GOOD GOVERNANCE IN THE FRAMEWORK OF RESPONSIBLE INNOVATIONAND RESPONSIBLE RESEARCH

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ABSTRACT

Good Governance deals with concepts such as sustainable development, rural and urban development and economic and social progress with participation and transparency approach and emphasizes on adopting the correct strategies for implementing policies. Responsible innovation and research play a key role in good governance. This research can show a clear path in the development of innovation and responsible research in good governance at both academic and firm research levels. Responsible research and innovation strategies in good governance are sometimes very distinctive and innovative, and sometimes they are changes and modifications of previous structures that can be categorized into specific frameworks. In developing societies, due to its inefficiencies and weaknesses, responsible innovation and research in governance are not seriously considered. Understanding these strategies and implementing them through mechanisms can be helpful in predicting complementary governance measures in order to implement them. The aim of this study is to identify these strategies. In this research, through systematic literature review studies and holding expert panels, key concepts and strategies in the field of research and innovation have been identified and introduced responsibly in the context of good governance.

Keywords: Governance, Policy Research, Good Governance, Responsible Innovation, Responsible Research.

INTRODUCTION

Responsible innovation and responsible research can be considered as a concept that has been promoted to expand the scope of politics, demonstrate the path of innovation and determine the role of actors in society (Levidow & Neubauer, 2014). The concept of RRI is an attempt to promote a new governance approach to research and innovation. It has been described as "*a way of thinking more systematically about the general benefits of scientific and technological research*" (Baldwin et al., 2013; Timmermans et al, 2017). Different definitions are the main factors of the RRI discourse. For example, the broad definition provided by Von Schomberg (2012) is closely related to the trends and values raised in EU policies (Stilgoe et al., 2013). Von Schomberg defined RRI as a "*design strategy that drives innovation and leads towards*" achieving the desired goals of society (Von Schomberg, 2012). Most researchers have explained von Schumberg's definition of von Schomberg by emphasizing on predicting possible outcomes and social expectations and engaging stakeholders and people in the research and innovation process (Bremer, et al., 2015; Forsberg et al., 2015). However, several other authors have offered their definition of RRI. Most of the authors who have introduced academic definitions of RRI have cited public participation as a vital part of RRI. Other aspects such as prediction, responsiveness, reflexibility, desirability, acceptability and innovation are sometimes mentioned.

Responsible Innovation (RI) and Responsible Innovation and Research (RRI) have been considered as the most important topics in the relationship between innovation and research with society in recent years Thapa et al. (2019); Rocco et al**.** (2011) listed four characteristics of responsible innovation as follows: (1) transformation in the scope of existing arrangements, (2) consideration of fair access, health, safety and environmental concerns, (3) partnerships between government agencies and other stakeholders, and (4) long-term measures for forecasting and compliance(Roco et al., 2011).

Responsible research and innovation is a transparent and interactive process in which the actors and innovators of the society are responsive to each other from the perspective of innovation process and marketable products, considering the acceptability (ethical), sustainability and social desirability. (In order to institutionalize scientific and technological advances in society While RRI's origins date back to the early 1990s (Owen, 2014), the concept has received particular attention in EU policy and research societies since 2011.   The RRI concept was disputed from discourses on emerging technologies and research ethics in innovative fields Owen (2014) and has been further driven by European research and innovation policies over the past few years (Auer & Jarmai, 2018).

RRI is a policy-driven discourse that has been formed since 2011 at the European Commission (EC) preparations. At the macro level, it aims to foster an inclusive and sustainable research and innovation plan, with an emphasis on harmony with society ("*science with society and for society*"). Therefore, research and innovations are tried to match the values, needs and expectations of the community (with strong emphasis on "*the main challenges of society*".

It also seeks to predict and evaluate more consequences of research and innovation in an ethical, inclusive and responsible way.   Under the EU Framework for Horizon 2020, RRI was formally raised as a key issue, and funding for its projects began in earnest in the Science for Society programme (now "*Science with and for Society*"). Therefore, in 2014, the mainstream RRI was introduced throughout the EU region through the "*Rome Declaration on RRI*" project (Thapa et al., 2019). In this study, based on systematic literature review and holding expert panels, the evolution of the concept of responsible research and responsible innovation in literature is investigated. Also, its dimensions are analyzed in terms of Good Governance.

LITERATURE REVIEW

Responsible Research and Innovation

In May 2011, the European Union demonstrated its commitment to RRI through some related measures (including the formulation of a program budget of research and coordination support measures from the Relevant Fourth Plan (FP7) in the Horizon 2020 project) and formed a specialized committee to advance the RRI-related programs. The Horizon 2020 Executive Regulations are primarily founded on collaboration between science and society and strengthening public confidence in science. In 2012, Meyer Quinn, then EU Commissioner for Science, Research and Innovation, formally announced the support of the EU's macro-policy levels from RRI. The eu's recent agenda, "*Open Global Interactions*", has also been introduced in the RRI discourse in association with non- European countries. However, beyond Europe, in emerging global economies (Brazil, India and China) as well as in some advanced economies (Japan, Australia), there is relative awareness of the concept of RRI (Brom et al., 2015). If the concept of RRI wants to be considered as a well-known concept in other countries and other initiatives and research areas, it should be able to take significant relevant measures. Engaging

and interacting with global actors of science and technology and their sometimes different and sometimes distinct needs can work for nations where the RRI discourse is underdeveloped and not considered a priority. To clarify innovation and research and make it responsible (Macnaghten et al., 2014). The European Commission has described six distinct dimensions as different dimensions of RRI: engagement, gender equality, science education, ethics, open access and sovereignty ("*Regulation (EU) No. 1291/2013*," (Parliament & Union, 2013). Of course, the discussion of ethics and some other related issues in science, technology, research and innovation in general is not a new issue, but the concept of RRI has recently been proposedfor the inclusion of responsibility in research and innovation policies and methods (Flick, 2016; Stilgoe et al., 2013; Von Schomberg, 2012).

In his research, Stahl (2013) focused on the practical implementation of dimensions that arise for actors, norms and activities. Different authors have pointed to previous dimensions that were not originally associated with RRI. Stahl 2013; listed four dimensions that were discussed during public debate: anticipation, inclusion, reflectivity and accountability. This framework for RRI focuses on four integrated dimensions. Stilgoe et al. (2013) These cases have been adapted and approved based on studies by the UK Engineering and Physical Sciences Research Council on the formation of the AREA Framework (Prediction, Reflection, Interaction and Practice) (Owen, 2014). Also, in 2013, Stilgo and his colleagues presented a broader definition of RRI as "*future care through the collective management of the existing level of science and innovation*" (Stilgoe et al.,2013).

Good Governance

Although the discussion of Good Governance in many scientific circles is based on languages, it is seen that users of this concept have different understandings of it.   Therefore, it is necessary to examine it as lexical and conceptual in order to clarify our purpose of Good Governance.

The word "*rule*" is one of the oldest and newest words in the study of political science (Babaei & Tavakkoli, 2015). Analysis of the concept of governance indicates its conceptual scope in a way that includes all forms of governance such as corporate, local, national governance (government, civil society and private sector) and international (Mohammadi et al, 2022).

In the most general use, governance of the movement from the previous approach to the name of the state (the top-down legislative approach that seeks to regulate the behavior of individuals and institutions in a clear and completely detailed manner) towards H. Analysis (a approach that attempts to adjust the system parameters in such a way that individuals and institutions operate within it, resulting in self-regulation and the system achieving the desired results) or replacing it with « The exercise of power emphasizes "*the transfer of power to*" (Tavakkoli et al, 2020). A combination of different motives and willingness to follow the goals of an organization in intermediate organizations makes it possible to establish a general set of rules of government. Traditionally, governance in commercial enterprises focuses on the role of the board of directors in representing and protecting the interests of shareholders. Governance studies in nonprofit areas alsoemphasize the role of trusted delegations in protecting the interests of members of that community. Governance in public administration, in addition to paying attention to the activities of the mentioned boards, mainly considers the supervisory and budgeting role of government organizations. This role of government agencies is more important in the activities of private organizations that sign public service contracts.

Transition from state to rule involves two important processes:

First, an increasing number of actors outside the official government boundaries have enteredthe process of governing, and this process is based on networks of actors connected to the public, private and volunteer sectors – rather than the hierarchy defined by the government.

-Second, the internal organization of the government has become more complex and multi- level and has been infiltrated by subnational and transnational inputs. Some also define governance as "*structures and processes by which people in society make decisions, regulate laws and share power*".

Good governance is a model for reforming the public sector, strengthening civil society and accelerating private sector participation. The reason for the creation and publication of this type of governance can be the result of changing World Bank policies from government downsizing approach to government empowerment approach. In fact, by revising the versionsof structural adjustment and privatization of its vacuum cleaner in the 1980s and 1990s under the influence of the new public administration paradigm, the World Bank introduces Good Governance as a tool and condition for the successful realization of privatization and economic competition and facilitating the market system and civil partnership.

On the other hand, the concept of Good Governance has been subjected to different interpretations due to its newness, some individuals or institutions define it with its characteristics (World Bank experts), and others introduce it with its elements.

As one of the most prestigious international bodies in a report published in 1989, the World Bank has for the first time defined Good Governance as providing efficient public services, a reliable judicial system and a responsive administrative system.

The United Nations Development Programme (UNDP) defines rule as the exercise of political, economic and administrative power to manage the country's affairs at all levels (UNDP, 1992). Optimal rule is the mechanisms, processes and institutions by which citizens, groups and civil institutions legally pursue and enforce their interests and fulfill their obligations. Babaei & tavakkoli(2015); Babaei et al. (2017) has defined governance as the use of political authority and the exercise of control over society and resource management for social and economic development.

RESEARCH METHODOLOGY

Researches can be categorized from different points of view. In terms of research philosophy, the ability of the present study was considered as critical research, because the researcher, with an analytical and critical perspective, reviewed the studies in order to provide a precise classification of the concepts and strategies of Good Governance from the perspective of innovation and responsible research.

In critical researches, each researcher has its own subjective assumptions and analyzes and critiques according to these assumptions. In order to identify these strategies and concepts, the researcher follows two important assumptions. In terms of purpose, researches aredivided into three categories: fundamental, developmental and applied. Considering that this research is derived from previous theories of ideas and after reaching a framework fordeveloping societies such as Iranian organizations, it is applied. The spatial domain of this research is Iranian government agencies and its time domain is 2021 to 2022.

Organization and management researches are conducted in three categories: quantitative, qualitative and combined, in which the collected data and how to analyze them are decisive. The data of this research have been collected by library method (study of related articles and books and published reports) and field (expert panel) that the data are qualitative and qualitative

content analysis and quantitative scientometric method have been used to analyze them. Therefore, this research is categorized in qualitative-quantitative researches.

Findings

In this study, with the help of scientometrics tools as well as reviewing systematic literature, the growing trend of attention in the development of scientific manuscripts in responsible research fields and responsible innovation is described. The interaction of different authors and their scientific achievements in this field in different journals leads us to identify new concepts and strategies in Good Governance. Based on the surveys and analysis of the documents, the following dimensions are considered as the main dimensions of Good Governance from the perspective of innovation and responsible research:

Accountability: Based on this approach, not only the social consequences of decision-makers in the public sector, but also the decisions of the private and civil sectors should be accountable to the interests of the organization in front of their shareholders(Mohammadi & Mohammadi, 2021).

Clarity: Means leaving the flow of information free and accessible to everyone who is in touch with decisions (Mohammadi et al, 2021).

Central law: A favorable government requires strong legal frameworks to be able to function fairly and properly. It must also fully protect the rights of individuals and must have a strong judicial and security apparatus in order to enforce the laws (Babaei et al, 2015).

Participation: The opinions of all individuals (men and women) should be considered in decision-making. In other words, everyone should participate directly or indirectly in decision-making. Of course, in order to achieve this goal, citizens must first practice participation and gradually form an organized civil society, along with the essential freedoms such as Guarantee the freedom of expression and assembly (Tavakkoli et al, 2020).

Responsibility: The desired government requires that institutions and processes provide services to all stakeholders at an appropriate opportunity. This is possible when the mentioned institutions are sensitive and responsible for the demands, expectations and needs of individuals and groups (Mohammadi et al, 2021).

Consensus-based: Favorable rule of law requires a mediation between different perspectives and interests in the society in order to achieve a broad consensus on political values, the best good and the best interest for The whole society and how to achieve it. Such a government should provide opportunities to all individuals and groups of society (Babaei & Tavakkoli, 2015).

Efficiency and Effectiveness: Optimal rule requires the existence of processes and institutions that result in meeting the needs of the society, along with the best use of available resources. The concept of efficiency and effectiveness within the framework of Good Governance includes sustainable use of natural resources and environmental protection.

Fairness: and Justice: In favorable rule, everyone should benefit from opportunities and all of them, especially the vulnerable, should have the opportunity to grow and develop (Thapa et al, 2019).

Table 1 also shows a set of concepts of swimming in the field of good governance from the perspective of reviewing documents and articles in the field of innovation and responsible research, which has been emphasized.

Table 1 THEMES AND CONCEPTS IDENTIFIED BASED ON SLR		
Themes	**Concepts**	**Resources**

Sustainability	Eco-Innovation	(Auer & Jamai, 2018)
	Sustainability Innovation	(Auer & Jamai, 2018)
	stainable RegionalDevelopment	(Thapa et al., 2019)
Ethics	Dynamics of Ethics	(Decker et al., 1991)
	Sufficient Ethical	(Flick et al., 2015)
	Ethics	(Stahl, 2013)
	Integration of Ethical	(Van den Hoven et al., 2012)
	Global Ethics	(Decker et al., 1991)
Engagement	Society Engagement	(Ribeiro et al., 2018)
	Stakeholder Engagement	(Timmermans et al., 2017)
	Public Engagement	(Levidow & Neubauer, 2014)
Social Integration	Societal Alignment	(Ribeiro et al., 2018)
	Mutual Respect	(Decker et al., 1991)
	Mutual Understanding	(Decker et al., 1991)
Stakeholders Commitment	Overarching Commitment	(Macnaghten et al., 2014)
	Pledges to BroaderConcerns	(Stahl, 2013)
	Higher Level Responsibility	(Stahl, 2013)
Governance in STI Transition	SocioeconomicTransformation	(Thapa et al., 2019)
	Governance of STI	(Ribeiro et al., 2018)
	ernance of SociallyControversial Technologies	(Macnaghten et al., 2014)
	The SociotechnicalNature of Innovation	(Wiarda et al, 2021)
	Responsible Governance	(Fosberg et al, 2015)
	Work Packages on Ethical, Social & LegalIssues	(Stahl, 2013)
	Anticipant Governance	(Sutcliffel, 2011)
Synergy and Convergence	munity's CollectiveProductivity	(Wiarda et al, 2021)
	Science in Society	(Decker et al, 1991)
	Integrating in Organizational Routines	(Timmermans et al, 2017)
New Research Natures	Research Integrity	(Stahl, 2013)
	Awareness Structure	(Stahl, 2013)
	Professionalism	(Stahl, 2013)
	Social Goods	(De Saille, 2015)
	Networks ofResponsibility	(Timmermans et al, 2017)
	Desirable ResearchOutcomes	(Stahl, 2013)

DISCUSSION

Our research on responsible innovation and responsible research in the context of Good Governance outlines their overall approach to how science's responsibilities dominate social, moral and environmental values. The ultimate goal of developing this literary discipline is to create a shared responsible paradigm between science, policymaking and society in all pillars of Good Governance so that all people can balance the benefits of science and technology and its responsibility to society (EU, 2020). One of the most important issues that researchers and policy makers face today is the development of theoretical and creative ideas of RRI in practice and the implementation of responsibility in the field of Good Governance.

There are various themes in the governance framework that support social responsibility actions in universities and other academic centers. As can be seen in the Figure 1 below, social integration based on modern research methods can contribute to sustainability. Also, sustainable

development in university relations with industry and society can contribute to the production of science with the help of social innovations. Also, the commitment of stakeholders to help commercialization can help sustainable development, and sustainability also increases the commitment of stakeholders through public engagement. New research natures also increase the commitment of stakeholders with the help of knowledge integration. This commitment also creates and develops science and research through knowledge sharing. In fact, good governance in the transition of science, technology and innovation in this way creates an efficient cycle.
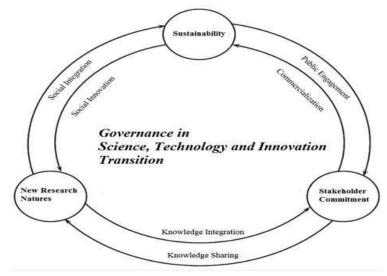

FIGURE 1
CYCLE OF GOOD GOVERNANCE IN THE STI TRANSITION

CONCLUSION

This research is also designed to help these policy makers and policy makers clarify the operational path of ideas to operationalize the responsibility of science and technology. Achieving this goal by reviewing the results presented in recent years in this regard has been based on scientometrics analysis and expert panel. Therefore, in order to research and policy making in the field of responsible research and innovations, emerging scientific pathways have been identified and introduced based on systematic literature review (SLR). Understanding concepts and strategies in literature can design different and new paths for researchers and policy makers to design patterns and processes for research responsibility.

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