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The public policy basis for open access publishing: A scientific approach

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Abstract

This article examines the interplay between public policy and green open access in light of copyright protection. Public policy is crucial for the progress of deposit in open access repositories which enhances distribution of information. In other words, public policy can be also be considered as a tool to contribute in the increase of information access opportunities with respect to copyright protection and associated regulatory framework. There are philosophical and pragmatic justifications based on which access to information is imperative,¹ while contemporary copyright regimes afford (overly) broad protection in terms of copyright duration and uses covered. This paper proposes a theoretical framework which relies on publishing model of open access and aims to develop a standard concerning stakeholder's interests through public policy.

Keywords: public policy, copyright, open access repositories

1. Literature Review

In modern times, the growth of information technologies (IT) is ongoing, and digitisation of creative content is part of institutional norms. Hence, access to scientific information is of paramount importance. The literature shows that there are different options to disseminate scientific information (*i.e.* gold open access and green open access). The creation of open access repositories facilitates the dissemination of information. Open access repositories have already established the core element for green open access practice. Literature reflects that an open access repository constitutes an online information resource that facilitates access to texts of items it contains freely.² According to the OpenAIRE project, the open access repository sets up a database or a virtual archive to collect, distribute and preserve scientific output; from a scientific perspective, open access repositories contribute in science as deposited research outputs are immediately available.³ Other scholars argue that an open access repository is a collection of digital archives created and preserved in order to provide universal and free information access to enhance research.⁴ In the context of their operational framework open access repositories are either linked to an institution as its central information resource or to a research field or subject within an institution (*i.e.* open access repository of the Ionian University which is thematic and focused on the historical development of the Ionian islands of Greece).⁵

To set up an open access repository within institutions, an enhancement of the governance infrastructure and actors involved is also required.⁶ Therefore, the governance

¹ Michel Foucault, *The Archaeology of Knowledge* (Knopf Doubleday Publishing Group 2012); Nikos Koutras, *Building Equitable Access to Knowledge Through Open Access Repositories* (Information Science Reference 2019).

² Stephen Pinfield, 'A Mandate to Self Archive? The Role of Open Access Institutional Repositories' (2005) 18 *Serials: The Journal for the Serials Community* 30; Peter Suber, *Open Access* (The MIT Press 2012).

³ Paolo Manghi and others, 'An Infrastructure for Managing EC Funded Research Output - The OpenAIRE Project' (2010) 6 *The Grey Journal (TGJ): An International Journal on Grey Literature* <<https://pub.uni-bielefeld.de/record/1972842>> accessed 23 April 2019.

⁴ Joan M Reitz, *Dictionary for Library and Information Science* (Libraries Unlimited 2004).

⁵ Clifford A Lynch, 'Institutional Repositories: Essential Infrastructure For Scholarship In The Digital Age' (2003) 3 *portal: Libraries and the Academy* 327.

⁶ Gerard Van Westrienen and Clifford A Lynch, 'Academic Institutional Repositories: Deployment Status in 13 Nations as of Mid 2005' (2005) 11 *D-Lib Magazine*

framework is a subject of intense debate.⁷ The example of open government demonstrates the importance of citizens' right to access governmental documentation. Such access allows for public oversight and consideration on issues discussed in higher layer of formal governance. In this regard, public policy could contribute to the green open access (i.e. deposit in institutional open access repositories) governance. To address the potentials of public policy for the governance of open access repositories, it is necessary to consider a variety of issues.

First, it is necessary to define what is meant by public policy, its interaction with laws and the importance of public policy in designing a governance framework. In this context, the components that should be addressed are: i) subject matter of public policy; and b) its objectives.⁸ In this regard, it is useful to consider the existing declarations, policies and statements in relation to open access practice and examine whether these arrangements can influence stakeholders' engagement with efficient governance of open access repositories. Open access removes price 'barriers' (e.g. subscriptions, licensing fees, and pay-per-view fees), as well as permission 'barriers' (e.g. copyright and licensing restrictions) and makes sure that the copyrights remains with the author; its evaluation is of paramount importance concerning stakeholders' engagement in the governance of open access repositories (i.e. green open access).

Second, policies relevant to dissemination of scientific information should be considered. It is important to examine the public policy basis of intellectual property regulations concerning open access repositories operational framework. Economic theories relevant to the role of intellectual property regulations should be examined as well. This is necessary in order to ascertain the extent to which these regulations facilitate the utility of open access repositories. Additionally, in order to advocate for the desirability of open access repositories, the objectives of social theories should also be considered. In contemporary times, the online channels offered from social media establishes a platform where users are able to create, share and distribute information. Hence, without adequate intellectual property protection implemented for online protection, the incentive for creative endeavors will be undermined.

Third, as scholarly communication infrastructure evolves, it is required to acknowledge the impact of technological advancements on the relationship between intellectual property protection and the framework of information distribution.

1.1 Public policy and participatory democracy: conceptual approaches

Fairer regulations could stem from public policy.⁹ The literature reflects that citizens should be informed in order to be able to participate in the formulation of appropriate public policy.¹⁰ Therefore, the concept of participation illustrates a pivotal characteristic of democracy.¹¹ In the context of this rationale, public policy requires that

<http://www.dlib.org/dlib/september05/westrienen/09westrienen.html?utm_source=dbpia&utm_medium=article_detail&utm_campaign=reference> accessed 7 January 2015.

⁷ Carlos Juiz, Carlos Guerrero and Isaac Lera, 'Implementing Good Governance Principles for the Public Sector in Information Technology Governance Frameworks' (2014) 03 *Open Journal of Accounting* 9.

⁸ Christoph Knill and Jale Tosun, *Public Policy: A New Introduction* (Palgrave Macmillan 2012); Charles F Manski, 'Response to the Review of "Public Policy in an Uncertain World"' (2013) 123 *The Economic Journal* F412; Xun Wu and others, *The Public Policy Primer: Managing the Policy Process* (Routledge 2010).

⁹ Ed Diener and others, *Well-Being for Public Policy* (Oxford University Press 2009); Daniel Hausman, Michael McPherson and Debra Satz, *Economic Analysis, Moral Philosophy, and Public Policy* (Cambridge University Press 2016).

¹⁰ Brian Baird, 'To Improve Public Policy' (2013) 340 *Science* 432.

¹¹ Hercules Bantas, *Jurgen Habermas and Deliberative Democracy* (Smashwords 2010).

people have the opportunity to participate, they have a ‘voice’ against the structure of public policy.¹² Therefore, efficient public policy embrace these characteristics in order to enhance further access to information opportunities for people, so as to allow them to exercise contribution to public policy discussion, and to effectively monitor government and actively participate in decisions that affect their lives. Moreover, people are able to improve their living standards and better their lives when they have access to information resources and further equip their knowledge assets.¹³

In addition, the literature reflects that there are different perspectives with regards to public policy.¹⁴ It is also argued that public policy sets the theoretical framework for participatory democracy which enables a key tool for citizens to engage with the formulation of policies.¹⁵

In fact, the variety of definitions and conceptual approaches with regards to public policy highlight the ongoing considerations around the theoretical framework that public policy should be ‘located’ in.¹⁶ Social justice, in a broader sense, is about the links among citizens, institutions and governments.¹⁷ Scholars argue that an efficient public policy ought to resolve issues, satisfy equality, support governmental institutions and policies and encourage active citizenship.¹⁸ Hence, the ideal objective for public policy should be of direct relevance to social infrastructure and active citizenship.¹⁹ Therefore, public policy and governance are thus interrelated, as both require fairness, and that means adhering to principles of social justice.

Other scholars argue that government bodies should find ways to engage citizens in the policymaking process.²⁰ It is significant that values of public domain stem from governmental initiatives and actions and that these values determines an effort to

¹² Frank Fischer and Herbert Gottweis, *The Argumentative Turn Revisited: Public Policy as Communicative Practice* (Duke University Press 2012).

¹³ Richard Calland and Kristina A Bentley, ‘The Impact and Effectiveness of Transparency and Accountability Initiatives: Freedom of Information’ (Social Science Research Network 2013) SSRN Scholarly Paper ID 2305479 <<http://papers.ssrn.com/abstract=2305479>> accessed 7 September 2015.

¹⁴ David L Blustein, ‘The Role of Work in Psychological Health and Well-Being: A Conceptual, Historical, and Public Policy Perspective’ (2008) 63 *American Psychologist* 228; Guangwei Hu and Lubna Alsagoff, ‘A Public Policy Perspective on English Medium Instruction in China’ (2010) 31 *Journal of Multilingual and Multicultural Development* 365; Christoph Knill, ‘The Study of Morality Policy: Analytical Implications from a Public Policy Perspective’ (2013) 20 *Journal of European Public Policy* 309.

¹⁵ Jeffrey D Hilmer, ‘The State of Participatory Democratic Theory’ (2010) 32 *New Political Science* 43; Carole Pateman, ‘Participatory Democracy Revisited’ (2012) 10 *Perspectives on Politics* 7.

¹⁶ Jeroen PJ de Jong, Tarmo Kalvet and Wim Vanhaverbeke, ‘Exploring a Theoretical Framework to Structure the Public Policy Implications of Open Innovation’ (2010) 22 *Technology Analysis & Strategic Management* 877; David Sloan Wilson and John M Gowdy, ‘Evolution as a General Theoretical Framework for Economics and Public Policy’ (2013) 90 *Journal of Economic Behavior & Organization* S3.

¹⁷ James A Banks, ‘Teaching for Social Justice, Diversity, and Citizenship in a Global World’ (2004) 68 *The Educational Forum* 296; Ira Harkavy, ‘The Role of Universities in Advancing Citizenship and Social Justice in the 21st Century’ (2006) 1 *Education, Citizenship and Social Justice* 5; Jon F Schamber and Sandra L Mahoney, ‘The Development of Political Awareness and Social Justice Citizenship Through Community-Based Learning in a First-Year General Education Seminar’ (2008) 57 *The Journal of General Education* 75.

¹⁸ Michael Hill and Frederic Varone, *The Public Policy Process* (Routledge 2014).

¹⁹ Avi Brisman, ‘The Violence of Silence: Some Reflections on Access to Information, Public Participation in Decision-Making, and Access to Justice in Matters Concerning the Environment’ (2013) 59 *Crime, Law and Social Change* 291.

²⁰ Ann Capling, Patrick Low and World Trade Organization, *Governments, Non-State Actors and Trade Policy-Making: Negotiating Preferentially Or Multilaterally?* (Cambridge University Press 2010); Christopher D Piros and Jerald E Pinto, *Economics for Investment Decision Makers: Micro, Macro, and International Economics* (John Wiley & Sons 2013).

benchmark the total benefits.²¹ Nevertheless, it also reflects the public's perception of fairness and distributional equity, as well as implications of service provision for trust and legitimacy arising from co-production of services.²² Citizens' participation provides an opportunity to influence public decisions and has long been a component of the democratic decision-making process.²³ Public administration is progressively concerned with placing the citizen at the core of policymakers' decisions.²⁴ Not only is citizens' participation crucial to the scope of public policy, but it is also an additional instrument to better governance.²⁵

Brown argues that participatory democracy is direct democracy in the sense that all citizens are actively involved in important policy formulations.²⁶ Participatory democracy commonly refers to movements, such as the civil rights movement or the women's suffrage movement, which gather a group of people who make decisions democratically to represent the group.²⁷ In general, it is a concept centrally focused on political considerations towards the improvement of collective decision-making.²⁸ It emphasizes citizens' right to participate and from an individual perspective considers the importance of such right. In other words, participatory democracy shows that citizens are subjected to a collective decision process and the opportunity to participate in consequential deliberation about that decision is of high importance.²⁹

Pateman argues that participatory democracy is often treated as a normative argument concerned with aspirations. Hence, participatory democracy establishes an ideal and that so do the green open access in terms of information distribution. However, both are desirable aspirations. The paper aims to argue that green open access governance can be also considered as a fundamental element for participatory democracy and that public policy has the potential to improve such governance. Certainly, active citizens can influence public policy by being involved in policy formulation.³⁰ Following that, it

²¹ Robert P Merges, 'A New Dynamism in the Public Domain' (2004) 71 *The University of Chicago Law Review* 183; Udo Pesch, 'Administrators and Accountability: The Plurality of Value Systems in the Public Domain' (2008) 10 *Public Integrity* 335.

²² Jan Donovan, 'Engaging Stakeholders and Citizens in Developing Public Policy' (2003) 3.

²³ Denis Bouyssou and others, *Decision Making Process: Concepts and Methods* (John Wiley & Sons 2013).

²⁴ There are differing views about how public policy is formed. For further discussion about this, see Dunn (2003). For example, there are advocates who claim that public policy can be made by leaders of religious and cultural institutions for the benefit of the congregation and participants. Also see Hesmondalgh (2005) and Kahan and Braman (2005). Hesmondalgh argues that policymakers should be guided by core principles such as transparency, accessibility and openness concerning bureaucratic and decision processes. Moreover, he states, politicians and public servants are accountable to the public, and this principle illustrates the importance of public policy towards desired solutions for social concerns. It follows that policymakers should support freely accessed information sources through proper public policy. Therefore, public policy and its formulation ought to stem from the public will or the public interest.

²⁵ M Fagence, *Citizen Participation in Planning* (Elsevier 2014).

²⁶ Wendy Brown, 'Power after Foucault', *The Oxford Handbook of Political Theory* (Oxford University Press 2006).

²⁷ Ian Brown and Christopher T Marsden, *Regulating Code: Good Governance and Better Regulation in the Information Age* (The MIT Press 2013).

²⁸ Samantha Besson and José Luis Martí, *Deliberative Democracy and Its Discontents* (Ashgate Publishing, Ltd 2006).

²⁹ Cristina Lafont, 'Deliberation, Participation, and Democratic Legitimacy: Should Deliberative Mini-Publics Shape Public Policy?' (2015) 23 *Journal of Political Philosophy* 40.

³⁰ Tessa Brannan, Peter John and Gerry Stoker, 'Active Citizenship and Effective Public Services and Programmes: How Can We Know What Really Works?' (2006) 43 *Urban Studies* 993; John Annette, 'Active Learning for Active Citizenship': Democratic Citizenship and Lifelong Learning' (2009) 4 *Education, Citizenship and Social Justice* 149; Bryony L Hoskins and Massimiliano Mascherini, 'Measuring Active Citizenship through the Development of a Composite Indicator' (2009) 90 *Social Indicators Research* 459.

should be questioned: what are the ways to create social consensus within participatory democracy? The following part of the discussion articulates rationales for engaging people in creating fairer regulations which potentially helps in the governance of green open access.

1.2 Public policy as a basis for governance

The first issue to be examined is the importance of public policy as a basis for governance. In order to address this issue, it is necessary to consider the role of public policy in guiding legislative formulation and its value concerning issues related to the green open access governance. The literature shows that the concept of governance has been aptly considered as an instrument for problem-solving.³¹ As far as the public sector is concerned, the concept of governance takes place in a theoretical context distinguished by policy, legislation, and organisational culture where social circumstances are shaped by economic, social, political and cultural considerations. Correspondingly, relevant legislation stemming from such governance framework protects intellectual property rights and is of paramount significance towards the increase of information distribution. Therefore, it should be examined.

According to Lehman and Phelps, public policy is a principle according to which no person or government official can legally perform an act that tends to injure the public.³² Furthermore, public policy manifests the common sense and common conscience of the citizens that extends throughout the state and is applied to matters of public health, safety and welfare.³³ Another perspective regarding public policy argues that public policy establishes a system of law, regulatory measures, courses of action and funding priorities for a given topic promulgated by a government entity and its representatives.³⁴ It is acknowledged that public policy gathers pivotal content, which is inevitably linked with laws. Moreover, individuals and groups of people often attempt to shape public policy through education advocacy or by mobilising interest groups. Therefore, it is logical to assume that the process always follows inherent actions that stem from interest groups desire to influence policy formulation in their favour. Therefore, another aspect of public policy is the process of laws formulation.

Geurts characterizes public policy as a complex, dynamic, constantly evolving, interactive and adaptive system. Its 'making' process is stakeholder-driven. Actors are engaged in a goal-driven decision-making process and have a great deal of autonomy in the way they organize their work. The process has two dimensions: a political dimension and a production dimension.³⁵ Thus, it is clear that the subject matter of public policy is of paramount importance from the economic, political and legal perspectives. Therefore, public policy can be seen as governmental effort to address a public concern by introducing laws, initiatives, and actions that are pertinent to the concern at hand. Furthermore, the government efforts aims to be harmonized with the public concern

³¹ Christopher Ansell and Jacob Torfing, *Handbook on Theories of Governance* (Edward Elgar Pub 2017).

³² Jeffrey Lehman and Shirelle Phelps, *West's Encyclopedia of American Law* (Thomson/Gale 2005).

³³ Munir A Hanjra and others, 'Wastewater Irrigation and Environmental Health: Implications for Water Governance and Public Policy' (2012) 215 *International Journal of Hygiene and Environmental Health* 255; Nick Watts and others, 'Health and Climate Change: Policy Responses to Protect Public Health' (2015) 386 *The Lancet* 1861.

³⁴ Frank Fischer and Gerald J Miller, *Handbook of Public Policy Analysis: Theory, Politics, and Methods* (Routledge 2017).

³⁵ Thei Geurts, 'Public Policy Making: The 21st Century Perspective' (*Be Informed - The Business Process Platform*, 18 July 2011) <<http://beinformedblog.blogspot.com.au/2011/07/public-policy-making-21st-century.html>> accessed 31 May 2015.

which is also addressed through ongoing technological advancements.³⁶

Further, Habermas has developed the concept of *public sphere*³⁷ in order to delineate its proper operational framework.³⁸ On the basis of Habermas' work, the simplicity of the public sphere forms a reality in which different considerations, specifically to address societal needs, are clearly and freely traded, unrestrained by exterior compulsions. Habermas' *public sphere* offers an appropriate framework for an effective public policy basis in relation to green open access practice. However, in order to examine public policy as basis and benchmark, Habermas' views on 'public sphere' and its content, should be considered. For Habermas, the 'public sphere' is a social area where individuals come together to freely discuss and identify social concerns, and within this discussion, political action is influenced. Habermas' *public sphere* signifies access to channels of socialising through a more active participation by citizens. It is implied that such access is guaranteed to citizens. As a result, citizens act as a public body when they confer in an unrestricted fashion on public interest matters. Therefore, in a large public body, this kind of communication requires tools for exchange and information distribution.

Additionally, Habermas' *public sphere* is an incoherent space where individuals and stakeholders assemble to argue about issues of common interest and, where feasible, reach a mutual decision. Accordingly, the *public sphere* can be seen as a 'theatre' in contemporary societies where political participation is enacted through the medium of discussion and as a realm of social life where public opinion is well constructed. Habermas argues that the *public sphere* was coextensive with public authority. For this reason, an inherent characteristic of public policy, from Aristotlian perspective, is public authority.³⁹ Such authority can have a parallel meaning to public policy; hence, its norms and forms are of paramount importance in relation to public interest and information access.

According to Habermas', government's laws and policies should be steered by the *public sphere*, and the only legitimate governments are those that comprehend its importance. Hence, public policy stems from this discussion, and individual needs are a basic part of its subject matter. Taking all this into account, an efficient governance framework for OARs ought to have an inevitable link with public opinion, public interest and mutual judgement.

Considerable debate prevails over whether there is one coherent set of principles that can govern the study and understanding of the public policy process.⁴⁰ As in every field of endeavour, the definition of key terms and ideas is often very important, but it can also lead to considerable contention. The proper author of public policy is a subject of continuing debate. It has been suggested that public policies can be made by leaders of

³⁶ For further information regarding public policy, see Smith and Larimer (2013), Theodoulou and Cahn (2012) and Birkland (2010).

³⁷ Jürgen Habermas is a German sociologist and philosopher in the tradition of critical theory and pragmatism. He was one of the second generation of philosophers and social theorists in the Frankfurt School whose members included Horkheimer, Adorno, Walter Benjamin, Erich Fromm and Herbert Marcuse. Moreover, global polls consistently find that Habermas is widely acknowledged as one of the world's leading intellectuals. To sum up, his significant (and continuing) contributions in the late twentieth and early twenty-first centuries to philosophy, political theory, communication theory, critical social theory, legal theory, critical education studies, among other disciplines, are renowned.

³⁸ Jürgen Habermas, *The Theory of Communicative Action: Reason and the Rationalization of Society, Volume 1: Reason and the Rationalization of Society Vol 1* (1 edition, Polity 2015).

³⁹ Aristotle, *The Nicomachean Ethics* (Lesley Brown ed, David Ross tr, Revised edition, Oxford University Press 2009).

⁴⁰ E Sørensen and J Torfing, *Theories of Democratic Network Governance* (Springer 2016).

religious and cultural institutions for the benefit of the congregation and participants. The literature reflects that there are many possible ways to define public policy.⁴¹ Scholars argue that public policy is whatever governments decide to do or not to do.⁴² According to Peters, public policy defines the sum of government activities, whether acting directly or through agents, as it has an influence on the life of citizens.⁴³ Other scholars state that public policy consists of political decisions for the implementation of programmes to achieve societal objectives.⁴⁴

Reaching a consensus on one definition of public policy seems to be problematic since all of the variants of the definition suggest that public policymaking is public.⁴⁵ Governmental policies are sometimes controversial and frustrating, yet very important. But because the public is the source of political authority – that is, the authority to act on the public's behalf – it is clear that the government is at the centre of efforts to make public policy.

As a result, this issue should be examined in relation to open access, its influences and its significant link to technological developments. A contrary view is that public policy and its formulation ought to stem from the public will or the public interest. Piros and Pinto, for example, note that the challenge for governments is to find a way to engage others in the policymaking process.⁴⁶ However, it should not be forgotten that citizens' participation is fundamental. It is acknowledged that the infrastructure of public administration is progressively concerned with placing the citizen at the core of policymakers' decisions. Not only is citizens' participation crucial in relation to the long-term outcomes of their governance, but it is also an agent for relevant decisions.⁴⁷ Additionally, the issue of citizens' participation is part of a large debate among scholars and thus provides individuals with an opportunity to influence public decisions and has long been a component of the democratic decision-making process.⁴⁸ Simultaneously, the environment for policy and designation has grown in complexity. The ownership of concepts is usually blurred, particularly when more than one department, ministry or levels of government are concerned.⁴⁹

2. Open Access Practice

Open access is defined as the practice of providing online access to scientific content that is free of charge to the reader. In the context of research and development, open access typically focuses on access to scientific information, which refers to two

⁴¹ Lafont (n 29).

⁴² Thomas R Dye, *Understanding Public Policy* (Prentice Hall 1995).

⁴³ B Guy Peters, 'Governance as Political Theory', *Civil Society and Governance in China* (Palgrave Macmillan, New York 2012) <https://link.springer.com/chapter/10.1057/9781137092496_2> accessed 4 November 2017.

⁴⁴ Charles L Cochran and Eloise F Malone, *Public Policy: Perspectives and Choices* (Lynne Rienner Publishers 2014).

⁴⁵ Beatrice Crona and John Parker, 'Learning in Support of Governance: Theories, Methods, and a Framework to Assess How Bridging Organizations Contribute to Adaptive Resource Governance' (2012) 17 *Ecology and Society* <<https://www.ecologyandsociety.org/vol17/iss1/art32/>> accessed 21 April 2019.

⁴⁶ It is imperative to realise that the term of public value stems from government actions and is an effort that concerns benchmarking the total benefits flowed. Nevertheless, it also reflects the public's perception of fairness and distributional equity, implications of service provision for trust and legitimacy and the benefits arising from co-production of services. For further information see Donovan (2003).

⁴⁷ Douglas R Holmes, *Integral Europe: Fast-Capitalism, Multiculturalism, Neofascism* (Princeton University Press 2010).

⁴⁸ Steven Grabow, Mark Hilliker and Joseph Moskal, *Comprehensive Planning and Citizen Participation* (Extension Service 2006).

⁴⁹ Henry E Smith, 'Property Is Not Just a Bundle of Rights' (2011) 8 279.

critical categories: a) peer-reviewed scientific research articles (published in academic journals) and b) scientific research data (data underlying publications and/or raw data).

In relation to open access, it is crucial to identify what it actually entails. The practice of open access was initially defined during a meeting in Budapest among a diverse group of open access advocates who were brought together by the Open Society Institute in early December 2001.⁵⁰ In accordance with this definition, open access makes articles freely available on the Internet, permitting any user to read, download, copy, distribute, print, search or link to the full texts of these articles; open access also allows readers to trawl articles for indexing, pass them on as data for software or use them for any other lawful purpose, without financial, legal or technical barriers other than those inseparable from gaining access to the Internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.

2.1 Open access repositories: the green open access

It is a given fact that the conditions of the modern information environment have evolved through the years, touching on every social aspect of everyday life.⁵¹ It is also worth mentioning that among every generation of end users, there is a gap in skills with regard to information and communication technologies, obtained through education or lifelong learning. Based on these skills, one is able to fully satisfy information needs within access to any type of information service. Thus, it led to a social division between information-rich (*i.e.* those with access to information) and information-poor individuals (*i.e.* those deprived of such access), resulting in informational, and consequently social, inequalities.

By introducing the concept of the Internet and its infrastructure during the 1990s, important change was inflicted on utility and information access opportunities. Moreover, several journals and editions adopted different types of formats. In particular, the traditional print format converted to electronic ones, and journals started publishing their content digitally a few months earlier than the printed edition. As a result, the content of journals became available to registered users by limiting postal delay and annihilating distance by providing home access to information. Thus, it is clear that there is fertile ground for introducing important changes to the information model through an upcoming revolution that could be brought through open access to information via institutional repositories.

3. Public policy and green open access: a ‘relationship’ to consider

To determine the proper public policy basis for open access repositories, it is necessary to examine relevant economic, social, information and technology policies in the area. It is further necessary to evaluate the merits of these theories, identify inconsistencies between such theories and consider tensions in the applications of such theories.

3.1 Social Policies in Support of Free Exchange and Access to Information

⁵⁰ Stefan Baack, ‘Datafication and Empowerment: How the Open Data Movement Re-Articulates Notions of Democracy, Participation, and Journalism’ (2015) 2 *Big Data & Society* <<https://doi.org/10.1177/2053951715594634>> accessed 2 September 2019.

⁵¹ Maria Bottis, ‘The Protection of Private Life and the European Legislation with Regard to Personal Data: Thoughts on the Protection of Private Life in the USA’, *Honorary Volume, Stathopoulos* (Sakkoulas 2009).

Scholars argue that democracy is a system of government with four key elements: (i) a political system for choosing and replacing the government through free and fair elections, (ii) the active participation of the people, as citizens, in politics and civic life, (iii) the protection of the human rights of all citizens and (iv) a rule of law, in which laws and procedures apply equally to all citizens.⁵² Moreover, it is understood that governments ought to provide services for citizens' in order to maintain equality and protect human rights.

It should be mentioned that there is an imminent link between governments and people that manifests in elections. Furthermore, the preceding democratic procedure aims to elect a new government that ought to serve the virtue of democracy by balancing different types of interests.⁵³ Therefore, the relationship between government and citizens should be addressed as it illustrates the importance of a proper public policy basis from the social perspective.

According to Fischer, there are five main strategies that should be implemented by governments for fostering incentives for innovation and constructing a 'social cell' in regard to information preservation and distribution. In addition, within these five strategies there are social theories based on the rapid growth of technology for a proper public policy basis in order to balance the interests of copyright owners and end users. Specifically, the five strategies include (i) the social theory of technological innovation, (ii) innovative initiatives theory, (iii) the theory of productive relationship, (iv) the theory of pros or the positive theory and (v) the theory of grants.

Within the social theory of technological innovation, governments can engage in technological innovation themselves. With respect to many sorts of public goods, governments have for centuries responded to the risk of suboptimal private-sector production by supplying the relevant objects or services themselves. Hence, the same theory can be employed in the governmental public policy context of information protection and dissemination. In particular, governmental initiatives should be increased and spread to society.

According to the second theory of innovative initiatives, governments can contribute to innovative initiatives by private actors and thus illustrate that private sector can further support the public good of information conservation and dissemination by implementing the necessary public policy basis for effective governance of OARs.

Third, the theory of productive relationship is based on the idea that there should be a productive relationship between government and citizens. Therefore, prizes and rewards ought to be offered to individuals and organisations who contribute to society by providing beneficial innovations.

Fourth, the theory of pros or the positive theory, in the context of IP law, posits that governments can assist creators (or innovators) by disguising public information that is essential to implement their innovations. Thus, incentives are offered to other persons who wish to take advantage of those breakthroughs.

Finally, the theory of grants argues that governments may grant innovators exclusive rights to engage in certain kinds of activities with respect to their innovations. Yet it is illustrated that social justice is of paramount importance for the modern knowledge economy.

⁵² Larry Diamond, 'What Is Democracy?' <<https://web.stanford.edu/~ldiamond/iraq/WhatsDemocracy012004.htm>> accessed 10 November 2014.

⁵³ Roberto Caso and Federica Giovanella, 'Balancing Copyright Law in the Digital Age - Comparative Perspectives: Preface' (Social Science Research Network 2014) SSRN Scholarly Paper ID 2529954 <<https://papers.ssrn.com/abstract=2529954>> accessed 17 December 2016.

3.2 Economic theories for intellectual property

The literature shows that the examination of IP has competing interests involved (*i.e.* those of copyright owners and end users) and could lead someone to investigate their economic impact on the balance among competing IPRs within the legislative framework.⁵⁴ Therefore, economic justifications of IP should be considered as additional means to support the appropriate public policy applied to benefit the governance of OARs.⁵⁵ According to this logic, the economic parameter that stems from IP is of paramount importance. Moreover, economists explore ways of efficiently allocating scarce resources to unlimited wants and realise that private property rights are a plausible way of dealing efficiently with scarcity.⁵⁶ Thus, this issue should be addressed in order to delineate the focal research question of this article.

However, there are advocates who argue that inventions are utilitarian works and that, therefore, the principal economic theory applied is about utilitarianism.⁵⁷ Kapczynski (2012) argues that the field of intellectual property should only use the utilitarian-efficiency approach. Moreover, utilitarian theorists generally endorse the creation of intellectual property rights as an appropriate instrument to foster innovation.⁵⁸ It is argued that the public, authors and inventors have ‘signed’ a social contract in which the public grants authors and inventors exclusive rights to their works for a limited duration, which provide enough incentive for them to create and develop.⁵⁹ Yet once the exclusivity period expires, the rights are transferred to the public and become part of the public domain. Hence, it is acknowledged that freedom of expression, creation, dissemination of information and its protection ought to coexist in order to support effective outcomes such as innovation. Nevertheless, this justification illustrates the importance of a creator’s rights in relation to social evolution and the appropriate way that it can be shared while under protection.

In addition, it is undeniable that the majority of authors who pursued economic analyses of intellectual property have relied on the ‘Kaldor-Hicks’ criterion. The criterion helps lawmakers select a system of regulations that maximizes the aggregate welfare, which is measured by the end users’ ability and willingness to pay for goods and services in relation to information.⁶⁰ Nevertheless, they disagree sharply about the implications of that criterion in this discipline. Thus, three different economic justifications dominate the literature.

The incentive theory, which is the most common, claims that an optimal doctrine is the one that maximizes the difference between (a) the current discounted value to end users of the intellectual products whose creation is induced by holding out to creators and inventors the carrot of monopoly power and (b) the ensemble detriments generated by

⁵⁴ Daniele Archibugi and Andrea Filippetti, ‘The Globalisation of Intellectual Property Rights: Four Learned Lessons and Four Theses’ (2010) 1 *Global Policy* 137.

⁵⁵ Catherine Colston and Kirsty Middleton, *Modern Intellectual Property Law* (Psychology Press 2005).

⁵⁶ Meir Perez Pugatch, *The International Political Economy of Intellectual Property Rights* (Edward Elgar Publishing 2004).

⁵⁷ Frank Arntzenius, ‘UTILITARIANISM, DECISION THEORY AND ETERNITY’ (2014) 28 *Philosophical Perspectives* 31.

⁵⁸ Peter S Menell, ‘Intellectual Property and the Property Rights Movement’ (Social Science Research Network 2007) <<http://papers.ssrn.com/abstract=1000061>> accessed 11 October 2014.

⁵⁹ Richard A Posner, ‘Intellectual Property: The Law and Economics Approach’ (2005) 19 *The Journal of Economic Perspectives* 57; Steven Shavell, *Foundations of Economic Analysis of Law* (Harvard University Press 2009).

⁶⁰ DN Dwivedi, *Microeconomics: Theory And Applications* (Pearson Education India 2002); Aristides N Hatzis and Nicholas Mercuro, *Law and Economics: Philosophical Issues and Fundamental Questions* (Routledge 2015).

such a system of incentives.⁶¹ In other words, this theory urges a governmental lawmaker to establish or grow intellectual property protection. Doing so would help end users by stimulating creativity more than it would hurt them by constricting their access to intellectual products or raising their taxes.

Another one important economic justification is relevant to the patent systems.⁶² Further, its objective is to eliminate or reduce the tendency of intellectual property rights to advance duplicative or uncoordinated inventive activity.⁶³ Economic waste of this sort can occur at the three stages in the inventive process.

Finally, it is indispensable to realise that copyright and patent systems play crucial roles in letting potential producers of intellectual products know what end users want. Hence, they channel productive outcomes in directions most likely to enhance the welfare of end users. Based on this rationale, sales and licences will ensure that goods get into the hands of people who need them and who have the ability to pay for them. Only under specific circumstances where transaction costs would prevent such voluntary exchanges should the holders of intellectual property rights be denied total scrutinisation in relation to the use of their works. Therefore, the necessity of a public policy basis is imperative when concerning the governance of open access repositories.

3.3 The Relationship between Communication Technologies and Public Policy

A further dimension to be considered is the interplay between communication technologies and relevant advancements with public policy and its objectives. It is recognized that the discourse about the relationship between communication technologies and public policy ranges across an extensive assortment of concerns. For example, the concern of this article is about the social role of communication scholarship in relation to the analysis and implementation of public policy. As Peterson (2008) claims, the communication is one site where policy is publicly worked over and is the subject of public policy, most notably in laws and regulations on forms of speech, mass media and telecommunication. Therefore, it is admitted that this issue should be examined from a sociological perspective, based on theories relevant to social policy.

It is recognised that communication technologies have created an enormous change in the way that information is generated, regenerated and distributed. Therefore, relevant decisions to adopt appropriate governance frameworks and copyright laws for arising communication technologies and usages of works are complicated.⁶⁴ Thus, it is understood that this issue should be examined as the focal research question of this article is how the public policy basis should be formed to facilitate OARs. Hence, another issue that should be addressed and offer information relevant to this question is the inevitable relationship between communication technologies and public policy.

The significance of communication technologies in conjunction with public policy was depicted within the twenty first meeting of the International Colloquium on Communication in 2008, which focused on communication and public policy.⁶⁵ Moreover, it is undeniable that information is of paramount importance in relation to communication technologies. As Drahos) states, the term of information is the most

⁶¹ Koutras (n 1).

⁶² Robert P Merges, *Justifying Intellectual Property* (Harvard University Press 2011).

⁶³ Peter S Menell, Mark A Lemley and Robert P Merges, *Intellectual Property in the New Technological Age 2017: Vol. II Copyrights, Trademarks and State IP Protections* (Clause 8 Publishing 2017).

⁶⁴ Sophia Christou and Alana Maurushat, “Waltzing Matilda” or “Advance Australia Fair”? User-Generated Content and Fair Dealing in Australian Copyright Law’ (Social Science Research Network 2009) SSRN Scholarly Paper ID 1457570 <<http://papers.ssrn.com/abstract=1457570>> accessed 11 October 2014.

⁶⁵ Eric Peterson, ‘An Introduction to Communication and Public Policy’ (2009).

significant primary good. Yet he insists that this stems from its role in the economy, the development of knowledge and culture and its impact on power in a society.⁶⁶ This is beneficial in order to understand the crucial role of information regarding the needs relevant to communication.

Other scholars also claim that the importance of information as primary good can be valued beneficially by concentrating on the outcomes of its imperfect deficient dispersion.⁶⁷ Prejudgements of various kinds are paradigms of deficient dispersion. However, it is not acceptable to embrace these negative aspects as far as the concept of communication technologies and its contexts are examined in relation to public policy modern regimes. To sum up, it is understood that public policy is another concept that can outperform the rapid development of communication technologies. Therefore, it should be adopted to these evolved norms and frameworks rather than being effective and more responsive to the needs of citizens at the national and international levels.

4. Discussion

The paper argues that the interplay between public policy and open access governance brings legal issues (i.e. copyright protection) that should be considered. The discussion demonstrated that a proposal for a dynamic socio-economic regime has a potential to enhance copyright protection. The proposed framework objects to reconcile and combine the social and economic principles of the theories discussed previously. In this respect, combining a social theory with an economic one sets the background to build a scientific approach or strategy to counterbalance stakeholders' interest.

In contemporary times, technological advancements are ongoing with great impact on societies. As response to emerging challenges, governments could provide incentives of engagement with in technological innovation to citizens (i.e. individuals). In other words, governments ought to take additional and more sophisticated initiatives to boost individuals' creativity and support relatively close copyright protection. Additionally, the literature reflects that governments should consider the potentials and dynamics that stem from citizens' contribution towards public goods production.⁶⁸ Therefore, governments should play vital role as regards initiatives to increase people's creativity and efforts towards further innovation. This social theory sets up a societal finality on behalf of governments' role and its contribution to society. Hence, this theory should be complementary to the applied public policy in the context of initiatives to support intellectual protection and further information dissemination.

Given this, the incentive theory demonstrates the economic theory that should be another complementary element of the proposed socio-economic framework of operation. Accordingly, it is maintained that governmental lawmakers should pursue increased intellectual property protection while stimulating individuals' creativity, which in turn helps further innovation. It is also argued that inventions do not generally implicate the personal interests of the creator.⁶⁹

The proposed framework could be called the 'Tech-Incentive' framework. This framework sets up the appropriate basis for providing incentives for technological innovation. Additionally, it has potential to be applied in the context of public policy on behalf of government: (a) to further support intellectual property protection, (b) to

⁶⁶ P Drahos, *Regulatory Theory: Foundations and Applications* (ANU Press 2017).

⁶⁷ Rochelle Cooper Dreyfuss and Justine Pila, *The Oxford Handbook of Intellectual Property Law* (Oxford University Press 2018).

⁶⁸ Lionel Orchard and Hugh Stretton, *Public Goods, Public Enterprise, Public Choice: Theoretical Foundations of the Contemporary Attack on Government* (Springer 2016).

⁶⁹ Akash Kamal Mishra, *Intellectual Property Rights In Cyberspace* (Cyberlekh Publications 2019).

increase stakeholders' involvement from different societal (e.g. an informal Non-Governmental Organisation) and governmental layers (e.g. the National Ministry of Research and Technology) towards the increase of creativity that adds value to societal benefits and public good, (c) to facilitate access opportunities to scientific information produced by educational institutes (i.e. universities, colleges, senior schools, research centres, research institutes) and (d) to boost dissemination of information via green open access.