clarificar nossa compreensão acerca do papel das redes judiciais para o fortalecimento da democracia e do Estado de direito.

Portuguese keywords: juízes, reforma legal, análise de redes, México