COMPARING RESISTANCE TO OPEN DATA PERFORMANCE MEASUREMENT: PUBLIC EDUCATION IN BRAZIL AND THE UK

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Much is known about governmental resistance to disclosure laws, less so about multi-stakeholder resistance to open data. This study compares open data initiatives within the primary and secondary school systems of Brazil and the UK, focusing on stakeholder resistance and corresponding policy solutions. The analytical framework is based on the ‘Three-Ps’ of open data resistance to performance metrics, corresponding to professional, political, and privacy-related concerns. Evidence shows that resistance is highly nuanced, as stakeholders alternately serve as both principals and agents. School administrators, for example, are simultaneously principals to service providers and teachers, and at once agents to parents and politicians. Relying on a different systems comparison, in-depth interviews, and newspaper content analyses, we find that similar stakeholders across countries demonstrate strikingly divergent levels of resistance. In overcoming stakeholder resistance – across socioeconomic divides – context conscientious ‘data-informed’ evaluations may promote greater acceptance than narrowly ‘data-driven’ performance measurements.

INTRODUCTION

The explosion of open data informed initiatives – multilateral efforts such as the Open Government Partnership or rankings such as the Open Data Index – is representative of a historic policy movement towards greater transparency, responsiveness, and accountability. Yet outcomes have not yet fallen in line with expectations (Almirall el Lun 2016). Open data, broadly defined as data and content that can be freely used, modified, and shared by anyone, for any purpose, has met with considerable stakeholder resistance and citizen perplexity. Yet the resistance of suppliers, subjects, and consumers of open data has received little targeted attention within the scholarly literature on public service provision. There may be good reason for this: in the multi-stakeholder universe of open data policies, principals are often agents and agents principals. Incentive structures are less easily discerned than within the literature on resistance to transparency and freedom of information, where the universe is typically divided into advocates and resisters (Roberts 2006; Darch and Underwood 2010; Hood 2010; Berliner 2014; Michener 2015a). What types of policy-specific resistance are challenging open data initiatives and how serious are they? Policy-specific analyses of stakeholder resistance can help governments save scarce resources by pinpointing points of contention and potential remedies.

This article analyses progress and resistance towards governmental data transparency initiatives in the primary and secondary education sectors of Brazil and the UK. More specifically, it focuses on school performance and student personal data, providing a broadly encompassing analysis of resistance to open data performance measurement and assessing corresponding palliative measures. The literature makes clear the ubiquity of stakeholder anxiety towards open data-based public evaluation (McGinnes and Elandy 2012), yet has not coherently elucidated how anxiety translates into different sources and forms of resistance across countries.

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This article’s analysis is based on ‘Three-Ps’ of open data resistance, identified during extensive field research on data transparency initiatives in the public education sectors of Brazil and the UK: professional resistance, due primarily to workplace-related implications of data-driven performance indicators; political resistance bred of fears surrounding disclosures and inadequate technical capacities; and resistance based on concerns regarding personal privacy.

The research conveyed herein represents over 60 interviews (detailed in an online transparency appendix), as well as content analyses on media coverage, and a considerable survey of the extant literature. Research adhered to a ‘most different systems’ (Przeworski and Teune 1970) comparison between Brazil and the UK, which illuminates how similar stakeholders in very different national contexts exhibit comparable rationales of resistance towards open data-based policy evaluations.

In analysing different contexts – two countries known as much for their shared commitments to open government as for their democratic and economic divides – this article serves as a first foray into building contextually specific hypotheses about forms of resistance to a new administrative paradigm and how resistance may best be overcome. At its most general, collected evidence suggests that ‘data-informed’ approaches to implementing open data policies in education should displace those that are data-driven. While data-informed approaches take into account contextual variables in addition to data, data-driven approaches tend to treat data as an end rather than a means. At its most specific, the evidence presented herein points to inverse relationships in stakeholder resistance across two countries that vary on key indicators. Professional and personal privacy resistance are more salient in the UK and less so in Brazil, whereas the opposite holds true for political forms of resistance. These findings highlight trade-offs germane to open data-mediated policies (Davies and Bawa 2012; Singer 2014). For instance, citizens in Brazil appear less likely to hold schools and governments to account, as well as more likely to trade off personal privacy for access to performance-enhancing technologies.

This article proceeds as follows. The first section briefly outlines the empirical reality and theoretical logic of resistance to open data in the educational sector. The research design, including interviews, content analyses and methods of data analysis are examined in the second section. The third, fourth, and fifth sections analyse the logic, evidence, and implications of the ‘Three-Ps of resistance’ towards open data – professional, political, and personal privacy concerns. The final section summarizes findings and elucidates pathways for future research in this area.

SPECIFYING SOURCES OF RESISTANCE: OPEN DATA AND EDUCATION

Public sector open data is widely viewed as a strategic public asset (Uhlir 2004; Gurin 2015). Open data evangelists and advocates of open government list a host of positive social, political, and economic externalities, such as greater democratic accountability and participation, as well as innovation in the private and public sectors (OECD 2006; McKinsey & Company 2013). Yet scholars and observers have increasingly noted open data’s slow uptake and poor conformity with better practice format-related principles (see for example, Thurston 2012; de Kool and Bekkers 2015; Godoy 2015).

On the adoption front, progress has been slow. Employing a strict ‘open definition’ (see below) and surveying 15 categories of datasets in 92 countries, the 2015 Open Data Barometer results indicate that just 10 countries have produced nearly half of all ‘open’ data sets. Open Data Barometer’s ‘open definition’ is, admittedly, difficult to fulfil: datasets must be
online, free, open-licensed, machine-readable, and available in bulk. But other measures show similarly disappointing results. The 2015 Open Data Index, for example, finds that across 13 categories of data (e.g. transport) and 122 countries, ‘open’ datasets comprise only 11 per cent of total datasets available (Open Knowledge Foundation 2015).

Education open data, which encompasses preschools, elementary schools, and universities, is a noted laggard. The 2015 Open Data Barometer Report found that educational data were placed 10th out of 15 different categories of policy-specific open data, behind datasets on crime, elections, trade, and public transport, among others. Yet evidence points to current efforts at improving the transparency of education data: of 70 countries participating in the Open Government Partnership, we found that 28 countries have at least one commitment related to education (summaries available in the transparency appendix).

In the public primary and secondary education sectors, professionals may be more likely to resist quantitative forms of evaluation when metrics do not take context into account (Raab and Bellamy 2005; Dixon et al. 2013). The use of new technologies may reinforce this resistance due to the characteristics of computer-mediated transparency, which Meijer (2009) describes as ‘unidirectional’ (low social interaction), ‘structured’ (quantitative bias), and ‘decontextualized’ (comparisons and rankings).

Resistance to new forms of transparency is hardly surprising. The literature on transparency and privacy conveys that fears associated with ‘blame or shame’ drive aversions to transparency.

On the one hand, parents and students seek to avoid the invasiveness and potential shame that poorly designed or breached public datasets may bring about. Sensitive student data may be unwittingly publicized, bringing to light data on special education needs and suspensions or expulsions, among other potentially compromising information. Details that go unrecognized by administrators make it easier to identify students – notwithstanding anonymization (Narayanan and Shmatikov 2010; Ohm 2010). Although de-identification techniques have made rapid advances in big data processing, anonymization and ‘release-and-forget’ open-data models remain susceptible to reversals (Ohm 2010). Privacy concerns have always played a role in curtailing openness, at times more legitimately than at others (Meijer et al. 2014; Ruiz 2014).

On the other hand, the literature on bureaucracy (Weber 1946; Michael 1982; Pozen 2010), transparency, and freedom of information establishes how officials shirk disclosure (when they can get away with it) in order to minimize opportunities for blame (Fox 2007; Hood 2007, 2010; Worthy 2015). Resistance towards openness and disclosure is germane to organizational politics, bureaucracy, and government (Roberts 2005, 2006; Hood 2010; Michener and Bersch 2013; Sagar 2013).

Open data expands the avenues for potential blame on at least three levels. First, open data exposees performance, and thus potential performance failures. Recent research undertaken in the US confirms that voters do in effect punish those responsible for under-performing schools (Holbein 2016). Second, open data may expose technological inadequacies. Are the technologies and technical competence of administrators effective enough to protect personal identities or prevent teachers, administrators, or politicians from suffering embarrassments? As noted, anonymization technologies are not always failproof (see, for example, Ohm 2010). Politicians and administrators may be rightly wary of new technologies, especially when they involve new modalities of thinking (Sanders 1980; Lapointe and Rivard 2005; Zuiderwijk et al. 2012). Slipshod data-analysis may lead to poorly conceived, low-quality datasets (Worthy 2015). Finally, by generating
greater publicity of educational outcomes, open-data initiatives invite greater scrutiny and corresponding criticism of education policies writ large.

As alluded to earlier, the diversity of stakeholders in education policy – technology and educational resource providers, politicians, administrators, teachers, parents, and students – renders the simple principal–agent model of accountability less tractable. Administrators serve as both the agents of parents and politicians, and the principals of service providers and teachers. Teachers are the agents of administrators, but teachers can act as principals during moments of collective bargaining. Understandably, the diversity of roles and perspectives means that generating uniform acceptance of open data initiatives is particularly challenging. As Lapointe and Rivard (2005) point out, resistance tends to be stronger when technology affects groups (i.e. stakeholders) in different ways as opposed to exerting uniform effects across organizations.

Whereas scholars and citizens of developed countries mainly associate resistance to school open data with fears surrounding ‘performance’ or the orientation of policy, the reality in most countries is that politicians and administrators avoid it for less innocent reasons. Exposing performance may invite questions about investments, which can raise the spectre of corruption and rent-seeking, problems that have long been the scourge of educational sectors (Tanaka 2001; Chapman and Lindner 2016). Fortunately, open data promises to promote greater accountability by strengthening the position of ‘outsiders’ – parents, the local community, the private sector, and educational experts (Meijer 2013). While the strengthening of outsiders bodes well for reducing corruption, it also implies a struggle. ‘Insiders’ experience relative losses of power – a proposition examined in the coming pages.

As this brief introspective into the logic of open data resistance in the education sector has highlighted, professional, political, and personal privacy concerns loom large. The following section explicates the methods employed to research these concerns.

RESEARCH DESIGN

This article approaches the dependent variable of the study – resistance to open data in the public primary and secondary education sectors – qualitatively, in line with the inductive hypothesis-generating intent of the research. Here we define ‘resistance’ loosely on a continuum, from uneasiness to full rejection, rather than in line with absolute definitions.

The original purpose of the research was to understand general reactions to data-based initiatives among stakeholders in the public school systems of Brazil and the UK. Questions focused on reactions to inputs (e.g. costs and processes of supplying data), outputs (performance metrics, rankings) and outcomes. Cognizant of social desirability biases towards ‘positive speak’ in relation to a new ‘transparency’ paradigm, researchers maintained a neutral stance vis-à-vis the effects of open data in public education. Following initial interviews, resistance came into focus as a salient theme and dependent variable. Researchers correspondingly sought to deepen their understanding of this theme through interviews, and during this period the three loci of resistance – the Three-Ps – came into focus. Interviews also brought to light more positive aspects of open data, many of which are touched upon in this article.

Semi-structured interviews with approximately 60 stakeholders divided about equally between Brazil and the UK comprise the bulk of the empirical evidence presented, and citations herein are linked to an online transparency appendix. To maintain relative anonymity, few details regarding interview subjects are given in the online appendix.
but are available upon request. Interviews took place in 2013, 2014, 2015 and 2016, either in person or by voice communications devices. Administrators and politicians constituted about half of all interviewees. In the UK, a freedom of information request helped secure lists of school headteachers and governors. A total of 1,000 emails were sent in a regionally representative manner to each list. All told, six headteachers and six governors agreed to be interviewed. In Brazil, researchers contacted state secretaries of education. Of 26 secretaries, 16 were interviewed and most provided contacts for headteachers and teachers. Interestingly, Brazilian teachers only agreed to be interviewed with the consent of senior administrators. The remaining interviews focused on members of civil society, including parents, hackers, private sector data entrepreneurs, and journalists. Although parents were interviewed in the UK, Brazilian parents notably refused to speak (even anonymously) on the grounds that their children might be targeted for retaliation. In addition to interviews, participant-observation took place during open data events in Brazil, and over Twitter for events in the UK. For example, during the 2014 Education Data Challenge, the event hashtag was used to interact with participants during the duration of activities (Zimmer and Proferes 2014).

Content analyses were undertaken to better understand the public salience of open data initiatives in the primary and secondary education sectors, as well as resistance, and media tone. Two researchers independently coded all coverage on education for four years in two leading newspapers, Brazil’s *Estadão* and the UK’s *The Guardian*. The idea was to provide an illustrative analysis of two large, influential publications that harbour well-known commitments to using and reporting on open data. This two-newspaper analysis certainly limits the generalizability of inferences, and while the unmeasured ideology of these publications may have affected the colour of coverage, both newspapers are considered moderate, if not far from any ideological extreme. Pilot searches indicated that the broadest sample of articles were indexed under the terms Basic Education Development Index (IDEB) in Brazil and the General Certificate of Secondary Education (GCSE) in the UK. Independent double-coding followed by the calculation of kappa coefficients ensured robust tests for intercoder reliability, all of which exceeded acceptable thresholds of 0.8 (0.969 for the *Guardian*, 0.889 for the *Estadão* – p < 0.001)

In selecting the cases of Brazil and the UK, the research conformed to a ‘most different systems’ comparative approach (Przeworski and Teune 1970). The educational systems of the UK and Brazil vary in terms of key explanatory variables, some of which are listed in table 1.

While this study’s comparison is approximate as opposed to controlled, the idea behind a most different systems approach is to better understand shared motivations for resistance across different contexts. While to most appearances dissimilar, these countries do share commonalities with respect to a basic threshold measure of the dependent variable of this study – both have embraced open governmental data (Michener 2015a; Worthy 2015). As a case in point, both represent two of the six countries to have chaired the 70-odd country Open Government Partnership, an initiative that was co-inaugurated by Brazil and the US in 2011. Both countries also boast advanced transparency infrastructures relative to their socioeconomic and political conditions (on Brazil, see Michener 2015b, pp. 86–90).

The UK government launched their open data initiative in January 2010 with the support of Sir Tim Berners-Lee. The original intent was to improve public services and increase economic growth by opening up government data (Davies 2010). In Brazil, the publication of the Freedom of Information (FOI) Law in November 2011 was accompanied by a new governmental data portal, and the FOI law includes provisions for citizens to receive data
### TABLE 1  *Brazil and United Kingdom education system differences*

<table>
<thead>
<tr>
<th>Key indicators</th>
<th>United Kingdom</th>
<th>Brazil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of first school performance assessment model</td>
<td>1990</td>
<td>2007</td>
</tr>
<tr>
<td>Average years of schooling (UNDP)</td>
<td>13.1 (2014)</td>
<td>7.7 (2014)</td>
</tr>
<tr>
<td>Public education system characteristics</td>
<td>Centralized budget, quasi-market, public and private management</td>
<td>Decentralized (federation) budget, public management</td>
</tr>
<tr>
<td>System size (children enrolled, number of schools)</td>
<td>8.4 million children enrolled in 24,000 schools (2015)</td>
<td>37.8 million children enrolled in 190,000 schools (2015)</td>
</tr>
<tr>
<td>Private schools (% of children enrolments)</td>
<td>7% (2015)</td>
<td>18% (2015)</td>
</tr>
<tr>
<td>Annual investment ($US per student)</td>
<td>$10,000 (2013)</td>
<td>$2,600 (2013)</td>
</tr>
</tbody>
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in machine-readable and non-proprietary formats. Brazil’s Transparency portal, launched in 2004, has been widely hailed as an international innovation, winning an award from the World Bank (Breitman *et al.* 2012).

**PROFESSIONAL, POLITICAL, AND PRIVACY CONCERNS SURROUNDING EDUCATION OPEN DATA**

To reiterate, this study delineates and analyses three strains of resistance towards open data in the public primary and secondary education sectors of Brazil and the UK: professional, political, and personal privacy concerns. The remainder of this article examines these three strains of resistance in sequence, comparing the UK and Brazil.

**Professional resistance**

Before open government data emerged as an important worldwide agenda, school performance transparency initiatives had already focused on harnessing the power of comparison. If quality indicators showed negative trends, it was expected that politicians and parents would seek accountability from administrators and teachers (Weick 1982; Glennerster 1991). Similar prerogatives persist. The Open Data Strategy for the UK Department of Education (Data.gov.uk 2015) states: ‘more data will help citizens to compare outcomes and challenge them to improve and increase efficiency’. Recent open education data projects in Mexico, Kenya and Tanzania mimic this approach as a means of empowering parents and the local community as agents of change (Verhulst and Young 2016).

With the growing pervasiveness of computers and lower costs in data processing, government public disclosure has empowered policy stakeholders – the media, software vendors, nongovernmental organizations, parents and school administrators, among others – to reuse, modify, and share school performance information. Yet open data’s versatility and utility have had several unintended consequences.

Most critically, the media have imbued open data-based performance metrics with a ‘league tables quality’. As a result, school rankings have become the stuff of sensation (Dixon *et al.* 2013). Due in part to negative rankings and corresponding stigmas, schools
in poorer areas have found it difficult to retain qualified professionals. In essence, the ‘naming and shaming’ function of indexes (Kelley and Simmons 2015) not only has an ‘esteem’ effect, but also appears to encourage high turnover – the flight of qualified professionals. Professional resistance to open data is indirect and direct: teachers and administrators flee underperforming schools and criticize the decontextualizing nature of rankings.

During the research for this study, one UK school headteacher (Mountstephen 2013) opined:

The league tables are misleading, divisive and unhelpful. They seek to compare organizations that are working in very different circumstances, effectively doing different jobs, as if they were the same. They make it very difficult for those schools that are at or near the bottom to develop the trust and support of their local communities, which is something we are all in need of if we are to work effectively.

A similar phenomenon occurs in Brazil. In an interview, the director of an education-focused nongovernmental organization (Paiva 2014) details:

Some education networks may have what is called ‘decanter schools’. These are periphery schools that deal with students with low socioeconomic profiles, huge learning deficits, and who are often ‘expelled’ from other schools. Teachers avoid working on these units because the rankings always show them to be the worst in the region.

Education professionals interviewed for this study complained that politicians placed a higher value on accountability and data in-and-of-itself than genuine learning improvement. During field research, one teacher summarized a widespread sentiment (Loane 2014):

So I find it really hard to accept the notion that collecting more and more data and making it more and more available will improve the life chances of individual children. I do not wish to sound unkind, but dare I suggest – that such an attitude represents the hubris of the spreadsheet generation?

These sorts of comments raise questions about how open data performance measures fit into a broader public discourse and, most consequentially, how the salience and tone of news media portrayals help shape this discourse.

In order to obtain a notion of how prominent news media outlets cover and frame school performance data in both countries, this study analysed coverage of education in the Guardian and the Estadão newspapers from 2011 to 2014. Collected evidence confirms inferences from interviews, namely, that indicators tend to be presented as simplistic rankings with little contextual background. One probable end effect is that rankings ratchet up pressure on administrators and teachers, impelling them to ‘teach to the test’ rather than focusing on more holistic or deeper forms of learning (Karsten et al. 2010).

Coders found that school rankings were cited in 18 per cent of all news items collected (see figure 1). Of these items, approximately one in four articles illustrated a negative bias, meaning that they emphasized issues such as gender or ethnic gaps, schools and regions with the worst results, or problems in the process of evaluating schools. By contrast, less than one in ten articles had a positive bias, such as highlighting better performers, innovative learning, effective teaching, or progressive administrative practices.

The Guardian’s coverage tended to focus more on the question of professional resistance to rankings, whereas the Estadão gave greater salience to the political implications of results (see figure 2). The predominance of negative frames may suggest a self-reinforcing phenomenon, whereby professional resistance is hardened by its very publicity (Trussler and Soroka 2014). Worthy of note is that the coverage of public education performance was more voluminous in the UK – unsurprising given higher rates of state school enrolment.
Media coverage of rankings is only one source of pressure for education professionals. Several software applications in the UK – all of them available on the government portal\(^2\) – help parents in the school selection process. These applications primarily serve the real estate market. One application helps parents locate housing near the best-ranked schools.\(^3\) Another analyses boroughs to compare school performance and crime rate indexes.\(^4\) As of December 2015, 17 out of 26 applications denominated ‘education’ in the UK government open data portal employed school performance rankings. These applications will not be useful to everyone. As a founder of Open Data Manchester pointed out during an interview (Tait 2013):

Some people in poorer areas may have badly performing schools but do not have the means to go to a good school in another area. So there is a debate surrounding the idea of whether providing more information will empower everyone equally.

During the first public education hackathon held in Brazil, in 2013, groups created several applications focusing solely on school rankings. Promisingly, the winner was a ‘contextual performance indicator’ (Open Knowledge Foundation 2013). The idea was to enable parents to compare the past records of their schools, as well as comparing schools experiencing similar contextual challenges. The idea behind such a contextual strategy was to enable more nuanced benchmarking, as well as encouraging greater collaboration among schools (Baars et al. 2014). In an interview, Daniel Cara (2014), General Coordinator of the Brazilian National Campaign for the Right to Education, explains why the solution added value:
We defend the idea of an education evaluation system that includes indicators such as academic results, but that also includes process indicators such as school management, socioeconomic levels of registered families, infrastructure … a set of data that indeed give a notion as to quality, which is a very complex and difficult subject to measure.

Interestingly, stakeholders such as headteachers and local education officers asserted that school performance information should be mainly for internal use, a means of forestalling the harm that simplistic statistics might cause. As Döring and co-authors (2015) have shown, educational administrators tend to adhere to conditional logics of disclosure. As São Paulo state’s Secretary of Education stated during an interview (Voorwald 2014):

I think it is not enough to just open the data; often, the context needs to be explained, otherwise we run the risk of a superficial judgment or, even worse, making the wrong decision … our data are better used in internal meetings with parents, local community and other civil society actors.

A UK school headteacher offered the authors a similar argument (Mountstephen 2013):

I personally see no benefit to anyone in crudely ranking schools, and would not have this information presented in this way for anyone’s usage, no matter how it is locked away on websites. All this data is of little use to parents when choosing a school for their child or when seeking to keep up with how their child’s education is progressing. A conversation and a context does that.

Any ‘data-informed’ approach should speak to data as well as context. Data may encourage teachers and parents to engage in school life, stimulating discussions about problems and potential solutions. For example, UK school governors – a voluntary network dedicated to supporting school management (Farrell 2005) – use open data to discuss financial and performance indicators with headteachers. In essence, data typically serve as a point of departure. As one UK School Governor (Abrams 2013) pointed out during an interview:

Data is just a starting point for conversations and collaboration. The performance table is one aspect that adds to the knowledge of the local community about the local schools. Data will not tell you anything about teaching and learning. It can help you evaluate in the end but will not do the most important bit.

The products of educational software businesses are also helping to start discussions. In Brazil, a tool launched in 2013 by the private company QEdu, with the financial backing of an NGO, employed open data from public primary and secondary schools to help academic researchers and school professionals find performance strengths and weaknesses. During an interview, one of the creators (Faria 2013) insisted that the tool helped convince teachers and school directors that data transparency need not be used to assign blame but rather to improve their daily work.

Some people have the vision that open data is an easier means of assigning blame … we show that transparency is also a means of supporting and improving service efficiency, to reveal problems that should be addressed within schools.

While professional animosities towards open data-inspired performance metrics may raise significant cause for concern, positive feedback effects – typically in the form of input and conversations – do exist. Using data as a contingent complement to decision-making processes, stakeholders can initiate conversations that lead to improved collaboration.

**Political resistance**

It is no straightforward task to disclose data that are complete, primary, timely, accessible, machine-processable, non-discriminatory, non-proprietary, and licence-free, as advocates
of the ‘Eight Principles of Open Government Data’ entreat. This task requires capable and willing professionals and investments in technological and organizational resources (Denis and Goëta 2014). It also requires a cultural transformation from ‘closed and unilat-
eral’ to ‘open and collaborative’.

As an official from the Brazilian Education Ministry (Cheng 2014) noted during an interview:

In my opinion, two factors restrict transparency policies: the culture of non-disclosure and the quality of data. Regarding the latter, public agents are resistant to releasing information that is unreliable. Data should be better structured, classified, and analysed to make transparency technically and politically possible.

Whether due to divergent levels of bureaucratic capacity or political will, the UK trumps Brazil in terms of the sheer volume of education open data sets released. As of mid-2015, the UK had released 2,761 datasets tagged with ‘education’, constituting 11.2 per cent of total public datasets available. By comparison, Brazil had released 510 sets, representing 6.3 per cent of its total open data inventory.

Analysing these education datasets against Tim Berners-Lee’s five star open data schema (Berners-Lee 2006), we found that neither datasets in the UK nor Brazil fare well. The UK and Brazil score 67.5 per cent and 51.8 per cent, respectively, in terms of non-structured data formats published as ‘open data’ by the government. Non-structured data formats (such as PDF, ZIP and HTML files) increase the difficulty of accessing, processing, and reusing data in an automated fashion (see figure 3).

It appears that governments frequently adhere to transparency norms in theory while the information they provide is impossible to use or interpret in practice. This is what Jonathan Fox (Fox 2007) refers to as ‘zombie’ or ‘opaque’ transparency. Indeed, as of the end of 2015, Brazil was behind in its OGP commitments on education owing to what Brazil’s OGP Rapporteur deemed ‘low comprehension of the basic principles of open data’ (Steibel 2014). One Brazilian audit office stated that ‘most of the education datasets cannot be considered open because they are difficult to read by automated applications or contradict principles related to the Access to Information Act’ (Tribunal de Contas da União 2015).
As one Brazilian data journalist (Saldaña 2014) stated in an interview:

Open data from the education census is practically indecipherable to a journalist. We need to ask help from technically savvy friends in order to analyse them. And if you are in a newsroom with thousands of demands, sometimes you cannot use this data to write a story.

The private sector is often much better equipped to deal with data than the general public, much less students, parents, and educational administrators. One British Civil Society Organization Director (Mulqueeny 2014) views the essential advantage of the private over the public sector to be the presence of dedicated technical teams. The most salient problem for all stakeholders, of course, is that basic technical capacities are scarce. As the Secretary of Education for the Brazilian state of Santa Catarina affirmed during field research (Deschamps 2014):

We have a lot data available here. The problem is who analyses it and the training to do that. I have financial difficulties in retaining a team that can effectuate this data analysis and bring us a report in a digestible format.

In this sense it is difficult to distinguish between political resistance and resistance as an indirect effect of limited capacities. Whereas traditional disclosure depends preponderantly on political will and leadership, making resistance more discernible, open data disclosure may elude the most well-intentioned leaders. Under-capacitation in the public sector can be the result of market competition, wherein the private sector outbids the public sector for a limited pool of programmers; or limited capacities can simply be the result of underinvestment by leaders or collaboration failures. On the one hand, Brazil’s comparatively inferior performance relative to the UK might be explained by per capita spending on public education, which is nearly four times smaller than in the UK. These numbers suggest a deficit of capacities. On the other hand, fully 12 out of 16 state secretaries of education interviewed for this study declared that they had no plans for releasing education open data. These assertions suggest a political rationale. Yet if resistance is political, is it legitimate to assume ‘subterfuge’ as in bad faith, or simply an unwillingness to make commitments due to financial constraints? These important questions are not easily answered.

Advocates often argue that ‘where there is a will, there is a way’; authorities can make up for resource- and knowledge-based deficits through collaboration and cooperative agreements. Research undertaken for this study confirms that UK and Brazilian education authorities are piecing together new collaborative arrangements with civil society specialists and businesses in order to make up for technical deficits (Tinati et al. 2012). Private companies, volunteer computer programmers, or ‘civichackers’ are called to help structure, analyse, and disclose government data in order to help improve public services.

One Brazilian company director offered the following explanation to the authors (Oliveira 2014):

We were waiting for the government to release education data and it was very late. So we offered volunteer help and found that the department didn’t have people to do this data analysis work. We signed a cooperation agreement and after one month they finally released the information to society.

In Manchester, UK, hackers helped local authorities structure and map school data, crossing demographic statistics with educational outcomes. In so doing, hackers were able to help authorities identify areas in greatest need of new schools; and the initiative resulted in a public portal for local government datasets. As the Open Data Manchester group founder (Tait 2013) asserted during an interview:

We place code-fellows or developers with local authorities to help them identify data that can be open; to understand the data these organizations have and structure them to give context. At present, there is a massive
downsizing of local authorities so they see the sharing of data as a way to allow them to retain a certain level of service.

At the federal level, the 2014 Education Data Challenge events provide a further example. In the UK, a total of 82 Challenge projects were submitted and the winner took home US$75,000, paid by a private sponsor. Similarly, the Brazilian federal government organized an Education Hackathon with the intent of creating innovative solutions using open data. A total of 38 computer programmers worked on different products during a 48-hour non-stop event. These events suggest that the need for bureaucracies to ‘do more with less’ may put the onus on administrators to attract private partners by strengthening cultures of disclosure.

An important question within this context is the extent to which the make-up of student populations in each country influences political resistance. Brazil has 11 per cent more students in the private system than the UK, which may influence both the extent of political resistance and the capacity to make good on commitments. One might hypothesize that a large segment of affluent parents in Brazil – those with the time, knowledge, and social influence to insist on greater political compliance with emerging norms (including open data) – tend to opt out of the Brazilian public system. This missing constituency may leave authorities with greater latitude to skimp on commitments.

Privacy concerns
Open data advocates argue that personal data-sharing must follow different principles of openness due to the regulation of individual rights. As Tim Davies (2012) explains:

> The idea that government should maximize the value of the data it holds has been well articulated in open data policies. However, the open data movement has always been pretty unequivocal on the claim that ‘personal data’ is not ‘open data’.

Similar to personal health information, some types of education data can be intensely personal, critically important for policy evaluations, and at once vulnerable to breaches and inappropriate uses. The US Software & Information Industry Association estimates the current value of the kindergarten to grade 12 market at a staggering US$8 billion. Yet there are considerable trade-offs between enhanced services and privacy.

The UK experience with student data demonstrates the potential for controversy surrounding privacy. In 2012 the government partially opened the National Pupil Database (NPD) ‘for a wider range of purposes than currently possible, in order to maximize the value of this rich data’ (UK Parliament 2012). The NPD contains information about gender, ethnicity, first language, eligibility for free school meals, special educational needs, and detailed information about pupil absences, suspensions and expulsions. This database is managed by the Department of Education, which examines each request for database access in order to assess its match with pre-established ‘release criterion’ (GOV.UK 2015). Most requests for access came from universities and research institutes, but 13.4 per cent of requests came from businesses (see figure 4).

Activists found that the NPD was being used for marketing purposes and argued that ‘parents and pupils themselves are not sufficiently aware of the way the data is being shared with third parties’ (Solon 2014). The government cancelled its plan to fully open the National Pupil Database after it became clear that technologies to render identities anonymous had been cracked. A group of teenage programmers, invited to peer-review data security, ‘were able to identify both themselves and colleagues and pull a huge amount of sensitive information from the dataset’ as the group coordinator affirms (Mulqueeny 2012).
FIGURE 4 Requests for National Pupil Database

In contrast to the UK, Brazil is in the early stages of contemplating privacy rights. The Brazilian government only regulated student data-sharing with third parties in 2014, and the issue received little attention from civil society actors: in 10 months only 23 requests were submitted to access the database, mostly from universities and research institutes (INEP 2015).

Unsurprisingly, then, interviews for this study indicated that local authorities in Brazil routinely trade student data for access to new learning technology products. In one instance, public school students received free licences for a learning product in exchange for their personal data. The product helps prepare students for national tests and progress can be monitored online by family and teachers.

According to the company, this solution has already been deployed in more than 50 per cent of Brazilian public high schools – in exchange for the school records of more than two million students. As a company representative (Nakandakari 2014) explained during field research:

Platforms that use artificial intelligence need a lot of people using them, interacting with them, and consuming the contents that are available. So we opened the platform for all Brazilian public school students. This led to a database of more than two million registered students, and eleven local education departments supporting the project and sharing their student and school database with us.

Surprisingly, local authorities have not insisted on the use of this data to re-evaluate education policies. Equally surprising is the company’s avowal that it will not share data with the public because it considers it a strategic private asset.

Clearly, the majority of Brazilian students, parents, and educational professionals who benefit from analytics would not have access to these tools had they not sacrificed a measure of privacy. Attitudes in the UK are strikingly divergent, as British citizens ostensibly place a high premium on the privacy of their personal data.

CONCLUSION

Taking the primary and secondary public education systems of Brazil and the UK as its case study, this article has explored resistance to open data performance measurement. The analytical framework relies on the ‘Three-Ps’ of resistance to open data policy, which emanate from concerns that are professional, political, and privacy based. Open data initiatives continue to transform the provision of public services by inverting information asymmetries and corresponding authority structures. Education is among the policy domains
most dramatically affected by transformation. Yet despite the fact that policy transformations virtually always give way to new forms, loci, and logics of resistance, relatively little systematic attention has focused on resistance to open data performance measurement.

Sources of resistance are hardly obvious. Unlike the traditional politics of disclosure, where advocates and resisters abide by clear principal–agent relationships, stakeholders in the education open data ecosystem may find themselves alternately in the role of principal to one group of stakeholders and agent to another. Moreover, stakeholders are often reluctant to appear unsupportive of a new, modern administrative paradigm. These stakeholder dilemmas can lead to conflicting reactions to open data and resistance that is more nuanced than what one encounters in mainstream scholarship on freedom of information and transparency. Although the specific motives for resistance may vary in other sectors of public service provision, such as health and security, the Three-Ps framework furnishes a starting point for examining which stakeholders may resist open data initiatives, and why.

This study identified important differences in how resistance to education open data is manifested across two very different countries. Professional resistance to performance measurement was more pronounced in the UK than in Brazil, as were privacy concerns. In this sense, a broader front of stakeholder resistance in the UK may explain why the Guardian’s coverage of education open data performance metrics was significantly more voluminous than that of Brazil’s Estadão (see figure 1). Yet while professional and privacy concerns may be less salient in Brazil, political resistance tended to be more pronounced than in the UK. Most state secretaries for education interviewed for this study (12 out of 16) had no plans to release open data. In compensation for this resistance, Brazil’s Estadão newspaper promisingly focused more on the question of governmental resistance than did its UK counterpart. Newspaper content analyses of open data-based performance metrics in both countries showed that the tone of coverage was markedly negative.

Several rationales may account for varying degrees of resistance in Brazil and the UK. First, the most obvious—education policy in the UK is clearly further ahead. The UK was one of the earliest adopters of school performance measurement and it has come to terms with many of the basic challenges of public education provision. Brazil still struggles with these challenges. As a consequence, the UK appears to be more focused on reputation-centred concerns (i.e., performance rankings, privacy) or what Inglehart (1997) refers to as ‘post-materialist’ preoccupations.

Second, greater political resistance in Brazil may not be a question of mere ‘bad faith’ or an unwillingness to disclose, but rather a lack of faith in the capacity to adhere to better practice. In other words, officials may simply not believe that they have the finances or human resources needed to create and administer better practice open data initiatives. More research is needed to better understand how questions of political will and capacity determine the extent of open data disclosure. What is clear is that underfunding and the lack of qualified professionals are serious problems in Brazil. One solution is to involve civic sponsors or support in a more programmatic fashion and, as we have shown, it is a hopeful sign that some committed leaders are doing just this.

A third rationale to explain Brazil’s divergent forms and levels of resistance may be encountered in the fact that many wealthy families opt out of the public system. Brazil’s public system has proportionately 11 per cent fewer students than the UK’s. This missing 11 per cent may translate into less pressure by influential parents and fewer concerns on the part of politicians and administrators. On the positive side, media coverage may be compensating to some extent; we found that political aspects of resistance to open data were more salient in coverage in Brazil than in the UK.
TABLE 2 Potential policy strategies

<table>
<thead>
<tr>
<th>The three-Ps of resistance</th>
<th>Trade-off and resistance</th>
<th>Policy strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>Straightforward metrics vs. overly simplistic, de-contextualized comparisons and negative externalities</td>
<td>Development of contextual indicators; open data to engage informed conversations</td>
</tr>
<tr>
<td>Political</td>
<td>The provision of a public good vs. blame for politically contentious or technically deficient open data disclosures</td>
<td>Release high-quality open datasets; develop local ecosystem of open data consumers; recruit businesses, NGOs, and citizens (e.g. hackers) to help with capacity-building or building specific deliverables</td>
</tr>
<tr>
<td>Personal privacy</td>
<td>Improved performance outcomes vs. intrusions into private personal data</td>
<td>Regulation to balance privacy rights with economic benefits</td>
</tr>
</tbody>
</table>

However the differences between Brazil and the UK are rationalized, more mixed-method research needs to address the many hypotheses and points of inference detailed throughout this comparative study. Our own analysis is limited by its broad objectives, its use of interviews as opposed to survey data, a two-outlet newspaper content analysis, and a focus on only two countries. Future studies might examine resistance in key jurisdictions (e.g. capital cities) in a larger sample of countries, at different levels of education and at high and low levels of educational achievement.

Scholars may also seek to place greater focus on potential policy solutions. This article has examined basic remedial measures, as described in table 2. The most fundamental proposal is to continue moving towards data-informed evaluations, as opposed to those that are doggedly data-driven. What this means in practice is using data judiciously, as a part rather than the whole of evaluations. It also means expanding performance evaluations to accommodate categories of measures that speak to context. Regardless of whether open data performance measures play a small or large role in policy evaluation, governments must also institute regulatory frameworks sympathetic to open data. Risk assessments to weigh the potential benefits of opening data against the potential costs of possible privacy harms, for example, should represent a first priority.

These policy lacunae raise concerns about the trade-offs implied by open data performance measures: between efficiency, fairness, accountability, and collaboration on the one hand, and, on the other, concerns such as governmental capacities, holistic policy evaluations, contextual sensitivity, and privacy. These burdensome trade-offs may help explain why governments around the world still have a long way to go in terms of fulfilling what many see to be the great promise of open data.

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NOTES

1 See online transparency appendix at https://transparencyappendix.wordpress.com/
2 http://data.gov.uk
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