Whither the need and motivation for open government data (OGD) promotional strategies?

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Abstract:

Design/methodology/approach: Based on literature review on the OGD conceptual models and government promotion initiatives, the study further sketches an OGD model across four quadrants: Beginners, Followers, Fast-trackers, Trend-Setters on the basis of the progress made in their OGD initiatives besides underlining the four elements of OGD promotional strategy as MASS (Media, Arena, Substance and Stakeholders). Also, the study explores the drivers and barriers to OGD promotional initiatives.

Purpose: It has been underscored in the extant literature that Open Government Data (OGD) has not percolated across the length and breadth of any country, let alone the awareness of the OGD among the stakeholders themselves. In this vein, the present study seeks to underline the reasons as to why OGD promotion merits consideration apart from underlining the manner in which OGD promotion may be done.

Findings: The study shows that across the OGD quadrants, the promotional strategies vary in terms of the 4A's (Acceptability, Affordability, Accessibility and Awareness) and the same get reflected across MASS. Further, the drivers for OGD promotional initiatives are building citizens' trust and forging stakeholder participation and collaboration in administration thereby furthering transparency in administration, meeting the needs of the stakeholders, providing the desired impetus to value creation and innovation by the stakeholders, and the need for furthering economic growth. Likewise, the barriers towards OGD promotion are linked with the lack of political will, lack of organizational leadership, mission and vision, lack of involvement of government departments, lack of budget and lack of requisite infrastructure for promotion.

Originality: Hitherto, OGD research has underscored the need to make the users aware of the potential of OGD initiative, however, no study has been undertaken to understand the manner in which the awareness may be driven among the users-the present study is a first step in this direction.

Keywords:

Open Government Data, OGD, Promotion, Drivers, Barriers, Literature review

Introduction

Open Government Data (OGD) initiative is considered as an advanced stage of e-government. As a fast-burgeoning concept, OGD initiatives are being projected as a promising endeavor of the governments to further transparency in administration and curbing corruption. OGD initiatives also help in bolstering citizen trust apart from furthering citizen collaboration and participation in administration (Attard et al., 2015). OGD, as such, is the provision of data (in machine readable formats to be amenable for statistical analysis and interpretation) pertaining to the government functioning and operations via dedicated or independent web portals for citizen re-use (Safarov, Meijer and Grimmelikhuijsen, 2017). The reason for promoting re-use of datasets by the citizens is that it is hoped that the re-use of these datasets would lead to value creation and innovation. Thus, professionals like academia, farmers, developers, businessmen, or the entrepreneurs, non-profit organizations, journalists, etc. are involved in the value creation process by re-using the datasets (Gonzalez-Zapata and Heeks, 2015). With these innovations involving a range of stakeholder groups, it is anticipated that the public service delivery formats shall witness improvisation apart from bolstering the economy as a whole (Chan, 2013; Zeleti, Ojo and Curry, 2016). Since OGD is sourced from diverse government bodies, these datasets pertain to diverse socio-economic and political sectors like energy, environment, transport, education, mining, agriculture, industries, etc. OGD is provided license-free and as long as the terms of use are being adhered to by the users, there are no restrictions as far as the re-use is concerned. However, what is critical to be borne in mind is that the quality of the datasets should be par excellence, i.e. datasets should be complete, error-free, supported with metadata (information pertaining to the authorship, date of updation, source, etc.), timely, accurate, etc. For an overview of OGD, the reader is recommended to peruse previous works (Attard et al., 2015; Wirtz and Birkmeyer, 2015; Wirtz, Becker and Langer, 2022).

A number of countries across the globe have implemented OGD initiatives and established indices have benchmarked the same across different parameters (For instance, Global Open Data Index (GODI), Open Data Barometer (ODB), the Open, Useful and Re-usable data (OURdata) Index, the Open Data Inventory (ODIN), the Open Data Maturity Report (ODMR), and the Open Government Development Index (OGDI)). However, the awareness about the OGD initiatives per se is lacking among the stakeholders thereby preventing the re-use of the datasets for value creation and innovation. That the awareness about OGD among the users is lacking has been clinched in at least four research studies (See, Chokki, et al., 2022; Janssen, Charalabidis and Zuiderwijk, 2012; Gebka et al., Saxena, 2017). Thus, it is important that awareness campaigns be done by the government for ensuring that the datasets are being re-used by the stakeholders concerned. However, there has been negligible research regarding the manner in which awareness of OGD might be furthered to facilitate the re-use and adoption of OGD among the stakeholders. Thus, the present study seeks to address this research gap by underlining this facet regarding the drivers and barriers for OGD promotional activities by the government. Specifically, the guiding research objective of the present study is to identify the key elements for OGD promotion for wider reach and awareness among the stakeholders concerned.

The study is structured as follows: following a brief on related research regarding OGD models and promotional initiatives by the government, a new conceptual OGD model (Beginners, Followers, Fast-trackers, Trend-Setters) is proposed. Then, a brief is provided regarding OGD promotion with a focus on four elements of OGD promotional strategy as MASS (Media, Arena, Substance and Stakeholders). Furthermore, the drivers and barriers for OGD promotional initiatives are being outlined and thereafter, a concluding section is provided along with academic and practitioner implications.

Research methodology

Literature veering around e-government, OGD and promotion was scanned. Two strands of OGD research may be referred here: OGD models and Government promotion initiatives. The rationale for identification of the first strand is that to propose a new model based on OGD promotions, it is pertinent to note if the existing models proposed in the extant literature underline the need for OGD promotions. The raison d'etre for identification of the second strand is that it is important to deepen our understanding regarding the existing initiatives on the part of the government to spearhead their administrative innovations that are specifically citizen-centric. To identify the main arguments built around both the strands, extensive literature review was done. Specifically, the marketing management theoretical framework, i.e. the promotional elements, has been referred to address the research objective. As such, the present study is in line with the assertion that there is a need for furthering our understanding of the OGD "products and services" which subsumes generating awareness among the stakeholders regarding OGD and its benefits (Lindman, Rossi and Tuunainen, 2014). The justification of invoking a management theoretical framework in the public administration is two-fold: adopting an inter-disciplinary approach given the need for knowledge building via integration of theories from other domains helps in drawing patterns and connecting the dots (Dussauge-Laguna, 2013; Ongaro, 2022); and, second, OGD-focused research ought to substantiate its objectives by referring to the theoretical standpoints from "multidisciplinary sources" for furthering the understanding of the phenomenon (Charalabidis, Alexopoulos and Loukis, 2016, pp. 43).

Therefore, a systematic literature review was undertaken for driving home the research question of the present study: "What are the key elements of the OGD promotional strategies?" For the purpose of this study, we performed a systematic literature review based on keyword search (Figure 1). In line with the research objective, all the research papers being covered in the following search ("e-government" OR "e-governance" OR "electronic government") AND ("Open Government" OR "Open Government Data" OR "Public Sector Information" OR "PSI" OR "Open Public Data" OR "OPD") AND ("promotion" OR "advertising") were referred from the two key digital libraries/databases, viz., Scopus and Web of Science. Thereafter, an in-depth analysis of the relevant studies was conducted. In all, we identified a total of 27 studies in Scopus

and 8 in Web of Science, inclusive of the ones available in open access formats. All the studies were in English language. Besides, we also looked up for the pre-prints and/or archived versions in line with our search queries. Snowballing sampling approach was used and the back-tracking and forward-tracking of articles was done to lead to a final list of 13 research papers.

OGD models

Three prominent models have been advanced in the extant OGD literature. The first model relates to the content provided via the web portal by the data publishers: "data over the wall" (government publishes OGD via an online web portal thereby facilitating the users to download the same in popular formats with the possibility of statistical analysis and interpretation and visualization, albeit with a limited feedback mechanism from the users), "code exchange" (the government publishes OGD besides propelling the re-use of the same for the advantage of different stakeholders like citizens, private sector or the government), "civic issue tracker" (the government acknowledges and accepts direct feedback from the citizens on some issues thereby facilitating citizen participation) and "participatory" (involving government-citizen co-production of data such that there is OGD provision by the government as well as requests for new citizen-generated data which facilitates discussion over policy issues as well) (Sieber and Johnson, 2015). The drawback of this modular framework is that they are not all-encompassing in the sense that factors such as the quality of datasets published via the portal, the facilitating or inhibiting environmental conditions, the role of OGD policies etc., have not been factored into account. The second model provides a typology in which the countries have been positioned as "laggard", "caged", "forerunner" and "champ" wherein the "Laggard" countries are the ones where there are hindrances associated with OGD implementation and OGD-usage; "Caged" countries are those with less propensity to implement OGD initiative but increased potential of usage by different stakeholders; "Forerunner" countries as those which hold high potential of rolling out an OGD initiative but low potential of usage by different stakeholders; and "Champ" countries as those which ranked high in terms of implementation of an OGD programme as well as usage by diverse set of stakeholders (Saxena, 2017a: pp. 219). However, this model does not take into account the aspects like the awareness levels of the users, the socio-economic profiling of the users, the role of environmental forces, etc. Also, the model was based on the economic development of a country and the quality of OGD provided by the national portal. Finally, the third model is a stage model ("aggregation of government data", "integration of government data", "integration of government data with non-government formal data" and "integration of government data with non-government formal and social data") for OGD initiatives across two dimensions ("added value" and "organizational and technological complexity") (Kalampokis, Tambouris and Tarabanis, 2011). However, this model fails to take into account aspects like the environmental conditions, level of awareness of the stakeholders, etc.

In line with the aforesaid, we propose that OGD conceptual modeling should include environmental considerations (socio-economic profiles of the users, level of awareness of the OGD initiative among the users for re-use and value creation, level of expertise and training of the users, organizational and inter-organizational factors). Thus, we propose that based on the 2 dimensions: "organizational readiness" and "user engagement", OGD initiatives of the countries may be categorized as "Beginners", "Followers", "Fast-trackers", and "Trend-Setters" (Figure 1). "Organizational readiness" is a factor of policy regulations, budgetary allocations, leadership, motivation and morale of the manpower, training of the manpower engaged in the OGD initiative, infrastructural support, provision of high-quality datasets, coordination between and within government departments, conducting of events and contests for users for value creation and innovation (hackathons, competitions, training modules, lectures, etc.) and a robust feedback and control mechanism. "User engagement" is a factor of socio-economic background of the users, user motivation and morale, user possession of skills and expertise, user readiness to exploit the internal (energy, time, cost) and external (engagement with the government body) resources, user contribution to the datasets and engagement in value creation and innovation.

Organizational readiness (High)	**Fast-trackers**	**Trend-setters**
Organizational readiness (Low)	**Beginners**	**Followers**
	User engagement (Low)	User engagement (High)

Figure 1: 4 quadrants categorization of countries in terms of their OGD initiatives

Government promotional initiatives

Not much literature is available on the promotional activities of the governments-this is possible because of limited promotional initiatives by the governments covering all the socio-economic sectors but for a few like health and hygiene (See, Bryant, 2002). Whereas, some of the advertisements and promotional campaigns are to push or inspire the citizens to do something, others are prohibitory in nature. Hitherto, in many countries, governments have been releasing advertisements regarding job vacancies and government contracts, however, the shift towards social marketing and promotions (e.g. for healthy lifestyle, issuing caveats against deadly diseases and the ways of preventing them) has been happening lately (Young, 2006). In Tanzanian context, a case study based on the National Sanitation Campaign sought to make the people aware about the benefits of sanitation and hygiene through campaigns, marketing events, direct visits to the households, and providing technical advice to the concerned personnel at the local levels (Jimenez, Mtango and Cairncross, 2014). Likewise, moralistic messages are being used for preventing citizens from the ills of gambling and smoking (Graglia, 2008). Government advertising to make the people aware of the ills of tobacco and smoking have also been referred to in extant literature

(Siegel and Biener, 2000; Silver, 2001; Worden et al., 1996). Furthermore, the governments (India and Australia, for instance) have spent a lot on the advertisements linked with the awareness and prevention of Covid-19 apart from making the people aware about the need to be vaccinated (Financial Express, 2021; Australian Government, 2022). Advertisements for furthering sex education and family planning awareness have been released by the governments of India and UK in order to further awareness among vulnerable communities or groups and to check population growth respectively (Guardian, 2010; Kairu, 2013; Sinha and Sahdeo, 2018). In another instance, in the US, the effect of alcohol advertising by the government was investigated in terms of its impact on the per capita alcohol consumption (Giesbrecht et al., 2004).

OGD promotion

As far as the precursor of OGD, namely, the e-government is concerned, it has been pointed out that "academic discussion around e-government promotion is insufficient" (Yang, 2016: 317) and the same holds true for OGD initiatives as well. Borrowing from the marketing management field, as such, the term "promotion" is acknowledged as a marketing strategy among other 4 "Ps" of place, product, price and promotion (Kotler and Keller, 2016). Thereafter, the 4Ps were extended to 7Ps to include people, process and physical evidence in the portfolio (Booms and Bitner, 1981). Promotion implies the communication of information about a product (or service) from a seller to a buyer or anyone else in the value chain in order to influence the behavioral disposition towards that product (or service). Promotion helps in encouraging the buyer to buy the product apart from convincing her of the product credibility. Some of the promotional methods include personal selling, mass selling (advertising and publicity) and sales promotion. The 4P's framework is focused on the supply-side with its emphasis to sell the product to the buyer. In contrast with the 4P's framework, the 4C's model (Consumer wants and needs; Cost to satisfy; Convenience to buy and Communication) proposed by Lauterborn (Lauterborn, 1990) and the 4A's model of Sheth and Sisodia (Sheth and Sisodia, 2012) are more of demand-side frameworks that facilitate the users/customers to proactively participate and collaborate in the information-reception process (Perreault and McCarthy 2002). Specifically, the 4A's framework (Acceptability, Affordability, Accessibility and Awareness) seeks to underline the user/customer needs.

Till the point of writing this research paper, there has not been a single study on OGD promotion. True, that the governments of many countries have a social media account (OpenGovInc, 2022; OpenGovCan, 2022, Openvovitaly, 2022, dataportalofindia, 2022), however, the regular and timely updation on these portals is not there. Also, not all the governments have social media accounts for promoting OGD (See Australian case (data.gov.au, for instance). OGD promotion needs to be targeted towards generating awareness of OGD and the re-use of OGD for value creation and innovation apart from impressing upon the stakeholders the potentials of OGD initiatives. It is important that an independent wing be established in the government body for spearheading the OGD promotional initiative. Furthermore, the ICT (Information and

Communication Technology) infrastructure should be in place for facilitating the wider reach of the OGD promotional initiatives. Political and legal environment should be conducive to OGD promotional drives.

Four elements of OGD promotional strategy as MASS (Media, Arena, Substance and Stakeholders)

It is argued in this study that OGD promotional strategy needs to be based on four elements abbreviated as MASS (Media, Arena, Substance and Stakeholders) and each of these elements rests its edifice on the 4A's framework (Acceptability, Affordability, Accessibility and Awareness) (Sheth and Sisodia, 2012). The justification for inter-linking of authors' proposition of MASS with that of the 4A's framework is two-fold: first, the elements of MASS are infused into the 4 A's to understand the inter-linkages and the inter-dependence between the two, and, second, this inter-linking helps to rationalize the specific applicability in the OGD context. In the 4 A's framework, Acceptability implies that a product or a service should be in accordance with the needs and expectations of the users. There are two facets of acceptability-functional and psychological wherein the former refers to the extent to which the product or service is reliable enough and stands true in terms of its functionality, features and performance; whereas the latter refers to the affective attachment to the product or service. Affordability is the second dimension of the 4A's model which assesses the extent to which the product or service is economically viable and the user is ready to bear the costs. There are two facets of this dimension: economic affordability and psychological affordability wherein the former implies if the users have the wherewithal (in the terms of money, in most cases) to purchase the product or service and the latter implies whether and what a user perceives of her/her value delivery expectations in return for the expenses incurred by her/him. Accessibility is the third element of the 4A's model which gauges whether the user can secure and utilize a particular product or service. Accessibility has two dimensions-availability (does the product/service provider have the requisite supply of the desired product/service) and convenience (whether the acquisition or possession of a particular product or service is easy enough). Finally, the last element of the 4A's model relates to "awareness" which assesses the extent to which users are well-informed about the product/service, its features and its advantages apart from impressing upon them the reasons for opting for the same product/service again and again. In the strict marketing management language, "awareness" has two dimensions-product knowledge (users' awareness about the full information about the product/service) and brand awareness (users' proclivity towards a product/service on account of its provider/maker's reputation and reliability).

When the 4A's framework is applied on the OGD model forwarded by us (Figure 1), following inferences may be drawn (Table 1):

1. Acceptability of OGD relates to the increased re-use and engagement with OGD on account of the provision of high value datasets in terms of dimensions like traceability, currentness, expiration, completeness, compliance, understandability and accuracy (Vetro et al., 2016). It is important that the government is committed to the maintenance of data quality apart from understanding the data quality needs of the users (The Government Data Quality Framework, 2020).
2. Affordability of OGD refers to the access of free or minimally charged OGD.
3. Accessibility of OGD is associated with the hassle-free access of OGD across the user groups without any discrimination.
4. Awareness of OGD implies the furthering of knowledge about the OGD and its benefits among the user groups for value creation and innovation.

Promotional strategy as per the 4A's (Sheth and Sisodia, 2012) → / Classification as identified by the authors ↓	*Acceptability*	*Affordability*	*Accessibility*	*Awareness*
Trend-setters	Promotional strategy is extensive and deep-down to reach the maximum clientele and the users are convinced of OGD and its reliability and the users are willing to expend their physical and psychic costs to engage with OGD	Promotional strategy is unique and efficient in terms of reaching the nook and corner of the region to make the users aware of the affordability of re-using OGD and the users find it inexpensive to engage with OGD	Promotional strategy seeks to involve the users in the OGD value creation process and keeps them posted about the developments in value creation as well as the fact that high-quality OGD is easily available with interoperability features	Governments are perceived as reliable and trustworthy by the users and promotional strategies seek to bolster such trust among the users regarding the OGD initiatives as well
Fast-trackers	Governments are making progress in promoting OGD initiatives and impressing upon the users the credibility of OGD for being re-used for value creation and innovation; users are willing to expend their resources to engage in OGD	Promotional strategy involves substantial progress in terms of impressing upon the users the low costs associated with the OGD engagement process	Governments try to ape the best practices available elsewhere to institute and improvise OGD initiatives and make provision for making OGD accessible to all, however, quality considerations may need to be met	Promotional activities for generating awareness about OGD are channelized towards major stakeholders and not necessarily cover all the users

Followers	Governments are fighting shy of promoting OGD initiatives in terms of the potential benefits of OGD and the users are just beginning to grapple with the need to engage with OGD	Promotional strategy evolves a little to impress the users about the OGD advantage to some extent and only some of the users are engaged with the OGD	Governments start planning the OGD initiatives' roll-out and some datasets are published here and there	Promotional strategy involves providing fundamental knowledge about OGD and not all the users may be aware of the benefits of re-using OGD
Beginners	Governments are lackadaisical or negligible in terms of their OGD promotions regarding the nature and scope of OGD; users do not expend any resources to understand or tap OGD and have minimal reliance on the government or its OGD initiative	Promotional strategy is minimal or negligible to impress upon the users the cost-benefit equation while re-using OGD	Governments do not perceive the need to make OGD accessible to the users	Governments are not willing to promote OGD because it is still at its nascent stage and governments are still toying with the idea of OGD; therefore, promotional strategies to increase OGD awareness are few and far between

Table 1: Promotional strategy applicable for the OGD categories

Media: The choice of the media has a direct impact on the efficacy of the promotional campaign (Jimenez, Mtango and Cairncross, 2014). Therefore, whereas print, electronic or cyber media may be deployed for promoting OGD and its utilitarian dimensions, it needs to be ascertained if a proper match is attained between the target audience and the media channel used for the purpose. For instance, whereas the radio and television broadcasting of OGD advertisements may be suitable for the urban and rural pockets respectively, the usage of cyber media (inclusive of social media outlets like Facebook, Twitter, Tumblr, etc.) might be considered suitable for the actual social media users (Lee and Kwak, 2012). In terms of the 4A's framework, media channels are viable outlets to further acceptability, affordability, accessibility and awareness of OGD. Thus, users will be able to acknowledge the presence and utility of OGD in a better way by tuning to the channels of their choice and they can weigh the benefits of OGD for their purposes. Likewise, they can appreciate the nature, scale and scope of OGD via the media. Online media channels may be used

for benefitting the users with the knowledge of the OGD functionalities via videos (especially for the "Trend-setters" and the "Fast-trackers"). Likewise, offline media channels (i.e. demonstration, at-the-doorstep training, etc.) may be used for sharing success stories of the users who made or improvised products and/or services (especially for the "Followers"). Users may be convinced psychologically about the OGD re-use and value creation. Given that OGD is free of cost, users may nonetheless be made aware of the prerequisites for re-using OGD and this implies that users need to use their resources like time, energy and the required ITC infrastructure. Whereas, the "Trend-setters" and the "Fast-trackers" might find their promotional strategies well-positioned in terms of making the users aware regarding the affordability of OGD, the "Followers" might find it a little challenging task. As far as accessibility is concerned, users need to be made aware of the voluminous OGD available via the web portals that might be explored by the users to their advantage. The media channels may be used to make the users aware about the convenience of data searching, filtering, and downloading besides performing other tasks. Thus, the "Trend-setters" and the "Fast-trackers" might find their promotional strategies customized for making the users aware of the easy access of OGD at the click of their mouse. Finally, media channels may be used to make the users "aware" of OGD-its features, functions, usage, apart from the knowledge of the technical terms and nomenclatures specific to the OGD platform (Wirtz, Daiser and Mermann, 2018). Media channels would also help in making the users aware about the data providers themselves which would go a long way in boosting user confidence and trust in the government. In terms of generating awareness, the "Trend-setters" and the "Fast-trackers" are already successful in making the users aware of OGD and its utility; the same might be a little challenging as far as the "Followers" are concerned. Finally, across all these 4 A's, the "Beginners" will find themselves in a challenging situation because of the lower levels of organizational readiness and user engagement for OGD institutionalization.

Arena: Much depends upon the choice of arena for aiming at targeting the audience. Therefore, whether the message is targeted for the urban or the rural areas given the heterogeneity in both in terms of population, professional background, family background, economic status, educational background, etc., the governments at the national, state and local levels need to strategize their OGD promotional initiatives. The promotional strategies across the government levels must take into account the infrastructural landscape of the areas as well prior to developing the promotional strategy. In terms of the 4A's, the choice of the arena determines the extent to which the users perceive OGD as acceptable. Given that heterogeneous societal make-up is to be catered to, the customized messages need to be put across the users' psyche regularly. On the other hand, since OGD is also heterogeneous, so to match the heterogeneous user with the heterogeneous OGD, a planned promotional strategy is required. Such personalized promotional strategies are quite common among the "Trend-setters" and to some extent, among the "Fast-trackers", however, the "Followers" push mass-media promotional strategies. In terms of affordability, the heterogeneous users need to understand the differential resource deployment depending upon personal (motivation, profession, educational status, time available at hand, etc.) and environmental

(infrastructure in the area, economic status of the area, legal policies, etc.) factors. As always, the "Trend-setters" and the "Fast-trackers" are in the forefront when it comes to matching affordability messages with the heterogeneous users but the "Followers" are yet to evolve their promotional strategies. In terms of "accessibility", the arena must suit the requirements of the users such that they know that OGD potential is vast and it is convenient to use the same. Whereas the "Trend-setters" and the "Fast-trackers" are catering to a developed and advanced clientele requiring more advanced promotional messages to be put forth before them in terms of accessibility, the "Followers" pitch their promotional activities to the best extent possible for attracting the desired clientele for OGD re-use. Finally, in terms of "awareness", the arena chosen for the OGD promotion should be scalable enough to address as many heterogeneous users as possible at the same time. Across this dimension, the "Trend-setters" and the "Fast-trackers" are well-equipped in generating awareness about OGD among the heterogeneous groups, the "Followers" conceive of promotional strategies aimed to attract the attention of some groups but not all. The "Beginners" are not able to appreciate the OGD utility for the "arena" and therefore, their promotional strategies are bare minimum.

Substance: The content of the communication message forms the core of any OGD promotional strategy. For instance, via Twitter, a specific message length is warranted but the same doesn't hold true for blogs, newspaper advertisements or radio channel advertisements. The message needs to be complete and accurate in itself underlining the benefits of OGD and the manner in which the stakeholders might benefit from the re-use of OGD for value creation and innovation (Gunawong, 2015). In terms of the 4A's framework, the substance chosen for OGD promotional drive should be able to make the users aware of the overarching vision and purposes of OGD initiatives besides driving home the nature and utility of the same for value creation and innovation (Unsworth and Townes, 2012). Users should be able to accept OGD in its entirety as far as its potential is concerned. The "Trend-setters" and the "Fast-trackers" are already on their path to delivering the appropriate promotional messages complete with the descriptives, functionalities and benefits of OGD, the "Followers" catch up on such promotional strategies. Similarly, in terms of affordability, it should be made clear to the users that OGD is freely available and is license-free. OGD is free, by and large except for some cases where the users may be required to create a personal account for themselves or to answer some questions regarding the purposes of downloading the dataset/s or referring to the portal. The substance of the OGD promotional messages has full details regarding the affordability of OGD as far as the promotional strategies of the "Trend-setters" and the "Fast-trackers" is concerned. Users should be informed of the OGD "accessibility" in terms of the free and easy availability of datasets. Whereas the "Trend-setters" and the "Fast-trackers" are quick and advanced in terms of their promotional message content regarding the "accessibility" of OGD, the "Followers" need to struggle with the different message substance to cater to the different user groups belonging to different backgrounds. Finally, in terms of the "awareness" element, the substance of the campaign should make the users aware of the actual usage of the OGD portal, discoverability of the datasets, searching for the same, analyzing them and deriving

value out of the same. The "Fast-trackers" and the "Trend-setters" align their promotional campaigns to make everyone aware of the OGD initiative as also its scale and scope, the "Followers" may not have such evolved strategies because of their lesser-developed OGD initiatives. Across all these parameters, the "Beginners" do not or minimally initiate any self-driven promotional initiatives for generating awareness among the users about the OGD initiative.

Stakeholders: Conceding that the OGD initiatives are directed at the stakeholders (journalists, citizens, businesses, academia, professionals, non-profit sector, etc.), therefore, the government must customize the promotions that are suitable for the different stakeholder groups. Extant research has shown how the OGD ecosystem involves the stakeholders from diverse backgrounds (Zuiderwijk, Janssen and Davis, 2014; Gonzalez-Zapata and Heeks, 2015; Dawes, Vidiasova and Parkhimovich, 2016; Saxena and Muhammad, 2018) and to meet their needs and motivate them for OGD re-use; influential messages need to be put across before them. In terms of the 4A's framework, the OGD promotion drive needs to be stakeholder-driven. For instance, stakeholders (public and private sphere) need to realize the "what's in it for me?" dimension of OGD in order to make them committed towards OGD. In terms of "affordability", the stakeholders must appreciate that apart from the physical and psychic costs involved in the OGD re-use process, there is no other cost involved at all. They must understand that the benefits to be gained after the OGD re-use are far much than these costs, therefore, the bargain is worth its price. The "Trend-setters" and the "Fast-trackers" use customized promotional strategies to suit the needs of individual stakeholder groups, but the "Followers" may need to work upon their promotional strategies on these lines. In terms of "accessibility", the stakeholders can be driven to understand that OGD is in abundance to be mined and re-used across different sectors and interoperability of data may yield stupendous results in terms of value creation and innovation. The "Trend-setters" and the "Fast-trackers" base their promotional campaigns on the easy access of OGD by one and all but the "Followers" struggle with their promotional drives in terms of providing access to all because of unfavorable conditions like the infrastructural divide or the rural-urban divide. Furthermore, stakeholders must know that OGD reuse is hassle-free and the web portal has user-friendly features for data access and re-use. These dimensions constitute the core of the promotional messages among the "Trend-setters" and the "Fast-trackers" for attracting a wider cross-section of stakeholders, however, the "Followers" may not be that successful in these promotional campaigns. Finally, the stakeholders should be made "aware" of OGD and its expanse apart from disseminating relevant information about the government body involved in data release and publication. It is important that the stakeholders have trust in the government body responsible for data release and publication to lend credibility to the promotional drive regarding the OGD initiative. The "Trend-setters" and the "Fast-trackers" are well-positioned as far as communicating the OGD benefits via promotional channels is concerned and the "Followers" are yet to strategize their promotional campaigns to make all the stakeholders aware of the OGD initiative and its utility. Lastly, the "Beginners" are the ones that are least concerned with the dissemination of messages regarding OGD initiatives with the concerned stakeholder groups.

Consequences of OGD promotional initiatives

First, OGD promotional initiatives would result in behavioral change. Behavioral intention to adopt and use OGD has been an important subject of research among many researchers and the same is influenced by many technology-use factors (See, Zuiderwijk, Janssen and Dwivedi, 2015; Saxena and Janssen, 2017; Talukder et al., 2019; Lnenicka et al., 2022). Implicitly, there would result in motivation among the stakeholders to re-use the datasets. Being aware of OGD and its potential in terms of value creation and innovation, stakeholders would become interested to know about the manner in which value creation and innovation might happen and the manner in which their efficiency would increase.

Second, OGD promotional initiatives would result in increased citizen participation and collaboration in administration-this has been put forth as one of the prime aims of launching any OGD initiative. With increased awareness and the re-use and value creation initiatives by the stakeholders, they would engage more with the public authorities to ensure that their data demands are being met. Thus, the government would always ensure that high value superior quality datasets are provided.

Finally, and in continuation with the aforesaid, there shall result economic growth for the country (McKinsey, 2014; Leviakangas and Molarius, 2020), given the fact that value creation and innovation by the stakeholders would result in the furthering of the provision of novel products and services, which, in turn would serve as potent solutions to the existing problems of the day.

Drivers and barriers for OGD promotional initiatives

The first driver to undertake OGD promotional initiatives is to promote citizen's trust in government via OGD initiatives per se which would result in increased citizen participation and collaboration in administration. Given that OGD initiatives are aimed at curbing corruption and bringing about transparency in administration, it is important that the stakeholders be made aware of the overarching vision, aims and objectives of OGD initiatives to further citizen engagement in public service delivery mechanisms. For instance, the geodata provisioned by The Netherlands has been a successful one in terms of the level of onward progression of the OGD initiative (Donker and van Loenen, 2017). The second driver to spearhead OGD promotional activities is to increase awareness among the stakeholders regarding the potential of OGD in terms of value creation and innovation. For instance, the public-private partnership in Chicago facilitated in the development of a "smart platform" for tracking the food safety violations in the restaurants which resulted in improvising the quality of life (McBride et al., 2019). As indicated in the preceding section/s, professionals belonging to different backgrounds gain from the OGD initiatives by creating new products and services or improvising upon the existing ones. This would help in furthering

economic growth of the country. The third driver to further OGD promotional initiatives is to understand the needs of the stakeholders as to what data they are looking for. Through promotional activities, responses and feedback shall be received from the stakeholders and the same may be used for providing quality datasets and improvising the entire OGD value chain. Fourthly, OGD promotional initiatives are important for improvising the administration and governance of the country. Government departments would be able to revamp themselves to improve their public image through responsiveness and accountability. This mandates that inter- and intra-departmental coordination be in place-case in point being the OGD initiative of the Canadian municipal governments wherein the support of the management and the council apart from the employees themselves has led to the success of the initiative (Johnson, 2016).

The first barrier relates to the OGD promotional drive links with the need for the government to have a multi-sectoral approach that targets the entire country cutting across the administrative levels. For instance, the attitudinal disposition of the Azorean bureaucrats handling the OGD initiative was a potential issue of concern because of the silo-based mentality in a closed organizational culture (Garcia, 2022). Also, without the efforts at impressing upon the diverse and heterogeneous group of stakeholders the benefits and potential of OGD initiatives, the promotional efforts might result in fallout. Likewise, the promotional campaigns without addressing the root causes or the rationale behind the institutionalization of the OGD initiatives are bound to collapse or result in negligible results if the behavioral modification of the users is ignored. Second, promotional initiatives may be hampered on account of the resource constraints (See, Ostlin et al., 2007). Thus, the government may not have the sufficient budgetary and other resources for OGD promotional activities. Apart from the monetary considerations, the government may not have the desired manpower for being engaged in the promotional activities. For instance, in the Austrian OGD initiative, the Public Relations department and not the individual OGD provider/s manages the "marketing" dimensions of OGD initiatives (Parycek, Hochtl and Ginner, 2014). Third, the Information Technology (IT) infrastructure may not be robust enough to spearhead OGD promotional campaigns. Fourth, addressing the expectations of the diverse stakeholders in terms of the promotional content and the pitch used for the awareness generation among them is a potential challenge. Thus, an academic researcher would require a different promotional pitch than that targeted at an entrepreneur, non-profit sector or a layman. This implies the need to strike a balance between general and specific promotional content and pitch that is aimed at the general OGD user and a professional OGD user. For instance, the job seekers in a South African context encountered difficulties in job search because of not being aware of the job-related OGD (Masavah, Van Der Merwe and van Biljon, 2021). Fifth, absence of legal stipulations regarding the promotional activities may be a challenge because of the possibility of the violation of intellectual property rights (Golder and Dixon, 2017)-case in point being the usage of social media for advertising wherein the algorithmic bias is likely to subvert or undermine the key discourses (Kreiss and Mcgregor, 2019). For instance, the failure on the part of the US government to engage in an interactive ecosystem with the OGD users has been a major area of concern for a long time

because of the challenges associated with the timely and accurate exchange of information (Lee and Kwak, 2012). Sixth, the challenges posed by the different media channels' efficacy and reach apart from the propensity of disinformation and manipulation of the messages (Cacciatore et al., 2018) might strike at the root of OGD initiatives' objectives and aims. Finally, without an institutionalized media infrastructure (Bechmann, 2020) of the government, the OGD promotional initiatives are likely to fail sooner or later.

Conclusion

The aim of the study was to underline the need for spearheading promotional drives for OGD initiatives given the fact that awareness about OGD among different stakeholder groups is limited or negligible. Limited awareness among the users becomes as a major hindrance in the re-use and adoption of OGD. Based on the 4A's framework advanced earlier, the authors proposed a new quadrant framework hinged on MASS. Delineating the manner in which the MASS promotional drives progress across the typology of countries on the basis of their OGD initiatives' progression, viz., trend-setters, fast-trackers, followers and beginners, the study sought to underline the manner in which the promotional activities promote awareness of OGD among the user groups. Furthermore, consequences of OGD promotional activities were discussed along with a brief on the opportunities and challenges regarding the promotional initiatives. It is anticipated that the overarching goals of OGD initiatives shall be better realized if the awareness of the same is furthered among the user groups. Finally, in line with the research gap identified in the extant literature on OGD, the present study adds to the modular frameworks pertaining to OGD with a specific emphasis upon the awareness generation via the promotional activities of the government.

Academic implications

The present study leaves several academic implications. First, future research could explore the efficacy of different media channels for OGD promotion across the OGD categories in terms of MASS. Given that a diverse set of users need to be catered to, it is important to gauge the requirements and expectations of this heterogeneous composite and then improvise upon the existing OGD initiatives. Thus, empirical research may be conducted soliciting perspectives from different stakeholders on these lines. Second, it may be pertinent to conduct an empirical analysis of the OGD promotional initiatives in rural versus urban areas of the OGD categories and check the efficacy of the promotional channels and methods in the same. Third, perspectives from the public officials may be solicited regarding the challenges of launching the OGD promotional drives cutting across administrative levels as far as the OGD categories are concerned. Finally, further studies may be considered in developed versus developing countries regarding the opportunities and challenges of OGD promotional strategies and their implementation.

Practitioner implications

The present study leaves many practitioner insights in terms of governance and policy-making. First, governments need to chalk out a vision for strategizing OGD promotions. Thus, organizational leadership and support is mandatory for the sustainability of OGD promotional initiatives given that a significant component of any promotional endeavor is the reinforcement of the message upon the target stakeholders. Second, appropriate budgetary allocation needs to be made for ensuring the sustenance of the OGD promotional initiatives. Third, ICT infrastructure should be in place for ensuring the efficacious delivery of OGD promotional strategy. Fourth, manpower planning and training needs to be in place wherein the management and maintenance of the OGD promotional wing of the department needs to be ascertained. Finally, the government departments need to ensure that the OGD promotional initiatives are robust enough to have the feedback and control systems in place for ensuring the long-term sustenance of these initiatives and in attaining the overarching vision and objectives of OGD initiatives. This is also suggestive of the need to maintain high value OGD via the dedicated portals to further citizen engagement. This is important given that the poor quality OGD or inept OGD initiative in terms of fabricated and manipulated OGD might result in untoward consequences like indulging in unethical practices in different contexts-case in point being the elections or faulty algorithms designed for public service delivery (See, for instance, Zuiderwijk and Janssen, 2014). Once the OGD initiative becomes sustainable in terms of its advanced stature, the government should ensure promotion of the timely, current, complete and accurate OGD by taking into account MASS strategies.

Appendix

Author/s (Year)	Justification for inclusion in the study
Australian Government (2022)	Understanding promotional campaigns by the government.
Bryant (2002)	Discussed about the manner in which public awareness is important for the success of a government policy.
Dawes, Vidiasova and Parkhimovich (2016)	It provided an understanding of the OGD ecosystem.
Garcia (2022)	Provided an instance of the roles, responsibilities and challenges of civil servants regarding the OGD promotional initiatives.
Giesbrecht et al. (2004)	Background of negative advertising and its impact on the citizens.
Gonzalez-Zapata and Heeks (2015)	Presenting diverse stakeholder groups and their needs and expectations with regard to the OGD initiatives.

Gunawong (2015)	Social media platforms were not adopted or used by the public agencies concerned with OGD initiatives in the context of Thailand.
Jimenez, Mtango and Cairncross (2014)	Both positive and negative promotional campaigns by the government were used in this case study.
Kalampokis, Tambouris and Tarabanis (2011)	Progression of the OGD initiative across different levels of data provisioning.
Leviakangas and Molarius (2020)	Value-creation and innovation via OGD.
Safarov, Meijer and Grimmelikhuijsen (2017)	Overview of the users, uses and facilitating conditions for value generation and innovation via OGD.
Unsworth and Townes (2012)	Usage of social media, i.e. Twitter, by the US department of Agriculture does not actually result in meaningful interaction between the government and the OGD user.
Yang (2016)	Conditions favoring e-government promotional campaigns.

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