

**Analysis of Antecedents of Trailblazing and
Adoption of Public Policy Innovation
Identified by a Systematic Literature
Review - II**

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ABSTRACT

The paper organizes and summarizes the conditions (antecedents) researchers and practitioners identified as occurring prior to trailblazing and adoption of public policy (including program) innovation, as identified in a systematic literature review. The review identified 87 relevant documents and 594 antecedents. Trailblazing of innovation is Rogers' (1995) first two stages of adoption—innovation (invention) and early adoption (identified here as second and third adoptions in a government's community or population). The antecedents are analyzed into grouped antecedents, factors and clusters. The most-mentioned grouped antecedents were citizen pressure, process, structure and political culture. The most-mentioned factors were innovation drivers, people, policy/process, and context. The factors were organized into clusters—external, political and internal. Based on number of mentions the literature considered the internal cluster the most important. The most-mentioned factors in external cluster were context and people; in political cluster, drivers, political context and political actors; in internal cluster, innovation process, drivers, people and internal environment. Multiples more antecedents were identified for internal cluster than the others. Lack of consistent definitions and the mixing of stages and levels in the literature has hampered understanding of antecedents and placed limitations on this study. The literature sometimes distinguished external and internal cluster; the current analysis also considers a political cluster, which is especially important to trailblazing of public policy innovations.

Key words: Public policy innovation, innovation antecedents, innovation variables, innovation stage

Introduction

Many governments are trying to be more innovative; some are using management direction, others structures like science and technology units and innovation laboratories. This paper summarizes the literature that identifies the antecedents existing prior to trailblazing of public policy innovations. Many of the papers present proven, research-backed antecedents of innovation. These can help citizens, elected officials, managers and working-level government and non-government employees to understand conditions that produce public policy innovation.

A systematic literature review (Glor, 2021) was conducted of antecedents of trailblazing of policy (including program) innovation, guided by the PRISMA protocol and checklist for systematic literature reviews and meta-analyses of health care research (Moher et al, 2009; Liberati et al, 2009).

Trailblazing of innovation is the first two stages—innovation (invention) and early adoption—of Rogers' (1995: 263-266) five-stage classification of innovation adoption, which also include early majority, late majority and laggards. Innovation is the first adoption; early adoption is defined here as the second and third adoptions in innovations' or governments' communities/populations (defined later). The paper contributes by reviewing the literature on antecedents, analyzing and grouping the data collected in the systematic literature review on antecedents of trailblazing of public (used interchangeably with public sector) policy innovation.

Some antecedents exert their influence throughout the innovation process, consisting of readiness, negotiating approval, effective implementation, a focus on results, fate and dissemination. Rogers' first two stages are considered trailblazing, the last three stages dissemination in their populations. Only antecedents of trailblazing are considered here. The paper takes a largely functionalist approach (Burrell and Morgan, 1979; Pollitt (2002: 481-2), exploring issues and factors thought to influence trailblazing of public policy innovation.

The literature. All 87 articles, books, chapters and reports ("items") cannot be reviewed here—some are highlighted. Mohr (1969) found innovation is a function of an interaction among the motivation to innovate, the strength of obstacles against innovation, and the availability of resources for overcoming such obstacles. While Mohr felt these conclusions were largely valid for organizations generally, thus revealing a focus on issues internal to the organization, his data was secured only from public health departments (all full-time local health departments in Illinois, Michigan, New York, Ohio [USA] and Ontario [Canada]).

Collier and Messick (1975) studied first introductions of income security innovations in the 59 formally autonomous countries existing at the time of the study. They identified order of introduction of five income security programs, usually based on need, replacing income lost due to: (1) injury related to employment; (2) sickness and maternity; (3) old age; (4) unemployment; and (5) raising children. Finding two types of antecedents, hierarchical and spatial, they considered whether these were necessary/necessary and sufficient prerequisites for introduction within nations, measuring hierarchical antecedents by modernization (income per capita, per cent of population engaged in agriculture and industry) and spatial antecedents by region. They found three patterns, early, middle and late adopters: 1) 1883-91, earliest adoption, in central Europe starting in Germany with sickness and maternity (health) insurance in 1883, work injury in 1884 and an old age pension in 1889¹ (correlating highly with middling agricultural work force) and 1892-1900, in Western Europe and Scandinavia (including the UK in 1897), which were even more modern. No adoptions occurred 1901-08. (2) 1908-22, less developed European countries, former British colonies (e.g., Canada), and more developed South American countries, with low and high levels of modernization. 3) 1923-60, countries with a high percentage of population in agriculture combined with regional and hierarchical influences, including USA (an exception, with high modernization measures). They explained the USA anomaly by impact of liberal ideology, which stresses self-reliance for the poor. Collier and Messick did not address issues in highly decentralized federations, e.g., Canada, where responsibility for most social security programs is provincial or a joint federal-provincial responsibility.

Glor (1997) identified 126 policy innovations introduced by the Government of Saskatchewan (GoS), 1971-82: 115 were first, 9 second, 2 third in the USA and Canada, the GoS's population. Numerous preventive health and educational pilot projects were also

introduced. Antecedents included external support, economy, ideology, political vision, politics, willingness to take risks (Premier, Cabinet, some senior staff), resources, effects and people.

Chapman (2002: 13) indicated the most important obstacles to learning in the public sector are aversion to failure, pressure for uniformity in public services, shared assumptions between public servants and ministers, lack of evaluation and time, a tradition of secrecy, dominance of turf wars and negotiations between departments, loss of professional integrity and autonomy under the knife of efficiency, and resistance and protection of vested interests by some professional and intermediary bodies. These barriers concern mentalities, tradition and power, obstructed learning feedback and influence of non-profit organizations.

Politics and resources have been identified as key antecedents of innovation (Baum, 1996; Singh, Tucker, House, 1986; Camison-Zornoza et al., 2004) but have received limited exploration. Doughty and Beresford and Croft make this situation more understandable. Doughty (2019: 2) emphasized the need to address politics:

Innovation must always be understood in context, and the context must always include an element of politics—broadly understood as the relations of power and authority in whatever organization (public, private, not-for-profit) chooses to introduce innovation. The context of innovation, moreover, must include a framework of political thought. Innovation is not just method; it is also purpose. It is intended to influence social relations. That context of purpose is what separates the Boy Scouts from the Hitler Youth... All were “innovations,” but they cannot be seriously discussed without reference to their content, purpose, and underlying assumptions about how and to what ends societies work... While it is true that public sector innovation is the translation of an idea or invention into a good or service that fulfills a real or apparent social need or aspiration for which citizens will vote, there is a distinctly political as opposed to a narrowly economic aspect to innovation. It must be judged in terms of a measure of benefit that is larger than mere private desires.

Doughty also suggested that the language and definitions of innovation are often entirely without content or context, meaningless and therefore useless. In whose interests are innovations to be made? What criteria determine the nature of the benefits? Are the innovations intended to refine, reform or revolutionize current practices? What existing arrangements will be disrupted? Who bears the cost? A rationale for change must be presented. That rationale, whether its formulators know it or not, will come with baggage, a history, a political agenda, and competing advocates and detractors (p. 3).

Beresford and Croft (2008) addressed these issues by identifying the ideological and political context of social work. The social policy context for social work and user participation was the same as for other policy innovations examined in the literature. They noted that in UK:

There have been some discussions of the socio-economics, politics and ideology of participation, but these have been limited in number and range. In contrast a much greater interest has developed in the ‘technicalities’ of participation, reflected in the production of a large and rapidly growing body of ‘how to do it’ manuals, courses and

consultants. The emphasis is on techniques for and the findings from participation.... Preoccupation with technicist approaches to policy and practice was first encouraged by the political New Right in public policy, particularly health and welfare policy, as it sought to discredit the value base of public provision and to challenge the power, competence, values and discretion of professionalized workers. In Britain it tried to reduce their roles to bureaucratized “competencies” and procedures subordinated to financial and state control. But can participation be encouraged, evaluated or even understood simply by reference to the techniques that are used in attempting to undertake it? ... This seems unlikely, given the inherently political and ideological nature of participation. Instead the empirical emphasis may better be understood as a flight to safety—a search for a safe option which helps divorce participation from its dangerous relations with power and ideology (pp. 3-4).

Bekkers, Edelenbos and Steijn (2011) emphasized networking and an integrated approach to development and implementation of public sector innovation, especially networking and inclusion of politicians.

Several international public innovation research initiatives were undertaken in Europe. *Publin*,ⁱⁱ 1998 to 2002, studied eleven cases of innovation in nine European counties. By 2005, its scholars had developed definitions and policy strategies to encourage innovation, defining innovation as “deliberate changes in behaviour with a specific objective in mind. Innovation is often problem solving” (Vigoda-Gadot, Shoham, Ruvio and Schwabsky, 2005: 1). Vigoda-Gadot et al identified important antecedent barriers as heritage and legacy, public resistance to change, need for consultation, professional resistance, size and complexity, pace and scale of change (innovation fatigue), absence of resources, risk aversion, absence of capacity for organizational learning, technical barriers and unclear outcomes (pp. 2-3). Important drivers and facilitators for innovation were problem-orientation, non-problem orientation to improve, political push, a culture of review, support mechanisms (policy measures to fund and encourage innovation), capacity for innovation (people with high levels of professional expertise, creativity and problem solving), technological factors, and adoption of models from the private and non-government sectors. To support innovation, they encouraged internal change: widening of attitudes, belief systems and entrepreneurship among the people involved; policy learning; dealing with risk aversion by developing participatory processes, demonstrating utility and accepting risk; setting reasonable objectives; adopting new policy instruments; learning; and developing indicators of innovation (pp. 2-3). Also as part of *Publin*, Cunningham (2005: 33) identified internal barriers in the health sector as large size and complexity, with multiple-tiered, interlinked systems; localized skill shortages and gaps; lack of agreement about problems, approaches and solutions; communication and cooperation problems, even silos; and entrenched practices and procedures (pp. 32-33). Koch and Hauknes (2005) and Koch, Cunningham, Schwabsky and Hauknes (2006) highlighted barriers such as risk aversion. They identified mostly the same barriers as Vigoda-Gadot et al (2005), adding very high public/political profile and accountability and a need for consultation with unclear outcomes. They identified drivers and facilitators such as political push, problems, non-problem-oriented improvement, a culture review and support mechanisms (resources, capacity for innovation, competition, technology), large size and complexity (large size also supports administrative innovations [Gow, 1994; Glor, 1998a]).

The *NESTA* project (UK), 2008-9 commissioned six exploratory studies to develop a new Innovation Index. The London School of Economics Public Policy Group (LSEPPG) did a survey of studies and developed one, using published quantitative and qualitative data and results of its pilot survey, using telephone interviews. Interviews limited interviewees' access to organizational data. Glor's (2017a, b; 2018, 2019) questionnaire had the same problem, compounded by the passing of decades.

MEPIN, a joint 2008 to 2011 Nordic project to develop a common statistical approach for measuring innovation in the public sector in Nordic countries (Bloch, 2011) followed *Publin*. The organizers continue to develop a Copenhagen Manual for Europe, a set of guidelines for doing an Innovation Barometer, a national survey on public sector innovation, utilizing a common approach (<https://www.innovationbarometer.org/cphmanual/>). Bloch and Bugge (2013) studied drivers in the five countries and found key factors were political mandating (60%) and internal actors (management 80%, internal staff 70%). Barriers to innovation were lack of funding, inadequate time and lack of internal incentives. Risk aversion was not important.ⁱⁱⁱ

As part of preliminary work to develop public sector indicators, an *Innobarometer* survey was conducted in 500 public organizations in public administration, higher education, local authorities and hospitals in 27 European countries in 2010, to develop the European Public Sector Innovation Scoreboard (EPSIS), based on the Innovation Union Scoreboard used in business enterprises. Two thirds of organizations had introduced a new or significantly improved service in the previous three years (Kattel et al, 2014, including a measurements literature review). While introduction of new programs is policy, most service innovations are processual and are considered process innovations.

LIPSE, 2011-14, led by Victor Bekkers during the mid-2010s, followed *MEPIN*. It developed a framework for public sector innovation and studied innovation in nine European countries, through two surveys and interviews. As well as analyzing their new data, the *LIPSE* scholars did literature reviews and systematic literature reviews (see later).

Surveys of public servants were conducted in other countries, including Australia^{iv} (Arundel and Huber, 2013); USA (Aragon et al, 2017); Canada (Gow, 2006); other projects in, e.g., Malaysia (Agus, 2007) and Korea (Kattel et al, 2014): 28).

Some authors found innovation required specific skills. Mulgan (2007) highlighted how difficult it is for public organizations to innovate, given their size and lack of flexibility, and how open innovation in the public sector may be even harder to achieve than closed innovation. Open innovation requires an organization to open up its business model to let more external ideas and technologies flow in from the outside and let more internal knowledge flow to the outside (p. 5). It has both benefits and risks and is subject to trial and error. Mulgan suggested innovation is more likely to happen in the public sector if people, their ideas, skills and competences are taken into account. He indicated: "In organizations, innovation involves the collaboration of people and teams with different knowledge, experience and expertise (human and psychological capital) innovation is not realized by a single skilled worker, but can only be pursued in collaboration". Innovation seems to be the outcome of three social activities—social inputs, social evolution and social execution (p. 3). Organizations need to learn which partnerships are most effective to foster the innovation process.

Leadership is needed to manage and promote an innovation and a wider network is needed but only if the organization has the absorptive, inventive and transformative capacity to manage the knowledge coming from external sources. This is difficult to achieve. Warah (2002) indicated: “All leadership models propose ways in which power within an organization should be used by various individuals and groups” (p. 2). She identified three leadership models: command and control; transactional, where leaders demonstrate their competence and loyalty to a group in exchange for the employees’ compliance to organizational goals; and transformational leadership, which generates new commitments. A transformational leader uses influence to build with others and help them be their best. Followers, linked by commitment rather than compliance, go beyond what is expected of them; breakthrough results can be achieved (p. 3). Macro socio-political dimensions in the Western world have set the stage for the emergence of the democratic organization but this requires bridging the gap between professed and practiced leadership models in organizations. A missing ingredient and needed action must take place first within the psychological sphere, in the way we define the ego, not within the field of policy development. Warah suggested an ego revolution is required to introduce transformational leadership that permits empowerment in the workplace, democratic and innovative organizations. Mulgan (2007) saw an innovative public sector as having six elements: leadership and culture, pulls and pushes, creativity and recombination, prototypes and pilots, scaling and diffusion and sophisticated risk management. Sanga (2006) identified the need to develop competences in the transportation sector and Boukamel, Emery and Gieske (2019) identified the need for and developed an integrated framework for innovation capacity.

Laegrid, Roness and Verhoest (2011: 1339) explored innovative culture and activity by studying 121 Norwegian and Flemish state agencies. They recommended scholars apply composite and compound explanatory factors and develop multi-dimensional models. Torugsa and Arundel (2016) examined innovation antecedents associated with complexity and how complexity affected innovation outcomes in the most significant innovation in work groups of 4,369 Australian government employees. Complex innovation—incorporating more than one type of innovation—correlated positively with a variety of beneficial outcomes. Saskatchewan income security innovations were also complex, introducing a new principle for five new income security programs, five new organizations, serving five new target groups and benefitting both those in need and employers (Glor, 2002).

Innovation Initiatives. A number of public and non-government organizations have established innovation laboratories to support innovation. Carstensen and Bason (2012: 5) distinguished citizen and organizational antecedents. Citizen factors were (1) personal characteristics of citizens determining their willingness to participate (intrinsic values e.g., loyalty; civic duty, wish to improve government; personal traits, e.g., post-secondary education, family composition); (2) customer awareness: sense of ownership (being responsible), perceived ability to participate; (3) social capital energized; (4) trust/risk aversion by customer/patient/citizen. Organizational factors were attitude of public officials and politicians to citizen participation; compatibility of public organizations with co-creation/co-production; risk-averse, conservative administrative culture; and clear incentives (e.g., seeing that incorporating citizens improves public services, creates budgetary benefits, increases customer interest). The factors were interrelated (p. 1343). During the 1990s, government administrative innovation initiatives were led by Al Gore in the USA and the Canadian Quality and Innovation unit, Treasury Board of Canada. The latter was abolished as part of a downsizing exercise. American innovations have

been tracked through innovation awards by Borins (2014), Canadian innovations by Glor (1998a) and Bernier, Hafsi and Deschamps (2015). The current Canadian Privy Council Office innovation lab is encouraging policy innovation.

Literature reviews. The LIPSE scholars did a literature review of antecedents of social innovation and three systematic literature reviews. The public sector *literature review* (Bekkers, Tummers and Voorberg, 2013), using a snowball methodology identified literature from references in other literature in major journals. Stages of adoption (dissemination) were not distinguished, so the review included both introduction and diffusion. The authors considered literature on *successful social innovation* published January 1995 to August 2016 and analyzed their findings into a group of factors influencing social innovation: the innovation environment, the process and whether the innovation diffused. Bekkers, Tummers, Stuijzand and Voorberg (2013) studied the same three drivers and barriers of social innovation. They emphasized the barrier of strong legal culture and the driver of leadership linking stakeholders and risk management strategies. Other projects have also examined drivers and barriers (e.g., Glor, 1997: 4-8; 2002: 139-171; 1998b). The LIPSE scholars did a systematic literature review of one (some said two) social innovations—co-creation and co-production—as reflected in 122 papers published 1987 to 2013, most of them case studies (Voorberg, Bekkers and Tummers, 2015) but they did not discuss antecedents. reviewing 181 articles and books published 1990 to 2014 including but not exclusively on antecedents, de Vries, Bekkers and Tummers (2016) conducted a systematic literature review of *empirical public sector innovation literature* including introduction and diffusion, policy and administrative innovation. The antecedents were external environmental antecedents, resources and actors and intra-organizational antecedents, resources and actors. The authors indicated that “antecedents that need to be further explored in public innovation research include both the environmental and the organizational contexts in which innovations take place, their nature, and also the enabling antecedents and their underlying contingencies” (p. 147). This paper compiles and analyzes those issues. Compared to the research of the LIPSE scholars, the current paper considers a larger range of sources, a larger time range and three sub-sets of their research: policy innovation (not administration), two of five stages of innovation (invention, early adoptions) and only antecedents.

The systematic literature review considers what many scholars and some practitioners regard as antecedents of introduction of public policy innovation. The data reflects what kinds of antecedents the literature identifies. The remainder of this paper explains the methodology, identifies the results, discusses them and draws conclusions.

Methodology

This section describes the study, defines more terms, identifies the research question and describes the systematic literature review.

The Study. The systematic literature review of antecedents of introduction of public policy innovation identified antecedents from 86 documents, finding 556 antecedents, including

five duplicates (ones that appeared in two grouped antecedents). They are analyzed into grouped antecedents, factors and clusters and examined. This paper explores independent antecedents, grouped antecedents, factors and clusters thought to influence the dependent variable of public policy innovation trailblazing. Some authors such as historical institutionalists (e.g., Hacker, 1998) have suggested that study of variables is not the best way to study policies. They objected that measures of variables are one-shot, and that issues influencing policy should instead be examined over time. Hacker suggested variables miss the history of issues and organizations influencing policy. Despite the need to study the history of issues, because trailblazing occurs at one point in time and is affected by the antecedent variables, antecedents are also of interest. Historical factors leading to trailblazing have been included in some studies of antecedents. Glor (2017a, b), e.g., dealt with this issue in her instrument measuring antecedents of public innovation by taking two snapshots, one at the time of trailblazing and the other at the time of fate, to see if the measurements of the antecedents changed. The instrument addressed some issues that changed over time, such as political environment and resources. In addition, the text discussed historical issues. Time need not be lost when studying antecedents but can be addressed as a variable. This paper summarizes antecedents of trailblazing of public policy innovations in the literature. Like Rogers' (1995) work, much public innovation research is about dissemination, which tends toward isomorphism, especially the New Public Management (NPM) beginning in the 1990s.

The first, second and third time an innovation is adopted in a government community (community of practice) or population is treated as trailblazing (definitions later). This places the focus on newness of adoptions. Trailblazing of public policy innovations was more common prior to 1979, and especially prior to 1973, when government revenues were growing, rather than after the first (1973-4) and second (1978-9) oil shocks, when growth ended in real terms in most governments. The second shock was preceded by inflation and followed by recession and election of right-wing governments in New Zealand, United Kingdom, United States and Canada; the focus of government became spending restraint rather than meeting new needs. Income security programs were cut back. Although there have been some new policy innovations since then, their emphasis has been saving money. In Canada, e.g., beginning in the late 1980s, the universal federal family allowance was replaced by a series of short-term income-tested child subsidies. The environment prior to the 1970s was thus different from the current one, in two ways: more resources were available to governments with growing incomes in a growing economy and the political environment was accepting of government intervention in the social environment, including income security programs.

Some early policy innovation studies focused on which governments introduced policy innovations early (e.g., Poel, 1976; Glor, 1997) but others (e.g., Mohr, 1969) and more recent studies (e.g., Colvin, 2006) have focused on dissemination of policy (but have sometimes identified the trailblazers) and especially process innovations (e.g., Walker, 2013). Many did not reference the order adopted. The current study cast a wide net by including not only studies on trailblazing of policy innovation, of which there are a limited number, but also on studies that did not specify a stage of policy adoption and therefore presumably only included some trailblazing.

Definitions. A *systematic literature review* is “a review of a clearly formulated question that uses systematic and explicit methods to identify, select and critically appraise relevant

research, and to collect and analyze data from the studies that are included in the review. Statistical methods (meta-analysis) may or may not be used to analyze and summarize the results of the studies. *Meta-analysis* refers to the use of statistical techniques in a systematic review to integrate the results of included studies” (Moher et al, 2009: 1). Some authors do not, however, require that statistical techniques to be used to define the study as a meta-analysis (e.g., Wikipedia, 2020). Moher et al found that the “quality of reporting of systematic reviews is still not optimal” (p. 3). The current systematic literature review considers both qualitative and quantitative literature and the conclusions of both scholars and practitioners.

The *public sector* is the government sector (the bureaucracy), including government-owned corporations. *Public policy innovation* is policy and program innovation. *Public sector innovation* includes policy and public administration innovation and is used interchangeably with *public innovation*.

Innovation. Much of the literature on public innovation does not define innovation, as pointed out by Osborne (1998) for service innovations; Bekkers, Tummers, Stuijzand and Voorberg (2013) and Glor (2015: 28-9). In this article, *innovations* are policies new (first three) to a government and its community/population. A government *population* is a group of related governments, such as all USA state governments or all progressive/conservative governments. An innovation’s population is all governments and their organizations that have introduced or could introduce similar innovations. “Similar” relates to objectives, concerns and approaches. A *community* is the group of governments or people to which the government or people compare themselves and/or with which it works with regard to the issue under consideration. For the Government of Saskatchewan that introduced five new income security programs and organizations, 1970-82, e.g., its community was the Government of Canada (GoC), progressive Canadian provincial and American federal and state governments. Policy innovation communities can be political or electoral supporters, other elected and appointed officials and the public (Binnema, Michels and ‘t Hart, 2020). *Organizations* are administrative units delivering policies/programs/ administrative processes. Organizations exist at many levels; e.g., some studies treat departments or agencies (the level below a minister) as organizations (e.g., deLeon, 1978; Kaufman, 1976); others treat the smallest organization discernable as an organization, others define it as any unit that has a budget (Glor, 2015).

Trailblazing of innovation is adoption the first, second and third time in a government’s population or community. Rogers’ other three stages are considered diffusion/dissemination. Trailblazing and diffusion together address all the stages as adoption. Osborne (1998) also emphasized newness, but of the service to recipients: “total innovation” is innovations new to the innovating organization and offering a new service to a new group. A new service is a policy innovation but new approaches to service are process innovations. Many authors define innovation as new to the organization adopting it: here this is diffusion of innovations, except the first three times in a population; e.g., the five Saskatchewan income security innovations were trailblazing but met Osborne’s definition. Ranking of adoption was also considered by other authors, sometimes in dissemination of policy studies (e.g., Mohr, 1969; Gray, 1973; Berry and Berry, 1990). Berry and Berry (2013) suggested definitions focused on the first few adopters were used more before 1990 and that the focus has been primarily on “dissemination” since then. I agree. Berry and Berry did not discuss the reasons for less trailblazing studies but there may actually have been less trailblazing of public policy innovations since then—hence, there is less

to study. This was the period when neoliberalism^v and New Public Management (NPM) were widely adopted, international agencies were encouraging their adoption, and budget constraint took hold. Within government, the term innovation often took on a more political role, was used to reinforce political directives and as a proxy for NPM. Focussed on saving money, this pressured public servants to reduce and eliminate programs and adopt NPM, as opposed to suggesting trailblazing of policy innovations, for which there were few or no resources and little appetite. Defining anything newly-introduced into an organization as innovation confused the original meaning of innovation and shifted the focus of action and research to diffusion. Authors now rarely identify the trailblazers in their dissemination studies. This is easier to do, as it only requires respondents to identify whether they have/have not adopted an innovation. While those who study adoption are making an important contribution, there is still much to learn about innovation by distinguishing trailblazing and diffusion.

An *antecedent* is a phenomenon occurring before an innovation is introduced, that might influence whether it is introduced. Antecedents of trailblazing and adoption are thought to influence the approval and implementation invention, early adoption or later adoption of an innovation. Antecedents are the *variables* being studied in this paper. The term antecedent is used synonymously with variable/determinant/moderator/influence. *Groupings* of antecedents were necessary because so many antecedents were identified and so many different terminologies were used in the literature.

Factors are groupings of groups of antecedents on related themes. Authors distinguish, e.g., groupings of antecedents like push/demands/drivers from obstacles, but they are grouped as the factor drivers. Factors are more general than groupings of antecedents. Factors influencing introduction of public policy innovation have been studied somewhat (as antecedents, complexity of policies, organizational demographics, ecology) but limited research has been published that explicitly examines factors and clusters, with the exception of Glor (2018, 2019). Organizing groups of antecedents into factors and the even more general clusters of factors (Glor, 2019) has created the potential to make groupings comparable.

Clusters are groups of factors and there are only a few of them. Glor (2019) identified two factors and two clusters that predicted approval and general fate of ten income security innovations and their organizations: Internal cluster (resources, effects) plus economy factor predicted introduction of income security innovations while political cluster (ideology, politics) plus external support factor predicted their fate. De Vries, Bekkers and Tummers (2016) identified four clusters (levels) that influenced the innovation process: environmental, organizational, innovation characteristics and individual. Several authors distinguished external and internal clusters but they were not consistent with each other in how they defined external and internal. Bekkers, Tummers, Stuijzand and Voorberg (2013), e.g., defined internal as internal to the bureaucracy and assigned political factors to the external cluster. Berry and Berry (1990), however, defined internal as internal to the jurisdiction—the American geopolitical state—and assigned the political to the internal cluster. Political cluster is distinguished here from the external and internal clusters. This will allow other researchers to assign them to either of their clusters but, more importantly, they are separated because the political plays an important role in policy innovation introduction. If the political cluster were integrated with either the external or internal cluster, it should be integrated with the external cluster because here the internal cluster is considered internal to the bureaucracy.

Although the articles reviewed do not usually define what an *institution* is, this article treats them as organized rules, traditions and usages. They are the forms of procedure which are recognized and accepted by society. Huntington (1968: 9) defined them as "stable, valued, recurring patterns of behavior".

The systematic literature review (SLR). A protocol and checklist for systematic literature reviews and meta-analyses in the health care field, where they are more vigorous and developed than in the public policy field, was applied. The older QUOROM (Moher et al, 1994, 1999) and more recent PRISMA statements provided a checklist for systematic literature reviews and meta-analyses (Moher et al, 2009: Table 1; PLoS Medicine Editors, 2011). There is limited literature explicitly on antecedents of trailblazing of public innovation, beyond that by Glor.

The SLR involved two phases, the first using a snowball methodology, where literature was found from references in other literature and a second phase reviewing specific journals and databases. Articles, books, chapters, reports. During the Phase 1 snowball method, 62 documents on public sector innovation were rejected because they were not about introduction of public sector innovation; phase 2 searched JSTOR, ResearchGate, Google Scholar, Microsoft Academic, ICIImago's 10 highest ranked public administration journals, *Canadian Public Policy* and *Canadian Public Administration*. During phase 2, 6 documents originally accepted were rejected and 10 more documents were reviewed, of which 7 were rejected and 3 accepted. During phase 3, 2 more papers were reviewed and accepted. More details about the systematic literature review are available in Glor (2021), including a flow diagram.

Most authors writing about public policy innovation do not indicate that they are studying any one stage of innovation, and therefore are assumed to be studying all five stages (this study found 21 publications on trailblazing and 66 on adoption). A publication was only retained in the review if it met the eligibility criteria, which were (1) public, including state agencies, (2) policy (including programs), (3) trailblazing of innovation, (4) identifies antecedents. It could have been published any year, any place. All but two items (Innovation Network, 1999; Warah, 2002) were written by scholars. All were double blind peer-reviewed.

Literature was eligible if it addressed public policy innovation antecedents and did not specifically indicate it was about the dissemination or fate stages. Both empirical (37) and non-empirical (50) literature was found but little consistency in the definitions used or the topics covered. This is a wide screen and probably included some articles that were only partially about it. These criteria have the strength of assuring that most of the literature that addressed antecedents of trailblazing of innovation was included. Some articles treated innovation as one thing and so merged Rogers' (1995) five adoption stages, dissemination. Items were reviewed from 1965 to June 2020. Sixty-nine papers were rejected and 87 accepted. The independent variable studied was antecedents of trailblazing of public policy innovation.

Authors, year of publication and details of antecedents identified in each study were recorded and summarized in a table database. The literature was not consistent in its terminology for antecedents; I therefore analyzed the 594 recorded antecedents into a hierarchy of antecedents and grouped antecedents (Glor, 2021). The grouped antecedents were then reorganized here into even fewer factors and clusters.

Study size varied: Some were case studies. others were quantitative and studied many innovations or governments. The studies, their definitions and approaches were not standardized and very few were empirical. When they were, different issues were studied, from different perspectives. No standardized approach or protocol was used before in the literature.

Challenges. Few papers distinguished the five stages of adoption (Rogers, 1995), numerous publications did not define innovation or adoption. When trailblazing was addressed separately from diffusion, the literature was included. When trailblazing and diffusion were addressed as one phenomenon, the paper was included. Another challenge was that the literature used the term “antecedent” for more than one logical level; e.g., Bloch & Bugge (2013) identified “lack of funding” as an antecedent while Mohr (1969) identified “strength of obstacles against,” as an antecedent. Because of their different logical levels (levels of generality), they cannot be compared directly. This paper remedies this problem by treating “lack of funding” as an antecedent; barriers/obstacles/pull as a grouped antecedent and obstacles as a factor.

Risks. Because the systematic literature review was inclusive, reporting all the results of the review, it does not risk the bias of having missed a substantial amount of literature. The review had a risk of bias across studies, which affects the cumulative evidence but it cannot be observed at this point. One risk of bias across studies exists because of the differences in study sizes. Some studies were qualitative case studies that studied one or a few cases, others were quantitative and studied one or some or many innovations or governments. Another risk is due to the studies—their definitions and approaches not being standardized and only a few being empirical. When quantitative, most studies considered different issues, from different perspectives and countries, thus producing cumulative but not comparable evidence. The studies may risk individual study bias but there is no way to identify what is excluded.

Research Question. In this paper, the question asked is *What kinds of antecedents of public policy innovation trailblazing does the literature identify?* To answer this question, the antecedents identified earlier are analyzed into grouped antecedents, factors and clusters and distinguished from each other.

Results

This section summarizes the systematic literature review and results; categorizes antecedents; and specifies the most important, defined as those mentioned the most times in the literature. A systematic literature review of 87 documents on or including antecedents of trailblazing of policy innovations revealed which antecedents were identified and whether there was consistency in the antecedents identified in the literature. The number, types and levels of antecedents were analyzed: 594 antecedents, 508 unique antecedents. Six of the papers were published prior to the neoliberal turn in government ideology starting in 1979, 81 afterwards.

Table 1: Systematic Literature Review: Grouped Antecedents and Ranked Factors within Clusters by Number and Percentage of Mentions, Policy Innovation Trailblazing and Adoption Literature

Factors	Clusters			Total # mentions, %
	External No. & % of Antecedents	Political No. & % of Antecedents	Internal No. & % of Antecedents	
Context	Governance environment/context-32 External environment/context-25 Institutions-17 Influence of other governments-6 Factor external context T=80, 56.3%	Political culture-28 (The) Political-6 Factor political context T=34, 28.6%	Organizational culture/climate-25 Internal only-3 Factor internal context T=28, 9.2%	142 23.9%
Drivers	Demands/push/drivers//external support/good economy-13 Factor drivers T=13, 7.9%	Politics-24 Ideology-17 Political Support-10 Drivers/demands-6 Factor political drivers/demands T=57, 47.9%	Problem, creativity, ideas-50 Demand/drivers/push-32 Enhance capacity to innovate-13 Factor drivers T=95, 31.3%	165 27.8%
Obstacles	Barriers/obstacles/pull-11 Factor obstacles T=11, 25.6%	Political barriers/obstacles-3 Factor obstacles T=3, 2.5%	Barriers/pull/obstacles-29 Factor obstacles T=29, 9.5%	43 7.2% 100.0%
Policy/Process	National/state innovation policy-17 Factor policy T=17, 12.9%	Platform inclusive, included in political platform-3 Factor process for bldg. political platform T=3, 2.5%	Innovation Process-70 Structure-42 Factor process T=112, 36.8%	132 22.2%
People	Citizen pressure-50, 29.2% Factor people T=50, 44.6%	Political Actors/People-22 Factor people T=22, 18.5%	Other people-21 People only-16 People/employees/staff/individual characteristics-3 Factor people T=40, 13.2%	112 18.9%
Other	0	0	0	0
Total ant Vertical	171	119	304	594
Across	100.1%	100.0%	100.0%	100.1%
No. Grpd Antec	8	9	11	28

Notes: Horizontal lines separate the factors; T=total; antecedents include 5 duplicates (listed in more than one cluster); some percentages add to more than 100, due to rounding.

The antecedents were grouped into three levels—grouped antecedents (e.g., politics), factors (e.g., political context) and clusters (e.g., political cluster). The political cluster is at the same classificatory level as the external and internal clusters because it sits between the two: it is not entirely external because it controls the internal but it is not internal to the bureaucracy so it is not internal. This organization of antecedents allowed consideration of related antecedents within grouped antecedents, factors and clusters. This produced a hierarchy of 594 antecedents, 508 unique antecedents, 27 grouped antecedents, 5 factors and 3 clusters thought to influence trailblazing of public policy innovation. Studies took different perspectives: some studied whether a policy innovation was adopted (e.g., Poel, 1976), others when it was adopted in relation to other governments (e.g., Mohr, 1969); Glor, 1997), others whether specific innovations had been adopted and how many governments had adopted them (e.g., Gray, 1973).

In the 87 documents reviewed on trailblazing of public policy innovation, the 594 antecedents identified were a mean of 6.8 antecedents/document. Based on total numbers of antecedents mentioned, the internal cluster was the most important (304 antecedents) 51.2% or perhaps the most studied or at least had the most antecedents. External cluster had 171 antecedents (28.8%) and political cluster 119 (19.9%). Document authors thought the grouped antecedent citizen pressure/role (50 antecedents) was most important in external cluster, political culture (28) in political cluster, and innovation process (70) in internal cluster. Table 1 expands on the antecedents and grouped antecedents in each cluster.

Table 2: Grouped Antecedents by Ranked Factors by Clusters Derived from a Systematic Literature Review of Antecedents of Trailblazing of Public Policy Innovation

Factors	Clusters			Factor Total # mentions, % Vert, Hoiz.
	External	Political	Internal	
Context	Governance environment/context-32 External environment/context-25 Institutions-17 Influence of other governments-6 External Context T-80	Political culture-28 (The) Political-6 Political context T-34	Organizational culture/climate-25 Internal only-3 Internal Environment T-28	142 23.9%
Horiz. %	56.3%	23.9%	19.7%	99.9%
Drivers	Drivers/Demands/push-13 Drivers/Demands T-13	Politics-24 Ideology-17 Political support-10 Drivers/demands-6 Drivers/demands T-57	Problem, Creativity, Ideas-50 Demand (push, drivers)-32 Enhance capacity to innovate-13 Drivers/Demands T-95	165 27.8%
Horiz. %	7.9%	34.5%	57.6%	100.0%
Obstacles	Obstacles/Barriers (pull) Obstacles T-11	Political Barriers Political Barriers T-3	Obstacles/Barriers (pull) Obstacles T-29	43 7.2%
Horiz. %	25.6%	7.0%	67.4%	100.0%
Policy/ Process	National/state/innovation policy Policy T-17	Inclusive process for developing platform within political party Process T-3	Innovation process-70 Structure-42 Process T-112	132 22.2%
Horiz. %	12.9%	2.3%	84.8%	100.0%
People	Citizen pressure/role-50 Citizen Role T-50	Political Actors/People People T-22	Other people-21 People only-16 People/Employees/Staff/Individual characteristics-3 People T-40	112 18.9%
Horiz. %	44.6%	19.6%	35.7%	99.9%
No. Antec.*	171	119	304	594
Horiz. %	28.8%	20.0%	51.2%	100.1% 100.0%

Notes: horizontal lines separate factors; T means total; * Indicates there were 5 duplicates in factors.

The most important (most mentioned) *factors* within external cluster were external context (44.7%) and citizen pressure (31.1%); in political cluster, drivers (43.8%) and political context (31.4%); in internal cluster, process (35.6%) and drivers (30.8%). The most important factors, overall were drivers, context and policy-process (Table 2).

The same five factors (of six) were relevant across clusters, although how important varied. Internal cluster factors always had the most antecedents mentioned, compared to the same factor in other clusters. Because of this problem, it was not possible to compare the percentages for the factors across the clusters (Table 2). Drivers in internal cluster, e.g., were 60.1% of the mentions of drivers across clusters; 31.2% in political cluster and only 8.8% in external cluster, for a total of 100 per cent. Within clusters, however, drivers were 30.8% of mentions within internal cluster, 34.3% within political cluster and 8.1% within external cluster (Table 1). While factors not be compared across clusters, they could be compared within.

Context was most important in the external cluster and represented the largest portion of any factor for any cluster. People were most important in external cluster but not as important in political cluster and even less important in internal cluster. Drivers were the most important factor in the political cluster but not in the others. Processes were most important in internal cluster but policy/process was not very important in either external or political cluster: The influence of policy on political cluster was negligible, according to the literature.

Discussion

Firstly, the 594 antecedents may describe the context and influences on trailblazing of policy innovation. Secondly, the large number of antecedents raises the question whether authors considered what other authors identified as antecedents. Thirdly, the large number queries the level at which antecedents should be considered. Fourthly, it raises the question of how many and whether so many antecedents are needed to understand what precedes and influences trailblazing.^{vi} Besides being antecedents, some of the antecedents are also used as measures of organizational effectiveness. Fifthly, it begs for consolidation; such a structure was constructed.

This paper has limitations. There were insufficient numbers of papers exclusively on trailblazing (21) to draw conclusions. The inclusion of antecedents from papers on all stages of innovation (“adoption”) allowed some comparison. Moreover, antecedents were the pure focus of only a few articles: much literature considered antecedents as one among several issues; some only in passing. Many articles mixed levels, using antecedents, grouped antecedents, factors and clusters interchangeably. The factors were evident in all clusters but were more important in some than others. Context was important in both external and political context; drivers in political and internal cluster. Policy-process was only important in internal cluster; people in external cluster. Obstacles were not important in any cluster. That the grouped antecedents could be organized into factors applicable to all clusters permitted consolidation and suggested a framework for a protocol for study of antecedents of public policy innovations (Glor, 2014).

Q: What kinds of antecedents are they? The organization of antecedents into four logical levels allowed for better examination of this question. The more general (higher) levels of factors and clusters, compared to grouped antecedents could be applied to all clusters, the factors were not equally important in all the clusters. Internal antecedents are presented as a more straightforwardly rational process than in other clusters and, possibly, as a more hierarchical process. Policy/process was much more important in internal cluster than in the other clusters; in fact, it was represented as the most important factor (80.9% of mentions of policy/process).

Obstacles were also more important in internal cluster. Many more antecedents were mentioned for internal cluster than the others, so statistics within clusters were more helpful than across clusters.

Antecedents are not an integrated look at the influences on trailblazing of innovation but Bekkers, Edelenbos and Steijn (2011) tried to integrate them in a different context, emphasizing the need to contextualize, calling it the public sector innovation milieu, with specific characteristics and functioning, especially links and networks in internal and external contexts, and the capacity of networks to integrate them. Unlike many authors, they included the political domain. They highlighted the importance of local milieu and milieu's role in development and implementation of innovations. Linking capacity was found to be most affected by management approach, which most heavily determined by the political conditions at initiation (Voets and De Rynck, 2011).

Conclusion

Eighty-seven documents on or including antecedents of trailblazing of policy/program innovation were reviewed from which 508 unique antecedents were identified—five antecedents were mentioned in more than one antecedent. As indicated in Table 1, 171 external, 119 political and 304 internal antecedents were identified. Authors identified many more antecedents for internal cluster than for external and political clusters, suggesting it is either more complex or perhaps more studied. A policy innovation may require modification of the external or the governance environment and development of external and political support—some of the more difficult stages in trailblazing. Once a government has approved a new policy, it is likely to approve a structure and resources for it and public servants have a duty to implement it. While everyone's support and sufficient resources are ideal, public servants do not actively resist implementing government policy that is poorly supported or under-resourced, unless they have legal concerns. Even when innovations are unethical—e.g., enhance inequity/inequality—public servants typically do not resist. The internal factors may overlap with public administration of the innovations or reflect diffusion: If innovations are not new to a government's community or population, it is more acceptable for the public service to play a larger role.

The literature's balance of antecedents, their distribution and emphasis on internal cluster suggested citizens can be engaged and innovations implemented through technocratic and bureaucratic processes. Least attention was paid to values, politics and ideology, the political cluster. This may be due in part to the policy literature's lack of interest in politics. This analysis of antecedents should help move thinking toward construction of a framework of influences on trailblazing of policy innovation.

The focus of antecedents in the literature is “doing,” there is little consideration of consequences of the antecedents; the social is considered generically and without priority, the potential effects of antecedents and innovation are little considered on specific phenomena like inequality. Freedom, technology, how an idea was considered and input to policy from individuals as a replacement for the input of citizens through elections *is* considered. The dissatisfaction of citizens with conventional policy-making is regarded as dissatisfaction with the

process rather than dissatisfaction with the content and consequences of policy. Neoliberal politics have dominated the West since the 1980s. It would appear it has had an effect on study of trailblazing of policy and program innovation as well.

Like so much innovation literature, much of the literature was self-standing consideration rather than an effort to build on existing knowledge, understand its complexities and integrate it. By doing so, it implied that each innovation was unique and had unique antecedents. While this is doubtless partially true, progress in understanding the antecedents of trailblazing of innovation cannot be achieved unless commonalities can be found. The large number of antecedents may also testify to the lack of theory and integration in the innovation field; however, the field may be ready for this now.

How, therefore, could the information presented be interpreted? Why have so many different antecedents been identified? Reasons—neoliberalism and NPM—have been suggested. What does the large numbers of antecedents for certain kinds of clusters, especially internal cluster, mean? Could it mean internal cluster was the easiest to study, most familiar and understood, of most interest to funders/researchers/practitioners, that other phenomena are too complicated or complex, that the audience is assumed to be elected/appointed officials within government, that internal factors are the most controllable and safest to study, that the content of study has been driven by governments? It is inaccurate to assume that antecedents are the same for every innovation but use of different terms in so many cases for what appear to be similar concepts suggests lack of adequate integration.

Individual articles tended to deal with a limited number of factors. Scholars thus portrayed innovative policy as simpler than the totality of the literature presented it. Large numbers of antecedents were identified for two issues of current interest in the literature, innovation capacity and collaboration with users and/or citizens. A similar problem exists in health interventions, those comprising “a number of separate elements which seem essential to the proper functioning of the interventions although the ‘active ingredient’ of the intervention that is effective is difficult to specify” (Shepperd et al, 2009).

Scholarly schools within which examination of policy innovation occurred seemed to have an effect on factors that were of interest; e.g., political scientists were interested in the political cluster and the economy but political scientists showed little interest in public innovations. Moreover, the political right has been seeking to defund political science in the USA and Canada. The new institutionalists and historians were interested in ecology, history, time and institutions. Policy scholars seemed to avoid the term “innovation”, using instead “change”. Public policy scholars identified much the same antecedents as the literature as a whole, with the exception of drivers and obstacles. Sabatier (2007: 3) indicated “the policy process involves an extremely complex set of elements that interact over time”. Policy scholars have spent a considerable amount of effort trying to simplify the policy process. Only a few articles addressed the political aspects of trailblazing (e.g., Doughty, 2019; Beresford and Croft, 2008; Glor and Ewart, 2016). I wonder whether the government in power affects what scholars study (I have been struck by the change in tone of U.S. media (both PBS and Fox News) since President Trump was replaced by President Biden. Could policy scholars be similarly affected by the government in power?

The antecedents identified in this systematic literature review suggest to practitioners that the important external conditions that lead to public policy innovation include a supportive institutional, environmental and governance context; citizen pressure; and innovation policy. The important political conditions include political drivers, the political context, and political actors. The important internal conditions are process, drivers, and people.

Future research, once sufficient papers are available, should repeat the analysis, looking only at papers that were explicitly about antecedents of trailblazing of public policy innovation, to see whether there is enough literature to draw conclusions, what it says, how the findings compare to those in this paper and how the antecedents compare to those in the diffusion of policy innovation literature. Future research on trailblazing of innovation should also identify the quantitative studies that are comparable to each other and if there is enough data to do a meta-analysis. Future research should also explore whether antecedents of diffusion and fate of public policy and public administration innovations are influenced by similar or different groups of antecedents, factors and clusters and whether they take into account the political and ideological premises on which they are based and that influence their effects.

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Endnotes:

ⁱ Other programs were adopted more slowly, even in Germany—unemployment insurance in 1927; family allowances in the German Democratic Republic in 1950 and in the Federal Republic of Germany in 1954.

ⁱⁱ Publin was part of the Programme for research, technological development and demonstration on "Improving the human research potential and the socio-economic knowledge base 1998-2002" under the European Union 5th Framework Programme (Koch et al, 2006).

ⁱⁱⁱ In this paper the authors suggested their data were not yet ready to be quoted but Boch emailed this author(s) in July 2020 that the figures were now final.

^{iv} "Interviews with 37 branch level managers in the Australian Federal Government were conducted to determine how managers understood the concept of innovation and their familiarity with different types of innovations. A follow-on survey found that 91% of branches introduced an innovation in the previous two years. This high rate suggests that many of the innovations could be minor. Extensive cognitive testing found that public sector managers can provide high quality estimates of the amount of person months expended on innovations and on other measures of the significance of an innovation. Using this information, the share of branches that introduced a significant innovation is approximately 60%" (p. 1).

^v Neoliberalism is a modified form of 19th century liberalism favouring free-market capitalism and including social and political issues surrounding it. Neoliberal governments have been strongly driven by ideology and politics, have opposed government in general and in particular income security programs for the poor.

^{vi} Damanpour (1991) analyzed organizational innovation and internal antecedents of innovation, mostly in the private sector—23 quantitative studies of determinants and moderators. He recommended studying type of innovation and stage of adoption, as secondary contingencies (intermediate variables) between primary contingencies and organizational characteristics. Type of organization and scope of innovation were important determinants of innovation. Positive and negative statistically significant associations (0.05) were found between mean correlations of three-paired types for specialization: functional differentiation, professionalism, managerial attitude toward change, and technical knowledge. Camison-Zornoza et al (2004: 350) found types of organization and their size and scope correlated significantly with innovation.