Panel T05 P01 Session 2

Public Management Reforms across the Globe: Results, Challenges and Issues

Title of the paper

Peeping into Career Bureaucrats' mind: What do they make of innovation in public management?

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Abstract

Bureaucracy inherently carries creative inertia for any change-big or small. Weberian bureaucracy is best suited to perform routine work and not to think outside the box. Innovation and bureaucracy are supposedly mutually exclusive. However, innovations do take place in public management and they are successfully diffused too. Paradigms like New Public Management (NPM) and Networked Governance have made it more possible for bureaucracy of a nation to innovate. However, the phenomenon and the environmental factors that give rise to innovation are still under study. Public service innovation is usually attributed to creative thinking and innovativeness of an individual officer who goes against the norm and innovates. This leaves the administration literature without any innovation theory of its own with the focus solely on an individual. This paper explores into the psyche the environmental factors according to a bureaucrat toward policy innovations using Q-sort technique which allows the researchers to peep into a bureaucrat's mind and his understanding of innovation in public services. This allowed the researchers to come up with a typology of potential innovators. There are a few departures from public administration and public innovation theories which provide a significant insight into a career bureaucrat's psychology.

Introduction

Innovation in public management is rarely seen and hence, not studied extensively, albeit its importance for the realm. The phenomenon of innovation has had a long journey-from entrepreneurship to competitive advantage. It's mostly being applied in technology. For-profit businesses have also taken to innovation to achieve efficiency and propel ahead others (Windrum and Koch, 2008). However, public management is not devoid of innovative ideas, some of which are also implemented. In public sector innovation, the key person along with the elected leader is the bureaucrat who acts as the policy designer and implementer (Lynn, 2013). Innovative policy ideas, however, both do not survive for long or do not get replicated and remain an extraordinary process. The evidence is the newly installed awards for innovative bureaucrats around the world.

The question we seek to answer is that are public managers trained and prepared to bring reforms and innovate on the job? Is studying the bureaucrat enough or there is more to innovation? Are the environmental factors not being factored in while researching this phenomenon?

As a process, policy-making has largely demonstrated incrementalism making small steps towards improvement (Lindblom, 1959; Wildavsky, 1964). Public management and public services have rarely seen big changes and reforms in social policies are most often pushed by the leadership. Bureaucratic control in terms of centralization and formalization inhibit innovation and organizational change (Damanpour, 1996). Bureucracy and innovation are in fact, taken to be mutually exclusive (Vigoda-Dagot et al, 2005). With multitudes of changes happening rapidly like, globalization, mass migration, climate change, etc. perhaps it is high time for the public managers to be prepared to innovate more often than not.

Thompson (1965) had lamented that government organizations have low innovative capacities as compared to other organizations. Literature on organizational innovation blames the rigid hierarchical bureaucratic structures for this low capacity to innovate. Private organizations innovate to achieve competitive advantage (Porter, 1985) which is absent from public management. Then what should be the motive and rationale for a bureaucrat to innovate?

The problem is that policy making as an exercise exhibits incrementalism and resists change due to its very nature. Bounded rationality (Weber, 1968) is incumbent in all public departments at all levels. However, incremental policies do go through punctuations of big changes which can be termed as policy innovations (Baumgartner et al, 1993). Innovation, however, is specific to context and subjective in nature. Though, the governments across the world are encouraging innovation in public administration, the need to understand it better still remains, especially from the point of view of the bureaucrats who have to put innovation into practice.

We submit that third world countries or developing nations cannot survive with incrementalism alone. With the increasing burden on resources per capita, social policies are rapidly falling short in such societies. This is even starkly true of India, as it's the largest democracy with extremely wide disparities within the society.

For this, the authors believed that the exploration of what the bureaucrats, the ones who have to carry out the innovations, understand by it. This is explored in this study through the use of Q methodology which peeps into the psychology of a group of people. This methodology is employed to understand what a group of mid-career civil servants undergoing a graduate

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program in public administration make of innovation in government. This would further the research keeping the realities on the ground in mind.

Moreover, innovation is not merely a new practice but improvement is also implicit in its meaning. Innovation, therefore, should bring a positive impact to a target group which was hitherto not being delivered (Moore et al, 2008). Stephen Osborne (1998) has built on the typology of innovation originally given by Abernathy for business innovation to emerge with a typology of innovation in public services. He posited that innovation can be either in the services being provided by a public department or in the user base of that service or possibly both.

The literature, however, does not provide us with a theory or framework of why and how do public managers innovate (Jensen, 2009). Innovation is highly context-specific and thus should be studied taking the environmental factors into account (Dodge and Ospina, 2005). Hence, this study takes the factors as stated in the innovation literature as well as from the interviews conducted by the authors of the bureaucrats who had innovated at some point in their bureaucratic careers.

Literature

Schumpeter (1957) brought innovation and entrepreneurship into the discourse of management. It, however was linked in notion to the performance of the organization and nothing much else. Till recently, innovation was deemed more important for the private sector as an important mark of differentiation with the competitors. However, since the dawn of New Public Management (NPM) paradigm, which started treating citizens as customers, it quickly perforated into public management too.

Networked Governance paradigm incites and acknowledges the role of policy networks including the civil society. It treats citizens as co-producers of policies. However, a gap exists in the understanding of the role that the public managers play and how do they shape and design the networked governance (Jeffares and Skelcher, 2011).

Damanpour (1996) had highlighted that two factors within bureaucracies inhibit innovation, namely, centralization and formalization; although, he admitted that the conditions under which they inhibit innovation was not known.

Mohr's (1969, 111) theory that the propensity to innovate is a function of 'the motivation to innovate, the strength of obstacles against innovation, and the availability of resources for overcoming such obstacles' is made the base here. In addition, public entrepreneurship and window of opportunity models of policy innovations are included.

Authors Randall Ripley and Grace Franklin (1980) suggested in their book that policy makers avoid any conflict, engage in bargaining and they seek ways of cooperating and routinizing the decision making process. This gives rise to incremental decision making and thereby long-term stability. Thompson (1965) lamented the 'monocratic structures' within bureaucracies hinder any originality and independence.

For ages, policy analysis was under the shadow of incrementalism, muddling through and decision makers followed the garbage can model. But, these theories and models are inept at lending a theoretical lens for radical shifts in policies and bursts of change in policy.

Innovation implies discontinuous change which makes it different from reforms (Osborne and Brown, 2013). Institutional theories find it hard to accommodate bursts of change. Peter John [2000] reviews the institutional theory as one which is well encompassing for policy changes but it falls short in explaining sudden bursts of change. He invokes the civil rights

movement in the US in 50s and 60s to illustrate this shortcoming of established theory in political science.

Peter John elicits that researchers in the field of public policy want to understand why public decisions and their outcomes change, stay stable, vary from sector to sector, and differ in their consequences. It is a wide-ranging field of inquiry-both, in terms of causation as well as effects. The problem is further compounded by the absence of a clear chain of causation-primarily due to a large number of actors involved in the whole policy process-from public opinion to parties and bureaucracies and back again.

Researchers in this domain like Stephen Osborne, Jean Hartley, Sandford Borins and others have created a credible body of work trying to demystify the phenomenon of innovation in public sector management. In the book by Peter Koch and Paul Windrum, they have provided typologies of policy innovations. Jean (Hartley, 2005) also has enlisted the types of innovation quite clearly.

Therefore, the interstices that are left in the research on innovation in public management are to take the perspective of the bureaucrat herself-the very cog in the machine who would make it possible, and also the environment that she works in. Can we determine the factors that the bureaucrats deem important to innovate and think outside the box? This research gap is tried to be filled with this study.

Research Questions

Upon the review of the literature and qualitative interviews done earlier with innovative bureaucrats in India, the researchers could come up with the research questions for this explorative study:

a. What are the important factors that the career bureaucrats deem important to innovate on the job?

b. What are the different types of innovative ways a bureaucrat thinks he/she can innovate?

Method and Data

Q-method has been widely used by social scientists to study human subjectivity, namely persons' viewpoints in particular settings. Unlike surveys using pre-defined and scaled question items, subjects have more latitude to interpret the meaning of statements when ranking them (Brown 1980, 4). In areas of public policy and public administration, Q-sort analysis has been used to study policy analysts' self-role perception in organizations and society (Durning and Osuna 1994), bureaucrats' perception of representation (Kennedy 2013), conception of loyalties by top public administrators (Graaf 2010), perceptions of science-politics boundary arrangement by expert advisors and policymakers (Hoppe 2009), leaders' different perspectives on conservation initiatives (Mattson, Byrd, Brown and Robinson 2011), conflictual perspectives regarding wind farm proposals (Ellis, Barry and Robinson 2007).

Q methods are suitable to study viewpoints of specific groups (Watts and Stenner 2012, 54), focusing on their representations of a subject matter, understandings of it or conduct in relations to it (Curt, 1994). This study focuses on the deeper perceptions of bureaucrats about innovation in government. It tries to capture the various ways bureaucrats conceptualize and operationalize innovation in their respective jobs. This study explores the disposition of bureaucrats working at a middle level in Indian bureaucracy towards innovation in public services. We use Q-method understand their actual role perceptions.

In Q-method, samples are not populations of persons, but statements drawn from parent population (Brown 1980, 28). These statements, namely the Q-set, are presented to

respondents to sort. The Q-set shall be broadly representative of possible perspectives in relations to the research question (Watts and Stenner 2012, 58).

Initially, a concourse of statements is created in which statements from theories, interviews and articles are selected to cover all types of opinions and viewpoints. For this study, the authors created a concourse of about 85 statements borrowed from the policy innovation theories and interviews of bureaucrats that the authors had conducted. The authors developed a 5*3 matrix to categorize the statements which would make up the Q-set.

Table 1: Statement Categories for Q-Set

	Individual Traits	Citizen Engagement	Collaboration	Technology	Political Will
Precursor	Problem-solving attitude; Training	Demand for improved services	International mandate	Better targeting	Electoral math; Constituency building
Enabler	Policy leadership	Civic Leadership	Better design	Better monitoring	Resourceful
Disabler	Lack of training	Poor implementation	Multitudes of voices	Infrastructure	Lack of institutionalization

Methodology

We adopted Q-method to assess the mental make-up and preparedness of bureaucrats in India. 16 bureaucrats were provided with 44 statements to sort on a 9 point likert scale. In Q-method, samples are not populations of persons, but statements drawn from parent population (Brown 1980, 28). These statements, namely the Q-set, are presented to respondents to sort. The Q-set shall be broadly representative of possible perspectives in relations to the research question (Watts and Stenner 2012, 58).

All respondents are invited to follow a two-step sorting procedure: first putting all items into three provisional categories: disagree, agree and neutral; second, putting items of each category in the grid. Sometimes, respondents prefer to put the items directly in the grid (Watts and Stenner 2012). In this case, they often have to move the items previously sorted when the process goes on. All respondents read the items at least twice. 12 respondents change a few items from one category to another when reading them for the second time. The sorting process increases the validity of the responses although it takes more time (on average about 20-30 minutes) than the questionnaire surveys. After it, respondents are invited to comment on statements displayed at the extremes as well as in the middle of the distribution. Respondents are also invited to comment on three open-ended questions:

1. Why do you disagree with the statements you have sorted as most disagree?

2. Why do you agree with the statements you have sorted as most agreeable?

3. What do you think the government should do to increase innovation in administration?

Sample

Convenience sampling was done for this study. 16 bureaucrats who were undergoing a Post Graduate Program in Public Policy at the Management Development Institute Gurgaon, India, were chosen for this study. The respondents were on a study leave, for about a year.

This is the first time after the civil services that they spend a year on an academic institution for a post-graduate program in public policy. This allows them to reflect back on their career and the larger scheme of things, making it easier for them to participate in this exercise. They also belong to various government departments (as given in Appendix 1) making it a good mix of government job types.

Results

Q-sort methodology differs from an ordinary factor analysis as it allows the researchers to load the viewpoints of the respondents. The software loads the respondents' views on factors and gives each factor a score. A factor is to be taken as a group of respondents that load with a high score in the factor matrix. The factor scores for each sort helps in analyzing and grouping of the perspectives that each respondent displays. The relevance of factor scores is present in the common themes that run through their individual sorts and how they correlate with others.

The analysis performed on PQMethod gave rise to extraction of 4 factors which had significant factor loadings (> 0.38). The standard error of the factor extraction was 0.15 and this was also used to determine which factors were important for the analysis (using the relation that the product of two highest factor loadings should be greater than twice the standard error). The factor extraction and subsequent analysis quite neatly distinguishes the viewpoints of the P-set.

Factor	Eigen value	As %	Cumulative
1	7.6539	47.8368	47.8368
2	1.3304	8.3148	56.1516
3	1.0873	6.7958	62.9473
4	1.0577	6.6109	69.5583

Thus, the factors explain almost 70 percent of the phenomenon.

Factor	1	2	3	4
1	1	0.597	0.4567	0.3186
2	0.597	1	0.253	0.3101
3	0.4567	0.253	1	0.1933
4	0.3186	0.3101	0.1933	1

The z-scores of each of the four factors indicated towards a category of factor that is deemed important to innovate in the government. The factor 1 in this manner indicates that 'Citizen Participation' is the theme for the factor. Similarly, factor 2 underscores the importance of 'Technology' in innovating by bureaucrats.

No.	Statement	1	Rank	2	Rank2	3	Rank3	4	Rank4
1	Frequent transfers make for better officers and preparedness for administrators	-1.98	42	-2.34	44	-1.13	39	-1.82	42
2	Recruitment of civil servants ensures problem-solvers are inducted	-0.53	33	-2.31	43	0.88	13	1.02	10
3	Stability is a key factor in a civil servants job profile	0.64	15	0.1	25	0.38	23	-0.6	35
4	Thinking out of the box is not part of the job	-2.01	43	-0.71	36	-1.63	41	-0.19	31
5	Bringing in reforms is the job of an elected representative	-1.1	36	-0.55	34	-1.13	39	-1.82	42
6	Changing governments almost always ushers in policy changes	0.62	16	-0.48	30	-0.63	36	-2.22	44
7	Health and education need more specialists in policy-making	0.67	14	0.37	22	-0.13	32	0.62	20
8	Citizens are to be treated as customers of public services	0.91	7	0.61	16	-0.13	32	1.02	10
9	E-governance is a boon to counter corruption and red-tapism	1.45	1	1.32	1	0.88	13	1.02	10
10	Public management can learn a lot from Private management	0.28	24	1.1	5	0.38	23	0.21	28
11	Policy-making is a job only for civil servants	-1.63	40	-1.25	38	-1.13	39	-1.41	39
12	Civil society can partner the civil services for wicked problems	0.93	5	0.39	21	0.38	23	-1.41	39
13	Technology should lead the way for big policy changes	0.9	9	1.25	2	0.88	13	0.62	20
14	Political will is a key ingredient for reforms in administration	1.33	2	0.65	14	0.88	13	0.21	28
15	There is a disconnect between citizens and the administration	-0.32	31	0.58	18	-2.64	44	0.21	28

16	Distress between citizens in a pluralist society can never be minimized	-1.25	38	-1.73	41	1.38	4	-0.19	31
17	Big changes can happen if citizens can better connect with the administration	0.9	8	1	9	0.88	13	1.02	10
18	Program financing is a hurdle for innovations	-0.52	32	-0.55	33	0.38	23	-0.19	31
19	Budgeting should be handed over to public departments like health, education, etc.	-1.12	37	0.72	11	-0.63	36	0.21	28
20	Emulating successful innovations from abroad is a good idea	0.03	27	-0.69	35	-1.63	41	0.62	20
21	Civil services should open up for lateral entries from industry and academia	0.99	4	0.59	17	0.38	23	-0.6	35
22	Big data can play a crucial role in ushering in big changes	0.42	20	1.12	4	-0.63	36	1.02	10
23	Privacy is a key challenge in program assessments in government	-0.24	30	-0.32	29	-0.13	32	0.21	28
24	There is a need for more rewards for innovation in government	0.81	10	0.77	10	1.38	4	1.02	10
25	Civil servants can be pivots for scaling up grass-root innovations in India	0.8	11	1.01	7	0.38	23	1.02	10
26	Changing radically for bureaucracy is quite difficult	0.48	18	0.37	23	-0.13	32	-1.41	39
27	Brining in process innovations is not that hard in bureaucracy.	-0.01	28	-1.73	42	-0.13	32	0.62	20
28	There is dearth of academia-bureaucracy engagement in India.	0.41	21	1.02	6	-0.13	32	1.02	10
29	Collaboration is a key ingredient for organizational innovation.	0.75	12	1	8	0.38	23	0.62	20
30	Policy-making is a specialist's job who is trained in administration	0.11	26	0.44	20	0.38	23	0.62	20

31	Bounded Rationality is a sad truth of policy-making	0.37	23	0.09	26	-0.13	32	-2.22	44
32	Agenda setting should be guided by evidences only rather than ideals	-1.01	35	-0.54	32	0.88	13	0.62	20
33	Technology alone can save us from aberrations of Street-level bureaucracy	0.24	25	0.03	27	1.38	4	-1.01	36
34	Bureaucrats need incentives to usher in big changes	-0.06	29	1.13	3	0.38	23	0.21	28
35	Legal pluralism is a deterrent to innovation	-0.91	34	-1.63	40	0.38	23	0.62	20
36	Advocacy coalitions play an important role in policy formulations and implementations in India	0.69	13	0.45	19	0.88	13	-0.6	35
37	Innovating on the job goes against the work culture of bureaucracy	-1.52	39	0.13	24	-2.14	43	0.21	28
38	An officer's job is to carry out the orders of the superiors	-1.92	41	-0.26	28	-0.63	36	0.21	28
39	Keeping civil services anonymous serves out of the box thinking	0.44	19	-1.5	39	-0.13	32	-0.6	35
40	Making civil services responsible-free for community is a disincentive to change	0.4	22	-1.14	37	-2.14	43	1.02	10
41	Participatory democracy implies citizens as co-creators of policies	1.2	3	0.62	15	0.88	13	1.02	10
42	Junior civil servants cannot bring big changes	-2.07	44	-0.52	31	-0.13	32	-1.82	42
43	Social innovation should be an outcome of policy innovation	0.48	17	0.66	13	1.38	4	0.62	20
44	Demand from citizens is a good precursor to innovation	0.93	6	0.72	12	0.88	13	0.62	20

One group has emerged as orthodox and conventional in terms of their viewpoints on changes in policy and innovation in government. They however, do want to innovate but within the means provided to them by the government. Six respondents (37.5%) fall into this group. This group can be termed as **Traditional Innovators** who do not challenge the bureaucratic structures and authority of seniors. However, others (62.5%) are quite against the norms and the traditions of civil services in terms of recruitment or training. Such respondents are categorized as **Anti-Traditional Innovators**. The differentiation lies in their thoughts on frequent transfers of a bureaucrat, lateral entry into the services from industry and academia. This has serious bearings on the independence available to a bureaucrat working in the field as well the potential to innovate increases due to better recruitment and mingling of people from different backgrounds coming together to administer and solve societal problems.

Another grouping of the bureaucrats emerges as their opinions converge on the importance of collaboration with the citizens and other stakeholders, especially industry and academia. This group is called as the **Collaborative Innovators**. They emphasize on the role of citizens as co-creators of policies. This is the most important factor that emerged from this study.

One group's viewpoints converge on the use of technology to innovate and keep the stakeholders in the loop. This is called as the **Technological Innovators.** They do not shy away from using big data to solve the wicked problems and they believe that technology can do away with problems like corruption and red-tapism. This is the second most important factor that has emerged from the study.

A final type of innovator can be said to be governed by individual traits of an officer. Some respondents believe that bureaucrats should be provided with incentives to innovate while others clearly disagree and state that innovative officers should just be rewarded and that innovation in government should be incentivised. Such philosophy creates a category of
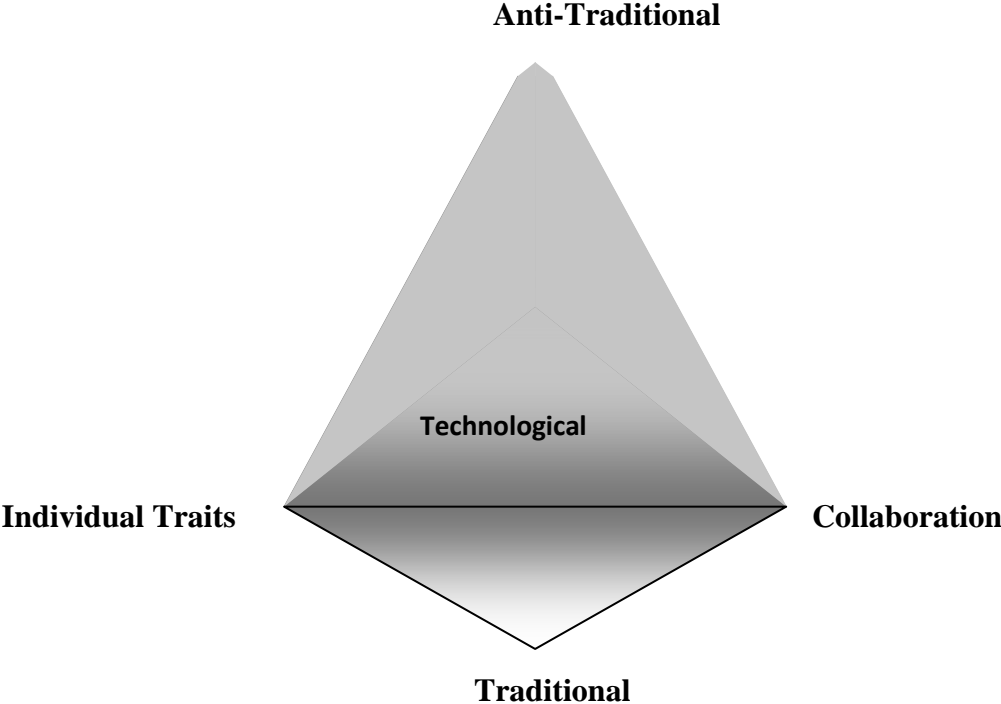
innovators called as **Individual Innovators** who are not too bothered by collaboration or technology but merely with the solution of an administrative problem.

Now all these types of innovators overlap with each other and carry a lot of similar characteristics.

Conceptual Model

Based on the sorting done by the bureaucrarts and the answers written by them post-sorting helped the researcher to categorize their innovative thinking into three basic categories: Technological, Collaborative and Individual. Further, all bureaucrats could be classified as Traditional or Anti-traditional. Since, the first three categories are common to all, the researcher could create a model wherein the innovative type is made into a triangle with its vertices as Technological, Collaborative and Individual. Further, a point is taken in the 3-d space as Anti-traditional and a tetragonal structure is created. Similarly, a point is taken in the negative 3-d space to denote the traditional thought process. This whole figure is shown in Fig. 1 below.

Anti-Traditional

Individual Traits

Technological

Collaboration

Traditional

Discussion

The major disagreements between the groups emerge around the following ideas:

One group which is called as Traditional innovators believes that recruitment in India ensures problem-solvers are inducted into civil services. The other two groups strongly disagree with this and wish to change this. Traditional innovators do not believe that civil society can partner government in solving the wicked problems and also that program is a hurdle for innovation. They strongly believe that policy-making is a specialist's job that is trained in administration. They also oppose opening up of civil services for lateral entries from industry and academia. They opine that advocacy coalitions are not that important in making policies.

The resulting factors of collaboration and technology conform to the latest theories on innovation which deem collaboration and citizens as co-producers of policies (Ansell and Torfing, 2014; Kinder, 2013). The role of Information Technology and e-government initiatives has also been quite well accepted in the discourse of public innovation (Bekkers and Homburg, 2005). The importance of political will and leadership has also been in line with the existing literature. However, the factor that is termed as individual traits includes creativity which conforms to literature but it also includes work independence which is not explicitly seen in the innovation literature other than the theory of benign neglect. However, independence is in the context of Indian bureaucrats being shifted within departments and the independence to allocate funds for innovative projects.

Departures from public administration theories

A lot of statements reflect that the bureaucrats in India do not align themselves with the traditional public administration theories and wish to behave otherwise. The biggest factor that has emerged from this mapping of predisposition to innovation in government is the role

of civil society in shaping as well as co-creating policies with the policy-makers. In the same vein, the importance of innovation which are technology-driven is seemingly quite important for innovation in government. However, what is interesting to observe is the angst against the structural barriers to innovation in the bureaucracy. This is observed in the viewpoints of the anti-traditional innovator that opposes frequent transfers of the civil servants and concedes that the recruitment of civil servants does not ensure that effective problem-solvers are inducted into services. This reflects that officers prescribing to this viewpoint want to bring in structural reforms in the bureaucracy to promote innovation.

The results suggest that bureaucrats are ready to be so-called 'policy entrepreneurs' as posited by Mintrom (1997) as they believe they can be change agents and can help in scaling up grass-root innovations in policy. Nixon (1987) had suggested that innovation occurs when there is a practice of benign neglect in a government; however, the respondents want more independence but more collaboration too. This opposes the idea of benign neglect.

Another important departure emerges in terms of a precursor to innovation. Jensen (2009) mentions that a change in government would bring about a shift in policies resulting in policy innovations. In our study, we found that bureaucrats do not believe in this. For serving bureaucrats, only political will is an important factor that facilitates or preceded innovation in government. The responding bureaucrats also unequivocally reject emulating innovative ideas from another society which nips international or inter-governmental pressures in the bud.

The responses from the bureaucrats also show that they do not believe in keeping civil services anonymous as it is believed by traditional public administrators and theorists. On the contrary, they believe that making policy-makers anonymous does not make it an incentive to innovate. The career bureaucrats have explicitly written that the government should reward innovative officers to make replication easier and innovate more often.

Another myth that is broken through this study is that junior civil servants are equally likely to innovate on the job. This is to say that the propensity to innovate does not depend on one's experience or position in the government.

The factor analysis done on PQMethod has yielded 4 factors that are deemed to be important by the serving bureaucrats for innovation in government. Based on these, the authors have developed innovation radar which enlists the drivers for innovation.

Policy Innovation Drivers
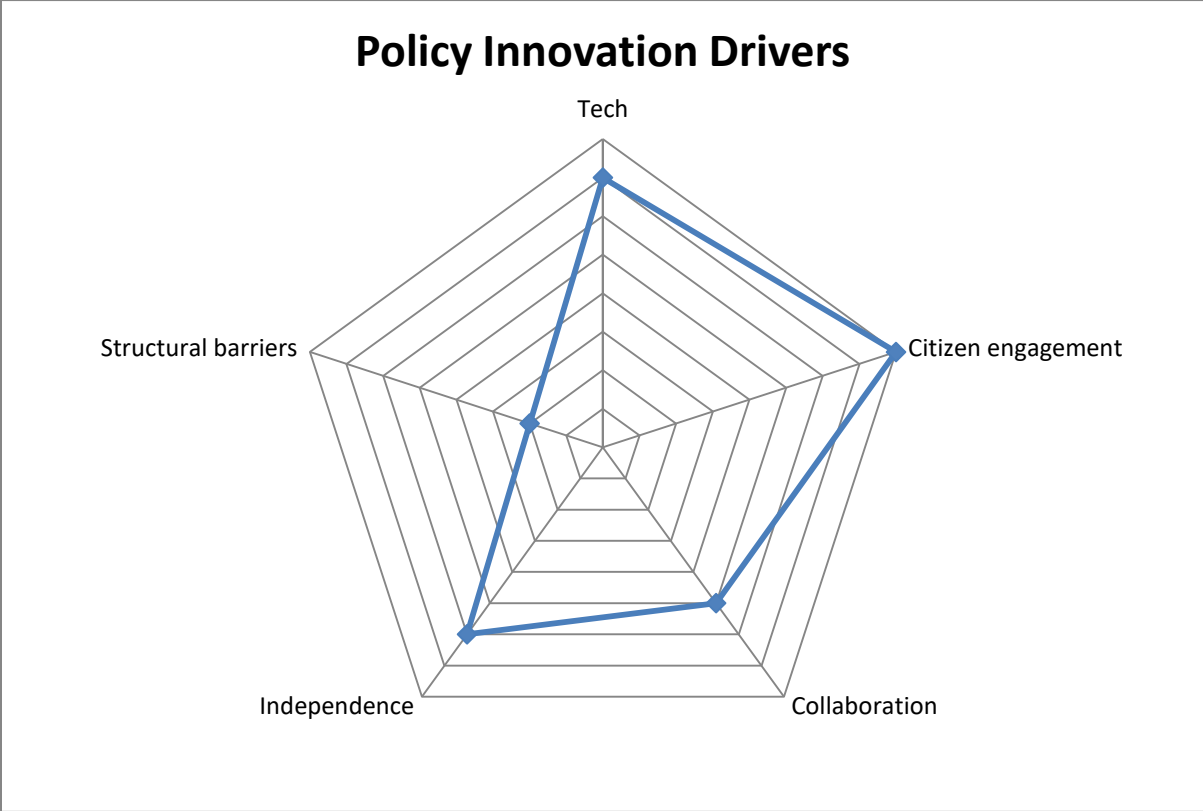
As shown in the radar, citizen engagement is the most important driver for innovation in government followed by technology, collaboration among different stakeholders, individual traits and the absence of structural barriers. The factors are placed in the radar in accordance with their weights which implies that citizen engagement has the highest weight.

Appendix 1

S No	Designation	NAME OF MINISTRY
PPM02	DIVISIONAL MECHANICAL ENGINEER	MINISTRY OF RAILWAYS
PPM03	DIRECTOR	DEPARTMENT OF TELECOMMUNICATION, MINISTRY OF COMMUNICATION AND INFORMATION TECHNOLOGY,
PPM04	GM(CORD & Mon)	MINISTRY OF COMMUNICATION AND INFORMATION TECHNOLOGY, DEPARTMENT OF TELECOMMUNICATION
PPM05	DIRECTOR	MINISTRY OF DEFENCE/MILITRY ENGINEER SERVICES
PPM06	DIRECTOR (NT-IV) DOT HQ	MINISTRY OF COOMUNICATIONS & IT & DOT
PPM07	SECOND - IN- COMMAND	MINISTRY OF HOME AFFAIRS/ BORDER SECURITY FORCE
PPM08	DIRECTOR	MINISTRY OF HRD
PPM09	DIG	MINISTRY OF HOME AFFAIRS
PPM10	DDG(RC), TEC	MINISTRY OF COMMUNICATION AND INFORMATION TECHNOLOGY, DEPARTMENT OF TELECOMMUNICATION
PPM11	DIRECTOR IN PRINCIPAL CCA	MINISTRY OF COMMUNICATION AND INFORMATION TECHNOLOGY, DEPARTMENT OF TELECOMMUNICATION
PPM12	DIRECTOR (CONTRACT)	MILITARAY ENGINEER SERVICES
PPM13	SRGM (CNP)	MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY, DEPARTMENT OF TELECOMMUNICATION
PPM14	ADDITIONAL S.P. RAJASTHAN POLICE	MINISTRY OF HOME, GOV OF RAJASTHAN POLICE
PPMM15	DEPUTY INSPECTOR GENERAL	MINISTRY OF HOME AFFAIRS/ITPB POLICE
PPM16	DDG IN PRINCIPAL CCA	MINISTRY OF COMMUNICATION AND INFORMATION TECHNOLOGY, DEPARTMENT OF TELECOMMUNICATION
PPM18	DGM(CM-MARKETTING)	MOC & IT, DOT BSNL

Appendix 2

Factor Characteristics

Factors	1	2	3	4
No. Of defining vatiables	9	4	1	1
Avg. Rel. Coefficient	0.8	0.8	0.8	0.8
Composite Reliability	0.973	0.941	0.8	0.8
S.E. of Factor Z-Scores	0.164	0.243	0.447	0.447

Standard Errors for Differences in Factor Z-Scores

Factors	1	2	3	4
No. Of defining vatiables	9	4	1	1
Avg. Rel. Coefficient	0.8	0.8	0.8	0.8
Composite Reliability	0.973	0.941	0.8	0.8
S.E. of Factor Z-Scores	0.164	0.243	0.447	0.447

(Diagonal Entries Are S.E. Within Factors)

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