Working Paper

Behavioral Studies in Economics and Public Policy Journals: A Bibliometric Analysis

Stuti Rawat
Lee Kuan Yew School of Public Policy
National University of Singapore
stuti.r@u.nus.edu

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Abstract

Scholars in the field of economics and public policy have long recognized the importance of understanding behavioral processes. Based on the assumption that the increasing prominence of behavioral dimensions in economics and public policy is reflective of and reflected by academic writing on the topic, this paper undertakes a bibliometric analysis of the top Economics and Public Policy Journals over time (1940-2016). The intuition behind focusing on the top journals is to capture the direction of institutional and academic thought in the ‘top echelons’ of the core disciplines. For any discipline these invariably constitute its driving force. The paper addresses three questions. The first, is the rise of behavioral studies in economics and public policy a recent phenomenon or something that follows cycles of its own? Second, is this cyclical pattern mirrored between the two disciplines? Given that behavioral economics is premised on violations of rational choice theory (Thaler and Mullainathan, 2000) which itself can be traced to Simon’s conception of ‘bounded human rationality’ from 60 years ago (Simon, 1955; 1957a; 1957b), there is reason to believe in this possibility. The final question is whether there is a sectorial or geographic dimension to these behavioral studies. The paper hypothesizes a few reasons explaining these observations and discusses the implications of these findings.

I. Introduction

Scholars in the field of economics and public policy have long recognized the importance of understanding behavioral processes. Adam Smith can perhaps be regarded as one of the earliest behavioral scholars. His Theory of Moral Sentiments (1759) is full of insights that relate to aspects of individual preference and judgment that presage developments in contemporary behavioral economics (Ashraf, Camerer and Lowenstein, 2005). Two centuries later Robert Dahl (1947) raised concerns about the need for public administration to derive from and contribute towards an understanding of human behavior. In the years since this early
scholarship, behavioral change instruments and behaviorally informed policy have been on an ascent (Lunn, 2014; Van Bavel et al., 2013).

Academic writing, in addition to the knowledge that it provides on its chosen topic of focus, serves a two-fold purpose. It provides information about the distance traversed by a discipline as well as signposts for the direction in which it is likely to evolve. Based on the assumption that the increasing prominence of behavioral dimensions in economics and public policy is reflective of and reflected by academic writing on the topic, this paper undertakes a bibliometric analysis of the top economics, and public policy journals to answer three questions. The first question this paper seeks to address is whether the rise of behavioral studies in economics and public policy is a recent phenomenon or something that follows cycles of its own. A second related question is whether this cyclical pattern is mirrored between the two disciplines. Given that behavioral economics is premised on violations of rational choice theory (Thaler and Mullainathan, 2000) which itself can be traced to Simon’s conception of ‘bounded human rationality’ from 60 years ago (Simon, 1955; 1957a; 1957b), there is reason to believe in this possibility.

The final question is whether there is a sectorial or geographic dimension to these behavioral studies. Are researchers likely to focus more on certain areas and geographic regions over others and why is it so.

In order to undertake the bibliometric analysis, behavioral studies published in the top economics and public policy journals\(^1\) - from the 1940s onwards to 2016\(^2\), were looked at. The

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1 The top three economics journals and the top four public policy and public administration journals are considered. The reason for such a selection is discussed in the Methodology section.

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intuition behind focusing on the top journals was to capture the direction of institutional and academic thought in these ‘top echelons’ that play a critical in the discipline’s evolution. The top journals are determined on the basis of their mean ranks over time calculated from three different ranking systems. A preliminary shortlist of articles was made through key word searches of the topic, title, and abstract, before closer inspection. Relevant articles were then disaggregated over time, sectors and regions.

The limitations of this approach stem from the methodology employed and from the fact that published journal articles are influenced by factors other than research interests and real world relevance. Publishing and acceptance trends as well as grant-funding proposals linked to certain areas may have a role to play in the academic writing that results. While it is beyond the scope of this particular study to account for these other extraneous factors, it is worthwhile to bear this caveat in mind while looking at the results.

The structure of this paper is as follows: the next section, after providing a brief introduction to behavioral economics, discusses the increasing importance of behavioral instruments and behaviorally informed policy and provides reasons for this. The aim of this section is to provide a description of real world developments so as to be able to juxtapose them against related academic writing in economics and public policy. The third section elaborates on the methodology undertaken for the bibliometric analysis and its underlying rationale. The fourth

4 Other than the Google rankings which listed ‘Public policy and Public Administration’ as a separate discipline, neither the SJR rankings nor the Web of Science rankings listed public policy as a separate subject area. However under the ambit of ‘Public Administration’ these sources listed both public policy and public administration journals. Thus, ‘public policy’ journals in this paper refers to journals in both public policy and public administration.
section discusses the findings and the major themes of the analysis, answering the three questions that were initially posed. It is found that that the rise of behavioral studies in economics and public policy follows cycles of its own, three distinct phases in this regard are identified. The geographic spread of behavioral studies in public policy is more restricted compared to behavioral economics. Certain sectors feature in behavioral studies in both public policy and economics, while others exhibit a disciplinary bias in terms of being featured more in one discipline over the other. The fifth section focuses on the implications of the findings and how they tie in with real world issues. This is followed by a discussion of the limitations of the study and some concluding remarks.

II. Rising importance of behavioral economics and behavioral policy

It was only with the publication of Kahneman and Tversky’s prospect theory in 1979 that mainstream economists began to accord a degree of acceptance to behavioral economics (Oliver, 2013). Until then, rational choice formed the basis of orthodox (neoclassical) microeconomics and was the dominant theoretical approach to study economic policy problems over a number of decades (Micklitz, Reisch and Hagen, 2011). Rational choice theory postulates that human agents are perfectly rational utility maximizing decision makers. Rational choice models thus assume that people: (i) have ordered, stable preferences; (ii) are self-interested utility maximizers; (iii) have the correct information to assess outcomes relative to objectives; and (iv) make strategic decisions based on their preferences, calculations of costs, risks and rewards (Jones, Boushey and Workman, 2006).

While different definitions for behavioral economics abound, scholarly definitions can be categorized into three broad categories, the first like Herbert Simon’s focus on the violations of neoclassical assumptions of human rationality. According to Simon (1976), actual behavior
often falls short of objective rationality\(^5\) because of a lack of complete knowledge of consequences, of all possible alternatives and of difficulties associated with anticipation. He thus defines behavioral economics as being concerned with the empirical validity of neoclassical assumptions about human behavior and where they prove invalid, discovering empirical laws that would describe behavior as correctly and adequately as possible. The second group of definitions focus on the explicit incorporation of psychological phenomena. Thaler and Mullainathan (2000) define it as the combination of psychology and economics that investigates what happens in markets when human agents exhibit limitations and complications. They put forward three categories for agents' deviations: (i) bounded rationality and limited cognitive abilities; (ii) bounded willpower; and (iii) limited self-interest and reciprocity. The third category of definitions focus on the methods. Shiller (2005) defines behavioral economics as the application of methods from other social sciences, particularly psychology, to economics. Unlike orthodox economics that adopts a deductive approach, behavioral economics follows an inductive approach that is based on systematic and repeated experiment and observation. Orthodox economics begins from a set of well specified assumptions, which in turn are premised on rational choice theory. From these assumptions, results are deduced, thus empirics follow deductive models. Behavioral economics in contrast assumes less about economic behavior and instead infers it from actual observations. Thus, observations are followed by models or theory and ‘method’ becomes crucial (Lunn, 2013).

\(^5\) Simon (1976) makes a distinction between different kinds of rationality. A decision is “objectively” rational if it is the correct behavior for maximizing given values in a given situation. It is “subjectively” rational if it maximizes attainment relative to the actual knowledge of the subject. It is regarded as “deliberately” rational if the adjustment of means to ends has been deliberately brought about. It is “consciously” rational to the degree that the adjustment of means to ends is a conscious process. Finally, it is “organizationally” rational if it is oriented towards the organization’s goals and “personally” rational if it is oriented towards the individual’s goals.
Behavioral economics and consequently behaviorally informed policy are increasingly gaining traction among practitioners, with the behavioral umbrella regarded to encompass experimental methods as well as behavioral insights. While the inclusion of the methodology of randomized experiments under the ‘behavioral’ category has been regarded as contentious by some (Galizzi, 2014), they have been included under the behavioral category in this paper for two reasons. First, as demonstrated above, a set of economists do regard the focus on methods to be a key aspect of behavioral economics. Second, given that the aim of this paper is to map academic knowledge against practitioner-level developments, it may be appropriate to include experimental methods under the behavioral category, much as a large number of practitioners do (see Haynes et al., 2012).

The experimental method refers to the use of a control and treatment group with subjects randomly distributed between the two. Through randomization the two groups are probabilistically similar to each other on average so differences in outcomes between groups can be attributed to the treatment (Shadish, Cook and Campbell, 2001). This results in very high internal validity of the study. The concept of having a control group and a treatment group is not new or novel. It can be traced to James Lind in 1747 who used it in an experiment demonstrating the benefits of citrus fruits (Thomas, 1997). Randomization was later introduced in the 1920s by Neyman and Fisher in separate agricultural experiments. Between the 1960s and 1990s randomized trials were used in government sponsored social experiments. Since then economists have made use of randomized experiments in a variety of settings around the world (Levitt and List, 2009), with the use of behavioral economics becoming increasingly common in the policy world and especially development policy (Datta and Mullainathan, 2014). Though the number of randomized trials in public policy are still
far lesser than those in the health sector as evident in figure 1, (Shepherd, 2007) yet even this limited use has been a major stimulus for empirical development economics (Basu, 2014) and in policy designed towards tackling poverty (see for instance Banerjee and Duflo, 2012; Karlan and Appel, 2011).

![Figure 1: 20th century’s Randomized Controlled Trials (RCTs) in health and in social welfare, education, crime and justice](image)

Source: Shepherd (2007).

A number of organizations have made concerted efforts to make rigorous evidence on these randomized controlled trials centrally available. These include evaluation databases of organizations such as J-PAL, World Banks’ Development Impact Evaluation (DIME), Network of Networks on Impact Evaluation (NONIE), Coalition for Evidence-Based Policy, and the American Economic Association (Glennerster and Takavarasha, 2013). This has contributed to the wider dissemination and spread of behavioral economics premised studies. Thaler and Sunstein (2008) argue that understanding basic behavior can be helpful in reducing ‘behavioral market failures’ and can be useful in making behaviorally informed policy interventions in daily life. The United States and the United Kingdom have been among the
earliest and most enthusiastic adopters of such policies that are influenced by behavioral insights (Lunn, 2014). Policy making in the European Union too appears to be affected (Van Bavel et al. 2013). In all of these countries, as well as others such as Australia and France, government or government supported research centers have concentrated research efforts on the application and implication of behavioral insights for larger policy making (see Productivity Commission, 2008; Cooper 2010; Centre d’analyse stratégique, 2011). In other countries like Norway and Denmark the thrust for behaviorally informed interventions has taken a more bottom up approach with the involvement of actors from outside the government. For instance, the not-for-profit “iNudgeYou” in Denmark is dedicated to improving decision making through small-scale experimentation and training and information dissemination. In Norway, the not for profit “GreeNudge” has a similar philosophy (Kallbekken et al., 2013).

The rising influence of what can be termed ‘applied behavioral science’ (Kahneman, 2012) can be attributed to its successful application in achieving higher target compliance through relatively lower costs (Thaler and Sunstein, 2008). It does so by affecting program design in three ways - by changing how the scope of the problem is defined, how it is diagnosed and how solutions to it are designed. Embedding innovation into the design process further leads to a greater chance of success (Datta and Mullainathan, 2014). Acceptance of new ideas and innovations, and their success, as argued by Hargadon and Douglas (2001) requires them to be closely related to existing institutions. This is achieved by being very aware of the environmental and institutional context and embedding behavior based interventions within
it. Table 1 presents evidence of some policy measures and studies and the specific aspect of human decision making that they employ or use to explain the findings. This list is illustrative of the geographic and sectorial spread of behavioral economics and behavioral policy.

Another reason that can explain the rising popularity of behavioral economics is that it provides an alternative way of using traditional policy instruments. Policy instruments are generally separated into three categories: inducements (incentives and sanctions), regulations, and knowledge or capacity tools (Schneider and Ingram, 1997; Stone 2002). Theories of rational choice and utility maximization are the underlying assumptions on which these tools are traditionally premised (Stewart 1993; Stone 2002). Behavioral economics makes use of these same tools but in a way which seeks to exploit the cognitive biases individuals consistently exhibit, instead of targeting the supposed utility maximization tendency of individuals. As table 1 reveals, making use of the same policy tools, albeit in a fashion that is slightly different, results in far more profound change. To take an example, Ferraro and Price (2013) find that informing individuals about their neighbors’ water consumption results in conserving water much more than providing them simple information or messages exhorting them to be thrifty water users. Thus, the same policy instrument i.e. ‘knowledge’ is used to harness into the tendency that behavioral economists have observed—that of individuals to conform to what they perceive to be the social norm, resulting in greater success than the traditional use of this instrument. Even those who critique behavioral economics for its inability to provide an overarching theory, accept that it can be regarded as a valuable toolbox

\[6\] This has been tabulated based on the author’s selection from the literature perused and does not claim to use a systematic process to arrive at it. The list is merely indicative and is in no way exhaustive.
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Source</th>
<th>Country/Organisation</th>
<th>Domain</th>
<th>Action</th>
<th>Behavioral rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lunn, 2014</td>
<td>EU</td>
<td>Consumer rights directive</td>
<td>Banning pre ticked boxes on online purchases to overcome consumers' tendency to go with the default option</td>
<td>Overcoming behavioral tendency to gravitate towards the default option</td>
</tr>
<tr>
<td>2</td>
<td>Haynes et al, 2013</td>
<td>UK (UKBIT)</td>
<td>Fine collection by Courts and Tribunal Services</td>
<td>Increasing payments methods and issuing reminders that talk of tax compliance rates by Her Majesty's Courts and Tribunal Services</td>
<td>Overcoming the small but immediate costs that tend to have a disproportionate impact on behavior</td>
</tr>
<tr>
<td>3</td>
<td>Institute for Government, 2010</td>
<td>Scotland (Violence Reduction Unit)</td>
<td>Crime</td>
<td>If a gang member commits a murder, then the entire gang is targeted for offences: drug activities, weapon possession, parole and probation violation</td>
<td>Punishment is replicated in the same way as the delinquent behavior was – through the social norm of gang membership</td>
</tr>
<tr>
<td>4</td>
<td>Bates, Beales and Heathfield, 2004</td>
<td>UK</td>
<td>Public housing</td>
<td>Incentivizing tenancy with a scheme that offers priority maintenance, modernization etc., resulted in lower rent arrears.</td>
<td>Tapping into the behavioral propensity to engage in reciprocity and mutuality</td>
</tr>
<tr>
<td>5</td>
<td>Cohen, 2006</td>
<td>US</td>
<td>School achievement among minority groups</td>
<td>Structured writing assignments designed to improve self-worth and pride through subjects personal to them, reduced achievement gap between minority and other students</td>
<td>Self-affirmation is induced through improving frames of personal identification</td>
</tr>
<tr>
<td>6</td>
<td>Ashraf, Bandiera and Jack, 2014</td>
<td>Zambia</td>
<td>Public service delivery by citizens</td>
<td>A group of hairdressers who received public recognition sold twice as many condoms as another group who received monetary commissions</td>
<td>Incentive structure is designed for pro-social motivation</td>
</tr>
<tr>
<td>7</td>
<td>Karlan et al, 2014</td>
<td>Ghana</td>
<td>Insurance and Agriculture</td>
<td>An offer of insurance indexed to rainfall led farmers to apply chemicals that were more expensive and they also spend more on land preparation</td>
<td>The environment is altered to induce adoption and impact performance</td>
</tr>
<tr>
<td>8</td>
<td>Cohen and Dupas, 2010</td>
<td>Kenya</td>
<td>Health</td>
<td>Cost sharing of insecticide treated bednets (ITNs) dampened demand for them as opposed to free distribution.</td>
<td>Explained by the zero pricing model which differs from the standard model in that when a product becomes free its intrinsic value increases (Shampanier, Mazar and Ariely, 2007)</td>
</tr>
<tr>
<td>9</td>
<td>Thaler and Benartzi, 2004</td>
<td>US (three firms)</td>
<td>Savings (urban)</td>
<td>People committed in advance to allocating a portion of their future salary increases toward retirement</td>
<td>Overcoming the status quo bias, nominal loss aversion and tendency to procrastinate (which produces inertia).</td>
</tr>
</tbody>
</table>
This resulted in an increase in the savings rate and in the saving’s plan participation.

<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Category</th>
<th>Description</th>
<th>Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karlan et al, 2010</td>
<td>Peru, Bolivia, Philippines</td>
<td>Savings (rural)</td>
<td>The amount people saved was raised by simply providing them with timely reminders about their own saving goals</td>
<td>Overcoming people's 'limited attention' problem</td>
</tr>
<tr>
<td>Bertrand et al, 2010</td>
<td>South Africa</td>
<td>Borrowing</td>
<td>Reducing the number of combinations of interest rates and loan tenures led to as much of an increase in uptake as reducing the interest rate charged by 2.3 percentage points</td>
<td>Using choice simplification</td>
</tr>
<tr>
<td>Banerjee et al, 2010</td>
<td>India</td>
<td>Public health: immunization</td>
<td>Taking a child to a free immunization camp was rewarded with a half-kilo bag of lentils. This succeeded in doubling the fraction of children immunized</td>
<td>A small non-monetary reward can induce behavioral change with large consequences</td>
</tr>
<tr>
<td>Ferraro and Price, 2013</td>
<td>US</td>
<td>Water conservation</td>
<td>Comparison to neighbors curbed water consumption far more than either simple information provision or messages exhorting people to be thrifty users of water.</td>
<td>Individuals make efforts to conform to what they perceive the social norm to be</td>
</tr>
<tr>
<td>Duflo, Dupas and Kremer, 2011</td>
<td>Kenya</td>
<td>Education</td>
<td>Tracking student performance benefitted both high achieving and lower achieving students</td>
<td>The peer effect of high achieving students (social norm) and targeting are made use of</td>
</tr>
</tbody>
</table>

**Table 1:** Some behavioral studies in economics and public policy, their impact and the behavioral insight that they targeted

Source: Based on miscellaneous sources as listed above. See bibliography for complete citation
that can be used to enrich understanding of human decision making, and thus potentially allowing improvement of the design of public policy on a context specific, case-by-case basis (Oliver, 2013). To this end, Oliver (2015) proposes few behavioral economics observations that run counter to standard economic theory and might be most useful in policy design. These are: present bias, reference points, loss aversion, probability transformation, reciprocity, and identity.

Amir et al., in a 2005 paper, advocated four ways for the application of behavioral sciences to policy: (i) by using a grassroots approach that involves the local community; (ii) by taking the established path from economics to policy and attempting to modify economics to be more descriptively accurate and influencing policy from there; (iii) by influencing policy via law; (iv) by doing research directly on policy. Their analysis, as Lunn (2013) points out, largely pre-dated the recent acceleration in behavioral economics’ progress. He instead identifies three routes by which behavioral economics has influenced policy: (i) the theory of libertarian paternalism ('nudges'); (ii) the provision of toolkits for policy makers seeking behavioral

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7 Present bias is the observation that people place a heavy weight on the immediate moment, and quickly and greatly discount future moments leading to cases of dynamic inconsistency, thereby making it difficult to predict people’s future preferences on the basis of their present stated preferences. Reference points relates to the observation that in individual decision making gains and losses are weighed around a specific point of reference, which is usually the status quo, but is susceptible to manipulation. Further for an individual losses may loom larger than gains, and this is referred to as loss aversion. Probability transformation is the tendency for individuals to overweight small probabilities and underweight large probabilities (Oliver, 2015). Reciprocity is a social norm that involves in-kind exchanges between people, contrary to the assumption of selfish utility maximization, it involves responding to another’s action with another equivalent action. It can be positive or negative (Fehr and Gächter, 2000). Finally, identity of an individual defines who they are and influences their behaviours, because different behavioural norms are associated with different identities. Thus individuals experience positive utility from working for or being associated with an organization with which they identify, and negative utility when they perceive themselves as outsiders (Akerlof and Kranton, 2010).
change; and (iii) the expansion of the skill-set of applied economists (and scientists in related fields).

*Nudge* by Thaler and Sunstein (2008) is a book on applying behavioral economics to policy making. They define a nudge as ‘any aspect of the choice architecture that alters people’s behavior in a predictable way, without forbidding any options or significantly altering their economic incentives’ (p. 6). Thus, by making use of individuals’ cognitive biases, policy can be designed in a way (what they term ‘choice architecture’) to influence people’s choices in a certain direction. They categorize this approach as ‘libertarian paternalism’ (2003, 2008). The emergence of many government initiatives have been influenced by this, such as the formation of the UK Behavioral Insights Team (UKBIT) (Lunn 2013) and auto enrolment in pensions in the US (Sunstein, 2011). With respect to his point regarding the provision of a toolkit, Lunn argues that many issues in behavioral economics are still complex and unresolved. There isn’t a shared understanding, even among behavioral economists, of which behavioral findings have the strongest impact on behavior, nor in which contexts behavioral biases result in benefit or harm, there are inherent difficulties in turning behavioral economics into a toolkit for use by generalists and using this path for further integration with policy development. He feels that the best chance to further integrate behavioral economics with policy making comes through his third point, which is, building capacity to engage in applied experimentation, piloting and evaluation. In this, behavioral economics has the advantage that there exists a professional network within its broader discipline that is already a part of the policy making process in many countries (for instance, Sendhil Mullainathan’s presence in the US Consumer Financial Protection Bureau, Sunstein and Thaler’s role at the Office of Information and Regulatory Affairs in the US and as adviser to UKBIT respectively).
Oliver (2013), on the other hand, attributes the reasons for the rise of behavioral economics to the failings of the neoclassical model. He thus cites two main reasons for the increased policy interest in behavioral economics. First is the 2008 financial crisis that was caused in part by insufficient regulation of the financial sector, which brought the shortcomings of the neoclassical economics model to the fore. The second reason is the search by liberal-minded politicians to find ways to motivate people to change their self-and-societal harming behavior without imposing interventionist measures such as bans and regulations. This argument is similar in part to that made by Strassheim, Jung and Korinek (2015) in explaining the greater institutionalization of behavioral economics in Britain as compared to Germany. According to them, behavioral ideas are ‘reframed as solutions to recent policy failures, promising to reconcile opposing views on the relationship between science, politics and citizens’ (p.1), under the heading of libertarian paternalism.

Thus behavioral interventions linked to policy have withheld any overhauling changes to the existing setup so far. Instead, they have concentrated on how information is presented to actors, the convenience of different options facing them, the salience of certain pieces of information and what actors know about others’ decisions (Lunn, 2014). It can be argued that such an approach would make it more amenable to adoption in varied sectors and areas despite the tendency towards institutional inertia. This indeed does appear to be the trend

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8 The other reasons Strasheim, Jung and Korinek (2015) cite are, first- behavioral economics gains politico-epistemic authority by combining political practicality with experimental expertise and second-differences between Great Britain and Germany are related to domestic cultures of expertise that influence how knowledge claims are validated and valued.

9 Institutions tend to be sticky-once in place and accepted, they can limit change and future choices (World Bank, 2010, p.321)
that is reflected in academic writing on the subject as well, as section IV shows. But before that the methodology that led to this analysis is discussed below.

III. Methodology and Rationale:

The bibliometric analysis was done in two stages. In the first stage, the top journals in the discipline of economics and public policy were determined. Restricting focus to the top journals helps map academic thought in the upper echelons of these disciplines. This is important because in any discipline these most often are the dominant driving force that steer the way forward.

In the next stage, articles were shortlisted on the basis of a key word search of the topic, title, and abstracts. These articles were further examined to verify whether they satisfy the criteria of a ‘behavioral study’ and then analyzed to answer the three research questions that were identified earlier.

Stage 1: Determining the top journals

In order to determine the top journals in economics and public policy, three different sources were looked at-Web of Science rankings by Thomson Reuters ("Web of Science | Thomson Reuters", 2016), SCImago Journal rankings (SJR) ("SJR : Scientific Journal Rankings", 2016) and Google Scholar Metrics ("Google Scholar Metrics", 2016). Comparing journal rankings over time across the three sources acts as a robustness check in determining which the final top journals in the field are. This is because while the exact rank between them may be a subject of much contentious debate, but comparing across three different sources makes it possible to determine those journals that have been widely regarded as among the top of their discipline for a long period of time.
While obtaining rankings for economics journals was fairly straightforward, this wasn’t the case for public policy journals. Other than the Google Scholar rankings which listed ‘Public Policy and Public Administration’ as a separate discipline, neither the Web of Science rankings nor the SJR rankings listed public policy as a separate subject area. However, under the category of ‘Public Administration’, these sources listed both public policy and public administration journals. Thus, it may be appropriate to bear in mind that ‘public policy’ journals in this paper technically refers to journals in both public policy and public administration.

Of the three ranking sources, the Web of Science database ranked journals for every year from 1997 to 2014. Similarly, the SJR database ranked journals from 1999 to 2014. However, Google Scholar rankings were not available for every year and it also included open access sources. Google rankings were based on the Google index as of June 2015, which in turn is based on the ‘h-index’ \(^{10}\) of the last five calendar years. This meant that while the Web of Science rankings and the SJR rankings were available for multiple years, Google Scholar provided only a single set of ranks which was based on the activities of the last five years.

As a first step, for the SJR and Web of Science database every journal that appeared in the rankings in each of the years was accorded a unique id. With the help of this unique id, the mean rank value for every journal was calculated. This was calculated by dividing the sum of the ranks received by the journal over time by the number of years it featured in the rankings. For instance, if a journal was ranked 5, 4, 3 in three years, its mean rank value was calculated to be \(12/3=4\). Next, based on their mean rank values, the journals were ranked in ascending order.

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\(^{10}\) The h-index of a publication is the largest number \(h\) such that at least \(h\) articles in that publication were cited at least \(h\) times each. For example, a publication with five articles cited by, respectively, 17, 9, 6, 3, and 2, has the h-index of 3 (“Google Scholar Metrics Help”, 2016).
order and this determined their ‘adjusted rank’. The adjusted rank can essentially be thought of as a combined rank for the journal over the entire time period as per a particular source (SJR or Web of Science). To take an example, if this procedure is followed for four journals A, B, C, D over a period of time such that their mean rank values are calculated to be 1, 3.5, 4, 2 respectively, then the adjusted ranks of these four journals over the entire period would lead A (1) to be the top ranked followed by D (2), B (3) and C (4), with the figure in brackets denoting their adjusted ranks (Table 2). The adjusted ranks for journals was calculated for both the SJR rankings and the Web of Science rankings independently.

<table>
<thead>
<tr>
<th>Journal</th>
<th>Mean Rank Value</th>
<th>Adjusted Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>3.5</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 2: An illustrative example of the mean rank value and the adjusted rank for four hypothetical journals.

As a third step, a cumulative rank value was obtained which was calculated as the mean rank of the top ten publications for the three sources i.e. the adjusted ranks for SJR and the Web of and the top ten Google scholar ranks. It may be worth mentioning that only some of the journals appeared in the top ten ranking of all the three sources. These journals that appeared in the top ten of all three sources were given precedence in the final shortlist and those with the lowest cumulative rank value among them were selected. In case of Public Administration and Policy Journals, four journals with their adjusted ranks featured in all the three sources - Journal of Public Administration Research and Theory, Governance, Public Administration
and Public Administration Review. The top three among these were, Journal of Public Administration Research and Theory, Governance and Public Administration.

In the case of economics journals, four journals appeared in all the three sources. Out of these two journals exclusively dealt with financial research (Journal of Finance and Review of Financial Studies). Given that the aim of this paper was to look at the sectorial spread of behavioral economics, these journals were dropped from the list and the journals that appeared in the top ten of at least two sources were looked at. Here again, after dropping journals that self-reported limitations on their scope (such as the Journal of Economic Literature) the journal with the lowest cumulative rank value was selected. This was the Journal of Political Economy. Thus, the final top three economic publications that were looked at were, *Quarterly Journal of Economics, Econometrica and the Journal of Political Economy*11.

In case of the top economics journals, all three of them dated back to well beyond the 1940s12. However, in case of the top three public policy journals, only one dated back to the 1930s, (Public Administration), the other two went back to the early 90s (Journal of Public Administration Research and Theory-1991 and Governance-1988). So in order to facilitate comparison over a longer period of time, the fourth ranked journal - Public Administration Review, which dates back to 1940, was also included in the analysis for public policy journals. Thus, the top public policy journals that were finally included for analysis were- *Journal of Public Administration Research and Theory, Governance, Public Administration and Public Administration Review.*

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11 Refer to table 5 and table 6 in the Appendix for the final list of top ten journals as per the different sources
12 The Quarterly Journal of Economics dates back to 1886. Econometrica is from 1933 onwards, while Journal of Political Economy dates to 1892.
Since it was only post-1940 that at least two public policy journals were available for analysis, the year 1940 was taken to be the cut-off point from which the bibliometric study of the journals commenced.

**Stage 2: Shortlisting relevant articles**

For the top journals in both the disciplines, searches for the appearance of key words in either topic, title or abstract of articles from the 1940s onwards until the latest available issue (April 2016) were undertaken. The key words were: behavior, behaviour, economics, experiment, prospect, randomize, trial, experimental, experiments, randomized, behavioural, behavioral, experiments. These key words and their variants were tailored depending on the search engine employed by the journal database\(^\text{13}\). For economics journals, the word ‘economics’ was dropped. The key words used were made as broad as possible so as to minimize chances of missing out on a relevant article. Following this, a deeper inspection of the shortlisted articles was carried out to determine whether they qualified as a behavioral study. In order to do so, a basic decision rule was employed. For an article to qualify as a behavioral study, it should either use the experimental methodology or focus on a behavioral insight or both. While this rule worked well for public policy journals, in case of articles in economics journals, it became difficult to justify the inclusion of numerous laboratory-based experimental studies that dealt with modelling theoretical non-behavioral issues such as market forms, auctions etc. Thus, the decision rule was tightened to incorporate only those studies as ‘behavioral’ which either, (i) incorporated behavioral insights or, (ii) used an experimental approach for behavioral issues or non-theoretical real world issues or did both. Employing the modified decision rule

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\(^{13}\) For instance certain databases accounted for spelling variations and the plural form of the word, while others didn’t, in which case the key words had to be explicitly specified.
precluded the inclusion of laboratory-based theoretical or technical experimental studies that
did not, in any form deal with behavioral issues\textsuperscript{14}.

There was, however, still the tricky issue regarding the inclusion of studies which, while
quasi-experimental in principle, argued that they involved processes that were almost
equivalent to randomization. Giving such studies the benefit of doubt, and in order to
minimize the statistical equivalent of type I error\textsuperscript{15} these articles were included in the
‘behavioral category’.

Applying the decision rule to the preliminary shortlist resulted in a database of 186 behavioral
studies in the top economics journals and 111 behavioral studies in top public policy journals.
Of the economics articles in the database, more than fifty percent fit the behavioral tag by way
of the methodological criterion; around 18 percent fulfilled the ‘insight criterion’; while 25
percent fulfilled both the method and insight criteria. For policy journals, the ratio was similar,
but with a higher percentage of studies fulfilling the insight criterion (around 30%) and
around 15 percent fulfilling both the method and insight criteria of the decision rule.

Each of these studies was then analyzed, so as to answer the following three research
questions: whether there was pattern of any sort to the rise of behavioral studies, whether this
pattern was mirrored between the two disciplines and in which sectors and geographic
regions did the studies tend to be based. The findings to these questions are presented in the
next section.

\textsuperscript{14} Thus to take an example a study such as this – ‘Durable Goods, Coasian Dynamics, and Uncertainty:
Theory and Experiments’ (Cason & Sharma, 2001) was excluded.

\textsuperscript{15} Type I error is the incorrect rejection of a true null hypothesis (Shadish and Campbell 2001)
IV. Findings and the main themes

The rise of behavioral studies in public policy and economics isn’t a recent phenomenon, as figure 2 demonstrates. It is something that follows cycles of its own, as is evident in periods of rise followed by periods of relative wane, suggesting that perhaps there is something akin to Down’s (1972) issue-attention cycle for academics as well. Three points may be highlighted in this regard. First, until the mid-1990s behavioral studies in policy journals were comparable to economics and even outnumbered the latter in some years. This isn’t surprising, given that the idea of bounded human rationality, the cornerstone of behavioral economics, is also rooted in the works of early public policy scholars, Herbert Simon being the most prominent (see Simon 1955, 1976, 1987). Others such as Verba (1961) and Lindblom (1958, 1959) also noted the inadequacies of the rational model of man in different contexts.

![Behavioral studies in economics and public policy journals over time](image)

**Figure 2:** Behavioral studies in economics and public policy journals over time

Second, around the year 2000 there was a very steep rise in behavioral studies in economics. This rise may be explained by the increased use of experiments in economics, both in the
laboratory as well as natural and field experiments. This in contrast was a period when there were virtually no behavioral studies in public policy. Third, from around 1999 to 2004, the two disciplines appear to be moving in divergent directions, with their peaks and troughs coinciding with one another. It is only from 2006 onwards that the two disciplines again begin to move in similar directions.

Based on this, three distinct phases can be identified in the trajectory of behavioral studies in public policy and economics over the entire time period. Phase I, between 1950 and 1999 is a period when both public policy and economics were moving in a similar fashion with regard to behavioral studies. In fact, public policy scholars appear to have taken the lead with scholars from economics mirroring the trend. Phase II, between 1999 and 2004, the disciplines were moving in divergent directions in their treatment of behavioral studies, with each reflecting Down-esque cycles of its own. Phase III, between 20006 and 2013 reflects a similar trend for both public policy and economics with the latter being at a much higher level overall. This is a period when public policy increasingly begins to adopt experimental methods that go beyond the laboratory. Post 2013, the trend between the two disciplines is hard to conclusively arrive at. Two factors are at play here- first, there is a large increase in behavioral studies in public policy journals. This increase, to a large part is driven by the proliferation of studies that make use of randomized surveying over the internet. This is done using online panels.\textsuperscript{16} Second, it is hard to conclusively establish whether this increasing trend is sustained or begins to show a downswing. This is because the top three public policy and the top four

\textsuperscript{16} The concerns that result from the use of such panels is covered under section 5-Implications and concerns.
public policy journals exhibit similar patterns up until then. In fact as figure 2 seems to indicate, a relative decline in behavioral studies in economics is matched by their increase in public policy around 2015. However, once figures for the articles published until April 2016 are accounted for (figure 5 in appendix), there is a different result altogether. The top three public policy journals, like economics journals, seem to indicate a wane in behavioral studies. The top four policy journals, on the other hand, show an unsurpassed increase in behavioral studies. This result may largely be driven by Public Administration Review running a symposium on ‘Experimental Public Administration’ in its first issue for 2016. Given the absence of information for the rest of the year, it may be premature to conjecture the direction of behavioral studies in public policy.

Sectorial and geographic spread

The geographic spread of behavioral studies is relevant for those studies that had an applied component through either involvement of participants or by being undertaken in a real world setting (laboratory, field or natural). Studies that provided a theoretical exposition of behavioral components or behavioral methodology were not considered for this analysis.

Behavioral studies for both economics and public policy are heavily focused on the United States. This was especially true in the past, as table 3 and 4 indicate, and more so for public policy than economics. In economics journals after 2000, there is a spread in studies towards other European and Asian nations. Post 2010, the number of behavioral economics studies situated in the US is reduced for the first time, however, it still towers over studies in other nations. Among developing countries, the highest number of Asian studies are set in India (eight), followed by Kenya (six) in Africa.
Table 3: Geographic location of behavioral economics studies

<table>
<thead>
<tr>
<th>Year</th>
<th>Europe</th>
<th>US</th>
<th>Asia</th>
<th>South America</th>
<th>Africa</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980-1989</td>
<td>1</td>
<td>2</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1990-1999</td>
<td>3</td>
<td>13</td>
<td></td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>2000-2009</td>
<td>12</td>
<td>48</td>
<td>11</td>
<td>3</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>2010-2016</td>
<td>7</td>
<td>26</td>
<td>10</td>
<td>3</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>89</td>
<td>22</td>
<td>3</td>
<td>14</td>
<td>1</td>
</tr>
</tbody>
</table>

In public policy, on the other hand, until 1999 not a single behavioral study was located outside of the US. This may be rooted in the fact that until then the chosen vehicle of using experiments in public policy was the laboratory. While economists began to utilize field and natural experiments in a wide variety of nations, public policy scholars were slow in catching up. The mushrooming of behavioral studies outside of the US is driven by their ascent in European countries, chief among which are Denmark (twelve studies between 2010-2016), Netherlands (six studies between 2010-16) and UK (nine studies between 2010-2016). While a scattering of Asian and South American nations have been studied, there is still not a single study that deals with the behavioral aspects of public policy in the African continent.

Table 4: Geographic location of behavioral studies in public policy

<table>
<thead>
<tr>
<th>Year</th>
<th>Europe</th>
<th>US</th>
<th>Asia</th>
<th>South America</th>
<th>Australia</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950-1979</td>
<td></td>
<td>3</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1980-1989</td>
<td></td>
<td>5</td>
<td></td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1990-1999</td>
<td></td>
<td>11</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-2009</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010-2016</td>
<td>35</td>
<td>23</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>53</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

A part of the reason for this skewed regional trend in behavioral studies in public policy may be explained by the tendency of the larger discipline of public policy to focus on western countries. In comparison, within economics, development economics constitutes a sub-field
in itself. An offshoot of this has been the osmosis of behavioral studies in developing nations, where they have contributed insights in empirical development economics (Basu, 2014).

Behavioral studies in both economics and public policy have looked at a wide spectrum of sectors (figures 3 and 4) with studies focusing on psychological insights and behavioral interventions featuring prominently in both disciplines. Similarly, studies that look at decision making under risk, uncertainty and those that deal with trust, fairness and satisfaction are a common in both disciplines.

In economics, studies that focus on the financial sector, whether by looking at savings, investment, cash transfers, aid and insurance, feature prominently. Health and education are also important areas of study. Tied to the spread of the RCT methodology in the development sector, studies in economics are likely to focus on issues such as migration, poverty, corruption, natural resources, agriculture, labor and employment (refer figure 6 in the appendix). Another issue particularly salient in behavioral economics studies is that of identity and diversity. Studies that fall in this category are those dealing with race, ethnicity, gender or those looking at representation, discrimination and affirmative action. However, more abstract issues related to individual attitudes, beliefs, values and emotions, find place in public policy journals much more than economics. This may have to do with the nature of the discipline itself. Scholars of management and public administration, starting with Maslow (1943), have stressed on the role of individual attitudes, values and emotions.
Figure 3: Areas of behavioral studies in economics journals
Finally, in addition to the sectors mentioned earlier, disaggregated over other public policy sectors are numerous behavioral economics studies that have to do with crime, policing, parole and judiciary; housing and welfare; youth and children. Some of these behavioral studies, especially those that were based on natural experiments involving governmental action, could well have featured in public policy journals. This suggests, that when it comes to behavioral studies, the two disciplines seem to be showing convergence; public policy through its use of the experimental methodology and insights from behavioral economics, economics through its applications in a public policy context.

In contrast to economics, mapping the decision making behavior of bureaucrats, managers and administrators, is a major point of study for public policy (figure 4). As is performance and performance management through its various forms such as performance-related pay, performance evaluations, feedback and performance information. Participatory studies that look at collaboration and cooperation from a behavioral perspective are also prominent in public policy journals. Studies that seek to explore cases of integration between the public and private sector or distinctions between them are also common. Many behavioral studies in public policy focus on the provision of services, service delivery and the quality of services as a whole, instead of studying them only on a sector-by-sector basis which economics tends to do. Just as for economics many behavioral studies in public policy journals are in the sectors of health and education. In addition, there are behavioral studies on local level governance, decentralization, public service motivation, accountability and transparency.
Figure 4: Areas of behavioral studies in public policy journals
The provision of information and its usage by a variety of individuals is also something that behavioral studies in public policy particularly focus on\textsuperscript{17}.

V. Implications, concerns and real world issues

The previous section showed the cyclical pattern to behavioral studies in the top economics and public policy journals. A noteworthy feature of this was that after 2006 the number of behavioral studies in both disciplines move to a higher overall level. Associated with this was an increase in the number of articles that satisfied the ‘behavioral criteria’ because of the methodology.

This raises four points of concern. First is the question whether ‘method’ alone qualifies for a study to be classified as behavioral (Galizzi, 2014). While this is widely prevalent and something which this paper also conforms to, the fact of the matter is that the experimental methodology, incorporated in the term ‘randomized controlled trial’, is hardly new or novel (James, 2011). This opens the door for bringing in more theoretical clarity to the concept. This is especially essential because behavioral economics, which has been regarded as the vehicle of change for behavioral policy, is itself criticized for its inability to produce a framework that can be easily applied to other circumstances (Shiller, 2005). The findings of behavioral economics are regarded to be connected mostly by embryonic theories that lack the power of orthodox neoclassical economics. Most importantly, there is little agreement about which behavioral findings have the strongest impact and which should be targeted when (Lunn, 2013).

\textsuperscript{17} For a comparative graph of the top sectorial areas of behavioral studies in public policy and economics journals, refer to figure 6 in the appendix.
The second point relates to the issue of experiments itself. While experiments are regarded to have the highest internal validity (Shadish, Cook and Campbell, 2001), this comes at the cost of external validity or generalizability. This means constant experimenting and piloting in different contexts is required in order to be able to generalize results from one study into other contexts. This may be difficult to implement in certain kinds of public policy situations. For instance, behavioral economics studies of incentives in the public sector have focused on responses of frontline staff such as nurses and teachers (see for instance Banerjee, Duflo and Glennerster, 2008; Duflo, Dupas and Kremer, 2011). There is little evidence linking the performance of the vital middle-tier of bureaucrats to public service delivery (Rasul and Rogger, 2013). An important reason for this may be the sheer difficulty in doing so. From a public policy perspective, administrators may oppose random assignment because it means not being able to serve all individuals eligible for a program, thereby raising ethical issues. While experiments may be unbiased by selection effects, they may induce distortion in other ways. An evaluation of a pilot project may not be able to capture systemic effects that would occur if the program were instituted permanently and on a larger scale. Moreover, random assignment could along with changing the nature of the program also affect the clients who seek it (Manski and Garfinkel, 1992).

In addition randomized experiments are associated with problems of getting permission and cooperation, attrition problems, randomization problems and in differences between treatments assigned and treatments delivered (Farrington and Welsh, 2005).

According to Margetts (2011), the relative scarcity of experiments in leading public administration and management journals says as much about the discipline (vis a vis
methodological innovation) as it does about the challenges of the experimental approach. However, she postulates that the barriers identified by scholars related to the experimental methodology (see Bozeman and Scott, 1992) in the past, are now much lower than they were twenty years ago.

The third point relates to the tendency to position studies as experimental so as to increase the credibility of the findings, whether or not they may actually be so. This pattern is visible in numerous studies that form the database for this paper, that termed themselves as experiments or natural experiments because of events they regarded analogous to pure randomization. In this context, transparency in reporting is particularly crucial because a biased estimate of effect may be unquestioningly accepted if it is not possible to recognize the difference between a rigorous and a weakly designed RCT (Boutron, John and Torgerson, 2010). Thus, it is important that researchers pay attention to trial design and implementation, with the communication of results in a way that enables their further use by the research community (James, 2011).

The fourth point relates to the increase in behavioral studies through surveying experiments by use of internet research panels (see for instance Baekgaard and Serritzlew, 2016; James et. al., 2016; Marvel and Girth 2016; Ricucci et al., 2016), some of which, such as CivicPanel project, are university affiliated research panels (Ricucci, Ryzin and Li, 2016). Others, such as Amazon.com’s Mechanical Turk MTurk), are essentially an online labor market in which people receive payment for participating in surveys (Marvel and Girth, 2016). It may be argued that there is room for bias in using such a subject pool as it comprises subjects who self-select themselves into being a part of internet-based surveying. On the other hand, supporters argue that the internet can be a
reliable way to recruit samples and can reduce biases found in more traditional samples (Buhrmester, Kwang, and Gosling, 2011; Gosling et al., 2004). High-quality online panel studies may be more representative than in-person convenience samples which commonly rely on participation by students (Berinsky, Huber, and Lenz, 2012). This raises questions about judging the ‘quality of a panel’ and differences that may result from panels that offer monetary compensation and those that don’t. This may be an arena for further exploration, but is beyond the scope of this paper. For now this paper makes note of the development, as it appears to gain pace especially in behavioral studies in public policy journals.

Before moving to the next section which concludes with a brief discussion of the limitations of this paper, a final point may be made which ties in with the debate that currently rages, regarding the use of ‘nudges’ in public policy. One of the criticisms that is levelled is that regulators and policy administrators who usher in behavioral nudges are, at the end of the day behavioral agents themselves and thus, their judgments may suffer from psychological biases as well (Viscusi and Gayer, 2015). As discussed earlier, numerous studies in public policy are looking at decision making of administrators and managers. This suggests that there is room to go further by mapping those psychological biases that would relate to an administrator or regulator’s use of nudges. Being aware of such biases with respect to ‘nudges’ may help in the design of policy.

VI. Concluding remarks

Through a bibliometric analysis of the top economics and public policy journals, this paper presented results related to the development of ‘behavioral’ studies over time in both the disciplines. It provided reasons for the findings and attempted to position these findings related
to academic writing against real world developments. However, to the extent this analysis is restricted to published journal articles, it may limit to some degree the representation of academic thought it seeks to collate. Moreover, open access sources, some of which may be quite influential such as NBER working papers, were not taken into account. However, it may be argued that by focusing on the published articles in top journals, the aim was to try and map the particular body of thought which may be regarded as critical in academia and which plays a prominent role in driving forward the evolution of the discipline. In addition, a point may also be made regarding the fact that most, if not all, NBER papers result in published studies. This suggests that particularly influential open access writing may find its way in journal articles, albeit with a time lag.

Some of the other limitations of the paper relate to technical and data related constraints. As mentioned earlier, the lack of a separate ranking for ‘public policy’ as a discipline and it being subsumed under ‘public administration’ may suggest that the findings of this paper may be more correctly positioned as findings specific to ‘public policy and public administration’. Another technical constraint is the variance in efficacy of the different search engines that power different journals. Moreover, since this paper relied on key-word searches in creating a preliminary shortlist of articles, there is a danger that the results reflect a restricted universe of actual institutional thought and knowledge - one that is circumscribed by the key search terms that were used. In order to counter this and the varying efficiency of different search engines, the key words used were made as broad as possible, encompassing variations in spellings and form. Another key limitation of the approach stems from the subjective element involved in judging whether a particular article satisfied the behavioral criterion for the purposes of this study. To counter this,
a broad decision rule was specified. Despite that, there still exists the small probability that certain articles slipped through the gaps because of the choice of key-words or were mistakenly classified as behavioral studies.

Finally, the underlying assumption of this paper has been that the prominence of behavioral dimensions in economics and public policy is reflective of and reflected by academic writing on the topic. However, this assumption is weakened in face of the fact that published journal articles are often influenced by factors other than research interests and real world relevance. Publishing and acceptance trends as well as grant-funding proposals linked to agencies focused on certain areas may shape academic writing. In particular, the implications of an increasing influence of funding grants on academic agenda is something worth exploring in future research.

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[online] Available at:


pp.1-21. Available at:


## Appendix

**Table 5:** The top ten public policy journals over time from different sources (as per author’s calculations)

<table>
<thead>
<tr>
<th>Rank</th>
<th>SCImago Journal rank (SJR)</th>
<th>Web of Science</th>
<th>Google Scholar Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Administrative Science Quarterly</td>
<td>Journal of Public Administration Research and Theory</td>
<td>Public Administration Review</td>
</tr>
<tr>
<td>3</td>
<td>Journal of European Public Policy</td>
<td>Journal of Policy Analysis and Management</td>
<td>Public Administration</td>
</tr>
<tr>
<td>4</td>
<td>Governance</td>
<td>Governance</td>
<td>Policy Studies Journal</td>
</tr>
<tr>
<td>5</td>
<td>Educational Administration Quarterly</td>
<td>Journal of European Public Policy</td>
<td>Governance</td>
</tr>
<tr>
<td>6</td>
<td>Public Administration</td>
<td>Journal of European Social Policy</td>
<td>Science and Public Policy</td>
</tr>
<tr>
<td>7</td>
<td>Journal of Policy Analysis and Management</td>
<td>Public Administration</td>
<td>Public Management Review</td>
</tr>
<tr>
<td>8</td>
<td>Public Administration Review</td>
<td>Public Administration Review</td>
<td>Environment and Planning C-Government and Policy</td>
</tr>
<tr>
<td>9</td>
<td>Human Resources for Health</td>
<td>Journal of Social Policy</td>
<td>The American Review of Public Administration</td>
</tr>
<tr>
<td>10</td>
<td>Journal of Social Policy</td>
<td>Regulation and Governance</td>
<td>International Review of Administrative Sciences</td>
</tr>
</tbody>
</table>
Table 6: The top ten economics journals over time from different sources (as per author’s calculations)

<table>
<thead>
<tr>
<th>Rank</th>
<th>SCImago Journal rank (SJR)</th>
<th>Web of Science</th>
<th>Google Scholar Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Quarterly Journal of Economics</td>
<td>Journal of Economic Literature</td>
<td>NBER Working Papers</td>
</tr>
<tr>
<td>3</td>
<td>Econometrica</td>
<td>Journal of Finance</td>
<td>CEPR Discussion Papers</td>
</tr>
<tr>
<td>10</td>
<td>Handbook of Labour Economics</td>
<td>Journal of Economic Geography</td>
<td>Review of Economic Studies</td>
</tr>
</tbody>
</table>

Figure 5: Behavioral studies in economics and public policy journals from 1940-2016
Figure 6: Selected areas of behavioral studies in economics and public policy journals