

EVOLUTIONARY GOVERNANCE THEORY FOR SUSTAINABLE DEVELOPMENT OF THE CONCRETE INDUSTRY IN JAPAN

Shibaura Institute of Technology
Shibaura Institute of Technology

Ph.D. Student
Associate Professor

Student Member
Regular Member

Ludmila Soares Carneiro
Michael Henry

1. INTRODUCTION

Sustainability is one of the most discussed subjects of the modern society. Sustainable development (SD) is a term that has also been in the spotlight from the necessity of humankind to keep development of society, while not harming the planet in the same intensity as it has been done until now [1]. To prevent the earth from becoming uninhabitable, deep changes are necessary. As society and its social-political organization dictates a very important role in how environmental issues dealt with, there are also discussions about how changes in the social-political-economical aspects can be necessary for the SD.

Governance is the game-like interactions that dictate the structure of society and relations. So, as society has to change to face environmental problems, the system also has to change. Evolutionary Governance Theory (EGT) is a theory that proposes how the rigid structures of the current governance can become more malleable, keeping pace with the evolution of society. For Japan – and, especially, the construction and concrete industries – the conservative perspectives can make the application of new governance theories a challenge. So, this work aims to investigate how this theory can be applied in concrete industry, using Japan as a study object and data for a questionnaire survey from Henry [2].

2. SUSTAINABLE DEVELOPMENT DEBATE AND REPRESENTATIONS

Debate around the concept of SD reflects different points of view about the structure of society and its political-economical systems. Some examples of theories are those that aim to keep the status quo of the society (World Bank, Forum for the Future), Reformists (Social reformist Real-World Coalition), and Transformation approach (Social Ecology, Eco Socialism) [3]. Together with this discussion of SD, there are many models that try to describe sustainable development as the interaction between important aspects of the society and environment. Some of the most famous representations [1] includes Social, Environmental and Economic aspects such as the Overlapping Circles Model, the Nested Dependencies Model (concentric circles), and the Three Pillars of SD.

Considering these models (Figure 1), the common factor about the sustainable development is that most of them are related to human society such as Economical and Social aspects, being only Environmental considering the nature and other earth's beings, being SD an “unashamedly anthropocentric concept” [4].

As the humans are the center of the theory of SD, the social structures and systems have influence in how the sustainability aspects will be installed. According to UNESCO [6], governance is a set of parameters under which management and administrative systems operate. From this, the SD cannot be discussed in any sphere without consider governance to understand how power has been diffused in society, how policies are elaborated, priorities set, and holders are considered/charged [7].

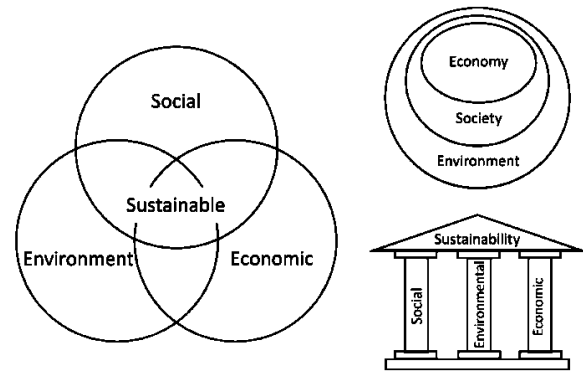


Figure 1 Sustainable development representation from [5]

3. GOVERNANCE AND EVOLUTION TOWARDS SUSTAINABILITY

Governance is not only about the government, but it also includes the non-state actors, the game-like interactions between them for resources or to regulate rules in a self-organizing network that can work autonomous from the state [8]. It is also not restricted to the corporate governance with companies interests or social-environmental responsibility. Governance is related to all of these, meaning how the social pact has been executed until now with changes during each period or era.

Evolutionary governance theory is a concept to explore new perspective on the ways society, market, and governance itself evolves [9]. Its conceptual framework has the assumptions that, first, the attempts to change governance must come from a deep understanding of the context, and second, that governance itself is radically evolutionary, so the changes do not happen in a disruptive way. EGT emphasizes that there is a co-evolution between the discourses, actors, and institutions [10,11].

An example of EGT is transition management (TM). According to Kemp et. al [12], it constitutes a soft planning instead of a comprehensive planning. It means that the TM does not “blankly rely on market forces but concerned with the conditions under each market forces operate, by engaging ‘context control’ so as to orient market dynamics towards societal goals.” Thus, it can adapt to many circumstances (democracies, dictatorships, groups of individuals, villages, companies and so on).

4. JAPANESE GOVERNANCE

Japan is a country that has many particular characteristics. The governance is also an example of this. According to [13,14], Japan has been criticized by agencies and investors because of its lack of transparency in governance. The lack of transparency and unclear communication for the internal and external stakeholders make the understanding of the game-like interactions difficult. Yanagi [14] also commented from the Asia Corporate Governance Association that the Japanese managers often behave like the owners when it comes to sharing information or making protectionist policies, lacking on taking actions as shareholders, that is, focusing on overall shareholders' best

Keywords: Evolutionary Governance Theory, Social Perspectives, Sustainable Concrete, Sustainable Development.
Contact address: SIT - 9th floor, 3-7-5 Toyosu, Koto-ku, Tokyo, 135-8548 Japan, na21109@shibaura-it.ac.jp

interests or benefits. This position from the managers can disorient the stakeholders from their role inside the overall system, making also difficult for the foreigners' interactions. Over the years, Japan has been aiming to change and become more open and transparent in governance, however, there are still only a few studies using EGT in the Japanese context.

In order to understand more the Japanese stakeholders' perspectives about SD theme and Institutional aspects, the results from a questionnaire survey conducted by Henry [2] can be analyzed. The respondents were asked to attribute importance levels from 1 (no importance) to 4 (high importance) to the factors when considering Sustainable Concrete. The concrete industry stakeholders from Japan pointed Economic as most important (Figure 2). This answer shows a conservative vision of the SD theme, focusing on the financial aspects as important for sustainable concrete implementation. Institutional aspects presented a high importance value for the respondents of Japanese concrete industry reflecting the policies of corporative governance applied in the country.

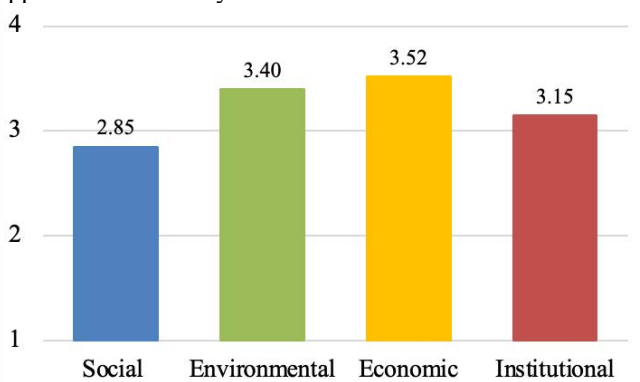


Figure 2 Importance value attributed by construction industry professionals to sustainable theme in Japan

4. EXPLORING THE APPLICATION OF EGT TO THE CONCRETE INDUSTRY

EGT has previously been explored as a model for projects of mega constructions [15]. The framework of EGT can be used due to the dynamic system with large number of stakeholders that constitute a mega construction project, and the method was effective to increase project performance. The concrete industry in Japan also involves many stakeholders, so the application of EGT is promising.

Wang et. al. [15] used a framework of 3 parts: 1st evolution of governance configurations, 2nd evolution of interdependence and goals, and 3rd evolution of governance path. The 1st refers to “dynamic adjustments of governance mechanisms involving actors, institutions and power/knowledge” [15]. As EGT is more dynamic, it can be adjusted to the changes in environment. For concrete industry, as concrete is a composite material there are many involved parties/holders in a very dynamic environment. Each one with their own governance (corporative governance), so the general governance for the project (project of implement a sustainable concrete) has to be adjusted. The research shows [15] that it can present a competitive advantage because can address ever-changing risks and opportunities.

The 2nd and 3rd, concerns about changing in parties' interrelationships and projects objectives [15]. The trust and reciprocity are important for changes in relationship between the parties of the project. The evolution can lead to changes in the independent institutions' goals and common goals as well. Wang et. al suggest that the parties constantly revise

their goals in order to achieve success because “the lack of evolutionary interdependences and goals can easily lead to risk of project failure”. The study uses as an example that the past experiences from the company are often used as guide for the new projects; however, as new project shows new challenges and parties, it has to be adjusted accordingly. The project of production and implementation of a sustainable concrete could adjust of the objectives and goals, adjusting the other members of the project and making trust and reciprocity in the relationship.

5. CONCLUSION

The current environmental situation aims for evolving solutions that actually can help to appease/solve the problem. An evolution of the approach of governance and how the institutions interact can present a solution to adapt to the modern society, making governance less formal and more ductile. The results from implementation of EGT will reflect in the direct management of institutions and execution of tasks. The concrete industry will also be affected by the changes. The conservative systems, such as Japan, will have to adapt to keep the modernization of the social structures. A good option to be applied is EGT that can be used for many social structures as an adaptive system, towards transition management framework for example. As a specific objective, it could be observed that the most important factor for implementation of sustainable concrete, according to the Japanese industry professional perspectives, is Economic followed by Environmental, Institutional, and last, Social.

ACKNOWLEDGEMENT

This research was supported by the Ministry of Education, Culture, Sports, Science, and Technology of Japan (MEXT).

REFERENCES

- [1] Keeble, Brian R. "The Brundtland report: 'Our common future'." *Medicine and war* 4.1 (1988): 17-25.
- [2] Henry, M. W. (2010). Formation and evaluation of sustainable concrete based on social perspectives in the Japanese concrete industry (Doctoral dissertation, 東京大学).
- [3] Hopwood, Bill, Mary Mellor, and Geoff O'Brien. "Sustainable development: mapping different approaches." *Sustainable development* 13.1 (2005): 38-52.
- [4] Lee, Keekok, Alan Holland, and Desmond McNeill. *Global sustainable development in the twenty-first century*. Edinburgh University Press, 2000.
- [5] Herath, H. M. T. R., and R. M. P. S. Rathnayake. "A Critical Approach towards Sustainable Development Models—A Review." *International Journal of Agriculture Innovations and Research* 7.4 (2019): 2319-1473.
- [6] UNESCO. (2016, February 24). Concept of governance. International Bureau of Education. Retrieved March 29, 2022, from <http://www.ibe.unesco.org/en/geqaf/technical-notes/concept-governance>.
- [7] Purvis, Ben, Yong Mao, and Darren Robinson. "Three pillars of sustainability: in search of conceptual origins." *Sustainability science* 14.3 (2019): 681-695.
- [8] Rhodes, Rod AW. "Understanding governance: Ten years on." *Organization studies* 28.8 (2007): 1243-1264.
- [9] Beunen, Raoul, Kristof Van Assche, and Martijn Duineveld. *Evolutionary governance theory*. Springer International Pu, 2016.
- [10] Van Assche, Kristof, Beunen, Raoul, Duineveld, Martijn (2014) *Evolutionary Governance Theory: an introduction*. Springer, Heidelberg. ISBN 978-3-319-00983-4
- [11] Ostrom, E. (2014) Do institutions for collective action evolve?. *Journal of Bioeconomics*, 16(1), 3-30
- [12] Kemp, René, and Derk Loorbach. "Governance for sustainability through transition management." *Open Meeting of Human Dimensions of Global Environmental Change Research Community*, Montreal, Canada. Vol. 20. 2003.
- [13] Amyx, Jennifer, and Peter Drysdale. "Japanese Governance." London: Curzon (2003).
- [14] Yanagi, Ryohei. *Corporate governance and value creation in Japan: Prescriptions for boosting ROE*. Springer, 2018.
- [15] Wang, Dedong, Shaoze Fang, and Hongwei Fu. "The effectiveness of evolutionary governance in mega construction projects: a moderated mediation model of relational contract and transaction cost." *Journal of civil engineering and management* 25.4 (2019): 340-352.