1 Current Trends in Multiple Streams Research

Originally developed by John Kingdon in his 1984 book *Agendas, Alternatives, and Public Policies*, the Multiple Streams Framework (MSF) is designed to explain policymaking under conditions of ambiguity or situations when there is more than one way of thinking about the same problem. To accomplish this task, Kingdon uses a fairly straightforward metaphor characterizing the policy process as encompassing three distinct streams of activity – a problem, policy, and politics stream. On occasion, the streams present a policy window, which he describes as an often fleeting opportunity to merge or couple the three streams and, in turn, induce agenda-setting. The theory further argues that coupling is facilitated by *policy entrepreneurs*, a term describing individuals who invest considerable time, energy, and resources in pursuit of agenda change (Kingdon 2003: 179).

The MSF's fairly accessible depiction of the policy process has made it one of the most widely applied frameworks within the policy sciences. A simple Google Scholar search yields over 30,000 citations of Kingdon's book alone and recent meta-reviews have unearthed hundreds of peer-reviewed publications applying the framework (Jones et al. 2016; Rawat and Morris 2016; see also Béland and Howlett 2016). However, despite the MSF's popularity, applications of the theory have been criticized for lacking rigor and failing to consistently define, operationalize, and measure key concepts (Béland and Howlett 2016; Cairney and Jones 2016; Jones et al. 2016). An international network of scholars has responded to these critiques by developing a research agenda for the MSF that is founded in shared hypotheses (Herweg, Zahariadis, and Zohlnhöfer 2023; Zohlnhöfer, Herweg, and Zahariadis 2022), a commitment to systematically testing key research questions (e.g., DeLeo and Duarte 2022; Dolan 2021), and a desire to test the theory's explanatory power in a variety of geographic and policymaking contexts (e.g., Goyal 2022; van den Dool 2023b; Herweg, Zahariadis, and Zohlnhöfer 2022).

A number of recent studies have made strides in articulating best practices for applying the MSF; however, much of this work remains diffuse and spread out across various edited volumes (Herweg, Zahariadis, and Zohlnhöfer 2023; Zohlnhöfer, Herweg, and Zahariadis 2022) and journal articles (Hoefer 2022; Jones et al. 2016). This level of fragmentation makes it challenging to develop a coherent research agenda since it heightens the risk of scholars talking past one another and defaulting to haphazard applications of core theoretical concepts. Complicating matters further, Kingdon's robust use of metaphors raises the specter of varying and at times incongruent conceptualizations of core concepts. Indeed, in one of the most comprehensive assessments of the theory to date, Jones et al. (2016: 30) observed that "While MSA analysts use the same

vocabulary they do not all share the same definition of concepts," which has, in turn, stunted robust theoretical development.

The following Element helps remedy these shortcomings by combining and elaborating on these important works in a single, authoritative text. In doing so, it seeks to promote greater ease of application by providing, for lack of a better term, a "one stop shop" that emerging and seasoned MSF scholars can turn to when applying the theory. In the pages that follow, we will walk the reader through the various steps involved in developing an MSF study, describing best practices, highlighting existing gaps in the literature, and, where possible, spotlighting exemplar studies.

Our Element will proceed as follows. The remainder of this section will provide a very brief introduction to the MSF, including key assumptions and the various elements. (Note that all of these items will be explored in greater detail in coming sections.) It then presents various indicators of MSF's growth over the last decade plus, including the number of articles applying the framework, the framework's application in new and novel contexts, the various methodologies used to study the MSF, and other useful metrics contextualizing the MSF's evolution.

Section 2 will zero-in on the three streams and provide a detailed assessment of the key elements associated with each stream (indicators, focusing events, the national mood, etc.), the role of policy entrepreneurs in determining the trajectory of agenda-setting, and the various types of policy windows. This section will close by outlining the hypotheses developed to test these concepts, including the various studies that have attempted to test them.

Having provided an introduction to the theory, Section 3 will familiarize readers with the various extensions that have been suggested in the last decade to make the framework applicable to various stages of the policy cycle in addition to agenda-setting for which it was originally developed (e.g., decision-making, policy implementation and policy termination). Section 3 will also consider whether MSF can be used to explain the scale and scope of policy change.

Section 4 will continue to push on the theme of MSF extensions; however, instead of focusing on the different stages of the policy process it will focus on recent attempts to apply the MSF to new governing contexts. It begins by exploring the research applying MSF to presidential systems outside the United States (e.g., Latin America) before examining applications in parliamentary and authoritarian contexts. Section 4 will also assess recent attempts to apply the framework in international and supranational organizations, most importantly the European Union (EU). It closes by describing some of the opportunities and challenges associated with applying MSF to multilevel governing contexts.

Section 5 articulates best practices for conducting an MSF study. It will begin by exploring the various types of qualitative and quantitative data used to measure key elements in the problem, policy, and political streams; policy windows; policy entrepreneurship; and other theoretical constructs. It will also examine the trade-offs associated with conducting qualitative, quantitative, or mixed-method MSF studies. It will include a series of examples featuring exemplar studies to help illustrate best practices.

The Element will close in Section 6 by briefly summarizing key findings from each of the previous sections, paying particularly close attention to future research directions.

1.1 A Brief Primer on the MSF

The following section very briefly introduces the MSF. (The following section provides a much more granular assessment of the theory and its structural elements.) MSF draws its inspiration from Cohen, March, and Olsen's (1972) garbage can model of organizational choice. Cohen, March, and Olsen characterize organizations as "organized anarchies," marked by six overarching features: (1) ambiguity; (2) time constraints; (3) problematic preferences; (4) unclear technology; (5) fluid participation; and (6) stream independence.

It is MSF's sixth assumption that tends to receive the most scholarly attention. Figure 1 provides an overview of the theory's structural elements. Broadly, MSF assumes three distinct streams of policy activity. The *problem stream* denotes the various issues and items vying for policymaker attention. The *policy stream* describes the various ideas and, in some cases, policy solutions developed by actors operating within and outside government. The *political stream* describes the constellation of political factors influencing issue attention and agenda-setting.
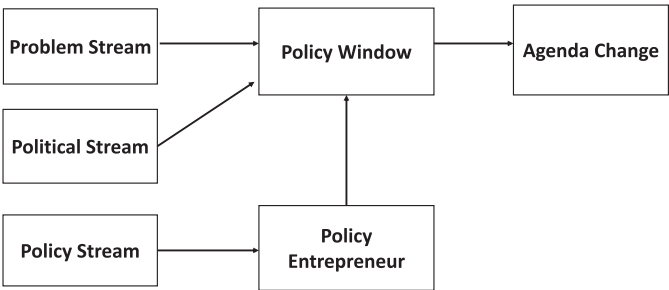

Figure 1 Diagram of the multiple streams framework.
Adapted from Zahariadis (2003).

Broadly, MSF assumes the three streams need to be coupled in order for agenda-setting to occur. Coupling is made possible by the opening of a "policy window." MSF further argues that policy entrepreneurs, or individuals who invest considerable time, energy, and resources to promote policy change, help facilitate coupling by demonstrating a connection between their preferred solution and a problem circulating the problem stream. With this basic introduction of the theory in mind, we now turn our attention to the current state of MSF research.

1.2 MSF Applications across Time

A 2016 meta-review by Jones et al. provides one of the most comprehensive assessments of MSF's development across time to date. The article assessed over 300 peer-reviewed journal articles testing MSF concepts between the years 2000 and 2013. Jones et al. provide a proverbial treasure trove of descriptive statistics measuring everything from the geographic areas studied by MSF researchers to the policy domains investigated in each article, author affiliations to research methodologies, level of governance to key findings regarding specific aspects of the theory (e.g., the problem stream, policy entrepreneurship, policy windows). By highlighting existing gaps within the extant research as well as strategies for ensuring the theory's continued growth and development, this paper has served as a springboard for contemporary MSF research.

Almost ten years have passed since Jones et al.'s (2016) paper was first published, suggesting the need to revisit the state of MSF publications. To this end, the following section provides a much needed update to the 2016 meta-review by examining MSF applications over the course of the following nine years. We specifically focus on what the 2016 meta-review called "descriptors of applications" or data documenting the volume and nature of MSF applications between 2014 and 2022. This section aims to provide, for lack of a better term, a "four thousand foot view" of MSF's growth in the wake of the 2016 meta-review.

To this end, we more or less replicate the data collection strategy used by Jones et al. (2016). We specifically relied on the Web of Science data to develop a comprehensive list of all articles citing MSF between 2014 and 2022. We utilize the same search criteria applied by Jones et al.: (1) citations of Kingdon's *Agendas, Alternatives, and Public Policies*;[1] and (2) citations of the various MSF sections written for the 1999, 2007, 2014, and 2018 versions of *Theories of the Policy Process*.[2] Our analysis only included peer-reviewed journals available in

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[1] Like Jones et al. (2016) we use all variant publication years of *Agendas*, *Alternatives and Public Policies*, most notably 1984, 1995, 1996, 1997, 2002, 2003, 2005, 2006, 2010, and 2011.

[2] Note that the 2018 version of the *Theories of the Policy Process* was not available when "A River Runs through It" was published.

English. This search yielded a total of 3,459 articles, nearly double the number unearthed by the 2016 meta-review.

In order to develop a more manageable corpus of articles, we asked two coders to determine whether each was applying the MSF or if it simply made a passing reference to the theory without actively engaging core concepts. Specifically, in order to be considered an application of the MSF, the author(s) need to explicitly state within their abstract that their article applies/tests/ examines MSF. Articles that failed to do this were excluded from our study. This initial review allowed us to narrow our list of articles to n=334.

Of these articles, 78% (261 articles) were further classified as empirical applications of the MSF, meaning they sought to apply or at least leverage the theory to explain a case/topical area of interest. The remaining 22% (73 articles) were classified as empirical synthetic, meaning they apply MSF alongside other theories of the policy process. Note that a handful of studies were excluded from our analysis because they did not use any stated methodology, but were purely theory building exercises, thought pieces, or reviews.

Having described our data collection protocol, the following section will explore various indicators of growth and application over the course of the last nine years. Because subsequent sections provide a detailed account of recent conceptual advances, including theoretical extensions, novel methodological approaches, and hypothesis testing and development, this analysis focuses primarily on describing the breadth and scope of MSF applications across time. Unlike Jones et al. (2016), we do not, for example, document how many studies examined the various elements of the problem stream (e.g., indicators, focusing events, feedback) or the number of studies referencing policy windows. These topics are covered in greater detail later in the Element. Instead, we focus our attention on the (1) number of applications published by year; (2) publication outlets and author affiliation; (3) policy domains; (4) geographic focus and type of regime (democracy vs. autocracy); (5) level of governance; and (6) methodology.

1.2.1 MSF Publications per Year

Jones et al. (2016) report a marked uptick in annual MSF publications between 2000 (11 articles) and 2013 (41 articles). Figure 2 suggests this trend has continued over the last nine years, which has seen the number of MSF publication increase from nineteen articles in 2014 to a whopping fifty-nine articles in 2022. The lowest number of publications per year never dipped below eighteen (2015), which is nearly two times higher than the lowest number reported by Jones et al. The highest number of publications (59 articles in 2022) is noticeably larger than the previous high of 45 articles
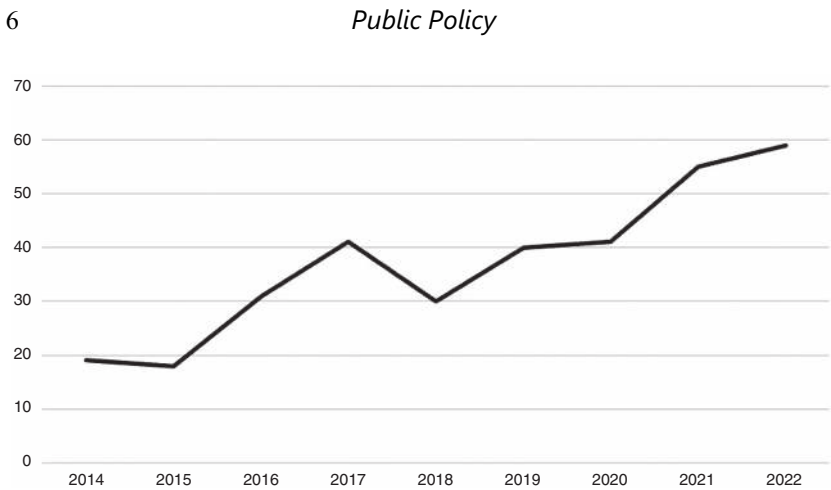
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Figure 2 MSF refereed publications by year.

Years published: 2014 (19), 2015 (18), 2016 (31), 2017 (41), 2018 (30), 2019 (40), 2020 (41), 2021 (55), 2022 (59)

recorded in 2011 (Figure 2). Taken together, this data suggests MSF has grown over the last nine years and remains on an upward trajectory.

1.2.2 Publication Outlets and Author Affiliation

MSF continues to find its way into a fairly diverse array of publication outlets. Whereas Jones et al. (2016) note that MSF appeared in 165 different peer-reviewed journals between 2000 and 2013, our analysis identified MSF applications in 201 different peer-reviewed journals, further proof of the theory's proliferation across time. Not surprisingly, MSF articles continue to be widely published in journals that identify as generalist public administration and public policy outlets (e.g., *Policy Sciences*, *Policy Studies Journal*, *Public Administration*) as well as journals more narrowly focused on specific policy areas like health (*Global Public Health*, *Health Policy and Planning*, *Health Systems & Reform*), energy and the environment (*Energy Policy*, *Environmental Planning C*), education (*Education Policy*, *Education Research for Policy and Practice*), and even sports (*Sport, Education and Society; International Journal of Sport Policy and Politics*). Journals publishing five or more MSF articles include *Journal of Comparative Policy Analysis* (10), *Policy Studies Journal* (9), *Policy Sciences* (9), *International Journal of Sports Policy and Politics* (6), *Health Research Policy and Systems* (6), *Energy Research & Social Science* (6), *Food Policy* (5), *Environmental Politics* (5), and *Energy Policy* (5). Curiously, unlike Jones et al., we find scant evidence of widespread applications in more mainstream political science journals.

Author affiliation information was made available through Web of Science. More authors are affiliated with European institutions than any other region in the world (n=366). The lion's share of these authors is from institutions in the United Kingdom (122) or Germany (61), although the Netherlands (35), Italy (16), Switzerland (14), Belgium (13), Norway (13), Austria (12), France (10), and Spain (10) are also fairly well represented. It is notable that the number of authors affiliated with institutions in the United Kingdom more than doubled and, in the case of Germany, more than tripled since Jones et al.'s (2016) publication. This said, the overwhelming majority of MSF articles were published by authors affiliated with institutions in the United States (197) (Figure 3).

We observe a marked uptick in author affiliations outside of North America and Europe. For example, the number of authors affiliated with institutions located in Asia increased from 20 individuals at the time of Jones et al.'s study to 116 individuals in our study. The number of authors affiliated with institutions located in Africa jumped from nine individuals to fifty-four individuals. Similarly, the number of authors affiliated within institutions located in Oceania increased from twenty-one to seventy-eight individuals. Perhaps most impressive, whereas Jones et al. (2016) do not report a single MSF publication by authors affiliated with South American institutions, we find more than forty articles including at least one author affiliated with institutions located in South America (Figure 3). Taken together, this data suggests the theory has made significant gains in attracting engagement from scholars across the globe.[3]

1.2.3 Policy Domain

Consistent with Jones et al. (2016), we coded for a total of twenty-two discreet policy domain categories: Health, Environment, Governance, Education, Welfare, Agriculture, Arts, Defense, Diversity, Economics, Emergency Services, Energy, Firearms, Foreign Relations, Justice, Labor, Nonprofit, Planning/Development, Real Estate, Religion, Technology, and Transportation. Three articles were coded as "not applicable" because they either failed to specify a domain or focused on a topical area that is not represented by our existing codebook (e.g., women's studies).

Like Jones et al. (2016), we find that health, 27% (e.g., Bandelow et al. 2017); governance, 25% (e.g., Engl and Evrard 2020); and the environment, 13% (e.g., Conceição et al. 2015) are by far the most popular domains explored by MSF studies. We find that education, 6% (e.g., Cummings Strunk, and De Voto. 2023);

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[3] Recall too that our study, like Jones et al. (2016), only considers peer-review articles written in English. These numbers would likely be much higher had we included articles written in other languages.
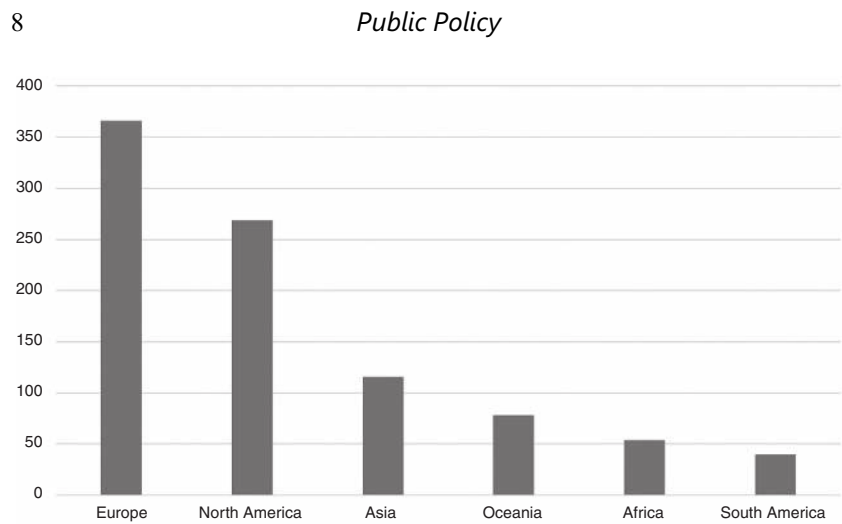
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Figure 3 Institutional affiliation of authors by region

Institutional affiliation of author by region. A number of authors had multiple affiliations. **Europe:** United Kingdom **(122),** Germany **(61),** Netherlands **(35),** Italy **(16),** Switzerland **(14),** Belgium **(13),** Norway **(13),** Austria **(12),** France **(10),** Spain **(10),** Denmark **(9),** Ireland **(9),** Finland **(8),** Portugal **(8),** Czech Republic **(7),** Russia **(5),** Sweden **(5),** Hungary **(4),** Croatia **(2),** Luxembourg **(2),** Romania **(1); North America:** United States (**197),** Canada **(68),** Mexico **(4); Asia:** Iran (**31**), Japan (**18**), Malaysia **(9),** South Korea **(7),** Lebanon **(6),** Singapore **(6),** India **(5),** Taiwan **(5),** Kuwait **(3),** Turkey **(3),** Israel **(2),** Vietnam **(2),** Indonesia **(1),** Philippines **(1),** Saudi Arabia **(1); Oceania:** Australia **(73),** New Zealand (5); **Africa:** South Africa (18); Ghana (7); Guinea (7); Cameroon (6), Uganda (5), Burkina Faso (2), Chad (2), Namibia (2), Zambia (2), Zimbabwe (2), Egypt **(1); South America:** Brazil (25), Barbados (7), Chile (2), Paraguay (2), Argentina (2)

economics, 5% (e.g., Spognardi 2020); and energy, 5% (e.g., Kagan 2019) are also popular domains. The remaining 19% of MSF papers (our "other" category) encompass a fairly eclectic mix of policy areas ranging from agriculture (e.g., Faling and Biesbroek 2019) to emergency services (e.g., Eckersley and Lakoma 2021) (Figure 4).

1.2.4 Geographic Area and Regime Studied

In addition to measuring the institutional affiliation of authors publishing MSF studies, we also collected data on the country or, in a number of cases, countries studied in each article. In total, we identified sixty-six different countries, suggesting significant geographic variation within the MSF literature. Figure 5 reports the results of our analysis, grouping the various countries in the same six regions used by Jones et al. (2016): Europe, North America, Asia, Oceania, South America, and Africa.
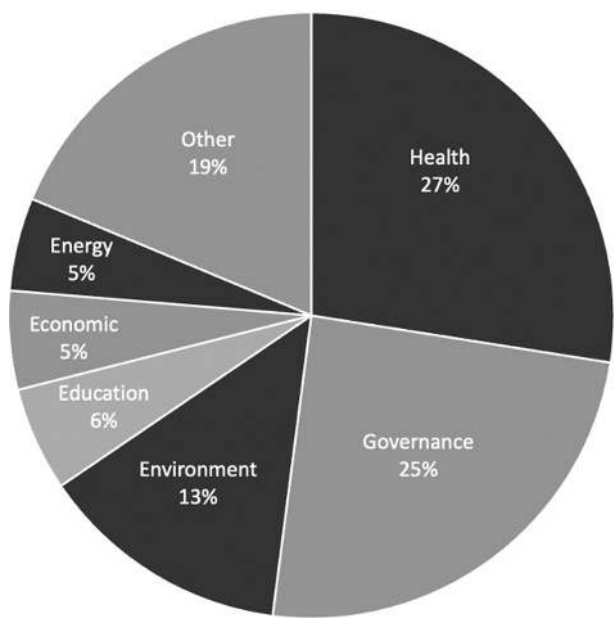
Figure 4 Policy domain foci

Some articles fell into more than one policy domain, but none fell into more than three.
Health (94); **Governance** (84); **Environment** (46); **Education** (19); **Economic** (18).
Energy (17); **Other**: Planning (14); Technology (12); Justice (7); Welfare (6); Labor (4);
Defense (3); Foreign Relations (2); Agriculture (1); Diversity (1); Nonprofit (1)

The overwhelming majority of studied countries are in either Europe (n=120)
(e.g., Kristiansen and Houlihan 2015; Carter and Childs 2017; Derwort, Jager,
and Newig 2021) or North America (n=80) (e.g., Anderson and Maclean 2015;
Carriedo, Lock, and Hawkins 2020; Tunstall et al. 2015), which echoes Jones
et al.'s (2016) findings. The number of MSF articles published on Asian coun-
tries (n=52) (e.g., van den Dool 2023a; Tanaka et al. 2020) remains quite strong.
Unfortunately, applications to South America (n=38) (e.g., Araújo and Dinara
Leslye Macedo e Silva Calazans 2020; Bossert and Dintrans 2020; Ryan and
Micozzi 2021), Oceania (n=27) (e.g., Harris and McCue 2023; Smith and
Cumming 2017; Schührer 2018), and Africa (n=20) (e.g., Ssengooba et al.
2021; Tembo and Lim 2022; Hassanin 2021) are modest in comparison to
other regions, suggesting these regions may provide a fruitful context for testing
the theory. Not reported in Figure 5 are the multitude of studies (n=38) applying
MSF to international and regional governing organizations, such as the European
Union (e.g., Kaunert and Léonard 2019), United Nations (e.g., Jakobsson 2021),
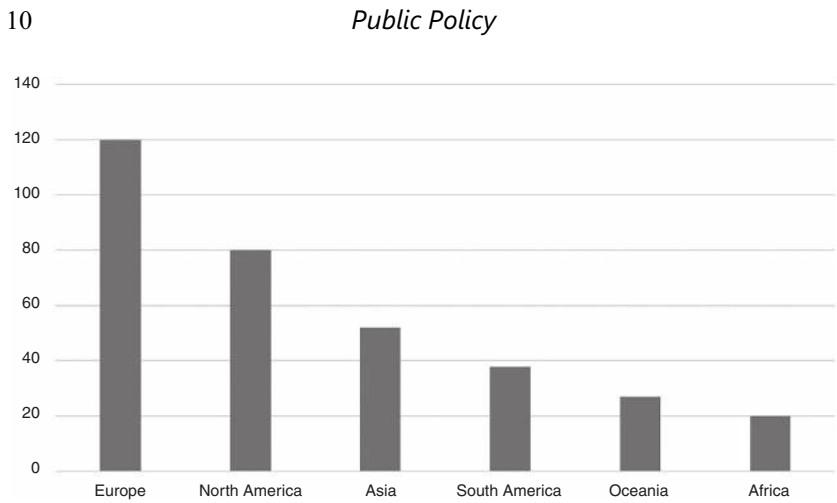and the International Olympic Committee (e.g., Pack and Hedlund 2020).

Figure 5 Geographic area studied.

Location of study by region. A number of articles studied multiple areas. Europe: United Kingdom (42), Germany (11), Ireland (9), France (8), Russia (6), Norway (6), Austria (6), Portugal (4), Italy (4), Sweden (3), Denmark (3), Belgium (2), Croatia (2), Czech Republic (2), Finland (2), Greece (2), Netherlands (2), Spain (2), Switzerland (2), Romania (1), Scotland (1); **North America**: United States (62), Canada (16), Mexico (2); **Asia**: China (10), India (8), Iran (7), Japan (5), Turkey (4), Malaysia (3), South Korea (2), Lebanon (2), Hong Kong (2), Indonesia (1), Kuwait (1), Maldives (1), Mauritius (1), Myanmar (1), the Philippines (1), Singapore (1), Taiwan (1), Vietnam (1); **South America**: Chile (14), Brazil (13), Costa Rica (2), Ecuador (2), Peru (2), Argentina (1), Barbados (1), Belize (1), Paraguay (1), Uruguay (1); **Oceania**: Australia (25), New Zealand (2); **Africa**: Uganda (3), South Africa (3), Egypt (2), Ghana (2), Kenya (2), Cameroon (1), Chad (1), Guinea (1), Namibia (1), Tanzania (1), Tunisia (1), Zambia (1)

Even with these regional imbalances, the geographic diversity of MSF studies, particularly when disaggregated to the country-level, is impressive. MSF studies have been applied to a fairly wide array of countries from Iran (e.g., Moghadam Raeissi, and Jafari-Sirizi 2019) to Tanzania (e.g., Fischer and Strandberg-Larsen 2016) and from Romania (e.g., Wang et al. 2021) to Cameroon (e.g., Sieleunou et al. 2017). The variety of geographic applications suggests MSF remains a theory that travels well and can be used to explain a variety of governing contexts outside of the United States.

To further differentiate between the various countries studied, we assessed each country's Global Freedom Score. Global Freedom Scores rate individuals' access to political rights and civil liberties. This data is available on the Freedom House website.[4] As shown in Figure 6, 59% (thirty-nine of the sixty-six countries) of

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[4] Freedom House scores can be accessed here: https://freedomhouse.org/countries/freedom-world/scores.