6-26-2018

Exploring Capability Governance Model for Sustainable-Smart Tourism Development

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Completed Research Paper

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Abstract

There has been an increased initiative to realize smart tourism in the world. However, most attempts have yet to be realized completely. The lack of theoretical discussion and modelling in tourism governance is a major contributing factor. This paper empirically explores the potential of systematic governance in achieving sustainable competitive advantage in smart tourism. We conducted a case study via qualitative interviews with tourism initiators from one of the leading tourism cities in Tokyo, Japan. In the theory building process, we adopted absorptive capacity as the theoretical foundation, and we could synthesize the outcome of our analysis into the proposed framework— Smart tourism dynamic capability governance Model. The model demonstrates how a city could dynamically manage their tourism resource and capabilities in their ecosystem toward sustainable tourism prosperity. Throughout this study, we contribute to the body of knowledge by introducing a successful tourism governance approach to compete with tourism resource rich cities.

Keywords: Smart Tourism, Tourism Governance, Capability, Dynamic Capability, Absorptive Capacity, Tourism Ecosystem, Grounded Theory

Introduction

Recently, smart tourism studies have attracted many scholars. They have addressed the importance of integrated tourism approach among data, infrastructure, human and organizational resources in the city, in combination with the use of advanced technology, in ecosystem approach (Gretzel et al. 2015a; Gretzel et al. 2015b; Porter and Kramer 2011). Thereby, both city and relevant tourism stakeholders (i.e. tourism consumers, suppliers, and other relevant subjects) could achieve mutual benefits and synergetic values from tourism—economic values for city, business and citizens, and tourism experience value and post-satisfaction for tourists (Gretzel et al. 2015b; Lim et al. 2017).

Expecting the outputs above, there is an increasing push to realize smart and sustainable tourism in both national and city level; Many countries and cities have already created smart tourism visions and extended investments on applications for information communication technology (ICT) to achieve competitive advantage in tourism. For instance, Japan expanded investments on tourism environment and set its national goal to be known as 'tourism-oriented country'(Andonian et al. 2016); In the same vein, Tokyo attempts to transform the city itself to leading smart tourism city via combination of ICT

(i.e. digital signboard, IT-enabled multilingual emergency systems) and its local hospitality culture, called Omotenashi (i.e. cloud system, robots and augmented reality for local hospitality and its ecosystem)(Tokyo 2017).

Nonetheless, smart tourism success has not been realized fully. Most attempts have remained as potential pilot projects. Due to the lack of technical knowledge, the city has difficulty managing the use of its urban infrastructure, data, and advanced technology (Maccani and Donellan 2017). Also, due to the lack of capability to coordinate various tourism stakeholders (i.e. citizen, tourism business, tourists, tec.) in its complex ecosystems and to transform its legacy structures and regulations(Gretzel et al. 2015b), the city struggles for taking advantage and synergetic effect from its ecosystems. Thus, there is growing need for systematic governance framework which can help to manage this complexity and lead the city toward sustainable and smart tourism prosperity.

Prior to building up the tourism governance framework, from previous smart tourism studies, we found a viable research gap.

First, there is no literature that addresses smart tourism governance in perspective of strategic value of IT and in holistic view point. And we could find obvious perception gaps to the concept of 'tourism governance' between tourism discipline and information systems (IS) discipline. In tourism studies, previous studies primarily highlight political and economic approach of governance (Caffyn and Jobbins 2003; Zahra 2011); therefore, there is a lack of discussion about added value from applications of advanced ICT on tourism development. On the other hand, in IS studies, most prior studies focus on governance of ICT in business organization in private sector (Brown and Grant 2005; Curley 2007; De Haes et al. 2013; Weill 2004); thus, the studies did not sufficiently take into account essential viewpoints for city organization—holistic viewpoint (Christensen and Lægreid 2007); complex nature and peculiarities of public sector organizations (Molina and Spicer 2004); diversity of stakeholders (Newcomer and Caudle 1991). Despite, there are a few literatures proposing smart city governance (Maccani and Donellan 2017; Meijer and Bolívar 2016), however, the nature and practice of city governance and tourism governance are not identical.

Second, most previous studies about tourism governance addresses the importance of a single resource or capacity. For instance, Zahra (2011) proposes open communication capacity; Caffyn and Jobbins (2003) suggest capacity for managing local participation; likewise, identified outcome of most tourism governance studies are uncoupled. To summary, there is lack of discussions, how a city can systematically govern their resources and capacities within its complex tourism ecosystem (Gretzel et al. 2015a; Gretzel et al. 2015b; Porter and Kramer 2011), and transform itself to be sustainable and smart tourism city in changing environment. To provide potential guidelines for practitioners in city tourism governance, we need to identify and organize existing and latent capabilities of city organization for smart and sustainable tourism development into applicable framework.

In light of these endeavors and limitations, this study puts forward two research questions:

> *RQ1. What are the existing and latent capabilities of city organization in successful smart and sustainable tourism governance? How do they interplay within complex tourism ecosystem?*
>
> *RQ2. How can a city systematically manage them to achieve sustainable competitive advantage in tourism?*

The primary object of this paper is to identify and organize the capabilities for sustainable and smart tourism governance. Based on identification, the paper aims to develop an initial theoretical model via inductive grounded theory approach, that will be basis for sustainable and smart tourism capability governance framework.

The paper is organized as follows. First, the paper specifies our methodological paradigm, the Strauss and Corbin (1990) version of grounded theory. Afterwards, we describe process and outcome of data analysis with empirical findings and propose the capability governance framework for sustainable and smart tourism governance. Finally, we conclude our study with discussion of contributions, limitations and future study.

Research Methodology

The Grounded Theory approach

In order to explore latent capability for sustainable and smart tourism governance, the study adopted a grounded theory ('GT' in short) approach (Eisenhardt 1989; Glaser and Strauss 1967b; Strauss and Corbin 1990). GT is one of the most widely used qualitative interpretative frameworks in the social science discipline (Locke 2001). By introducing the GT approach, researchers can formulate small-scale, focused theories about a phenomenon. Our study adopted GT approach for the following reasons:

- There are only a few studies related to our research topic, sustainable and smart tourism governance. GT approach is considered to be suitable approach when relevant research and theory are at their early and formative stage (Binder and Edwards 2010).
- A purpose of our study is to explore latent capabilities and their interplays for organizing them into systematic governance framework. GT approach is used for theory generation, and it focuses on actions and processes (Strauss and Corbin 1990). Also, the GT approach is considered as effective approach for identifying and categorizing the latent elements with their connections in social settings (Auerbach and Silverstein 2003).
- Our study aims to explore and couple the existing and latent capabilities into holistic framework for a city organization. GT approach is suitable for treating many variables at the same time (Valor 2007).
- GT does not rely on a perspective of a particular discipline (Strauss 1987). This feature has been a reason for IS researchers to adopt GT approach as IS discipline per se comprises multiple perspectives from studies of management and information technology. And our research topic, sustainable and smart tourism governance, is a multidisciplinary field among tourism studies, political economy, public administration studies, and information studies, etc.

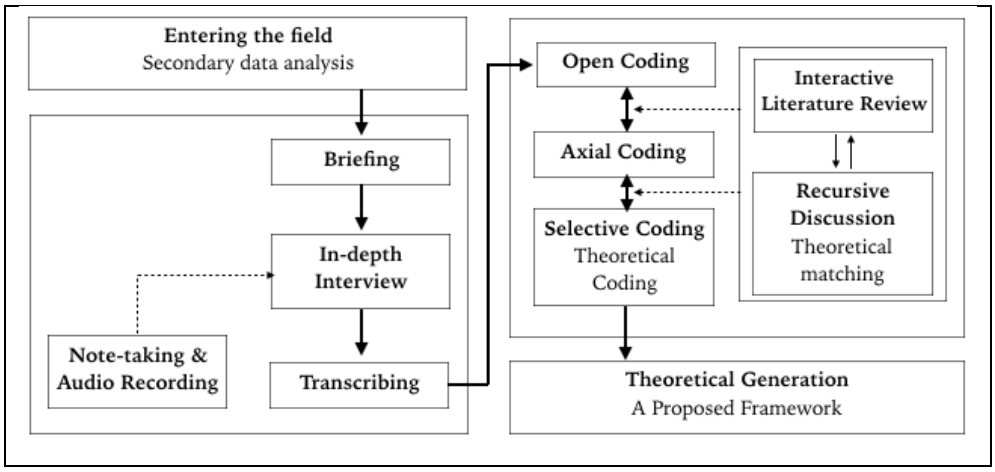

Figure 1. Grounded Theory Building Process

In GT approach, many previous studies suggest to refrain from literature review in the initial stages of research, since pre-exiting patterns and ideas of previous studies may impact on researchers' interpretation work and following quality of grounded theory; it is known as contamination of data and theory building (Glaser 1998). There have been long debates on manner of how and when to do literature review in GT approach; there are various opinions such as complete ignorance (Glaser and Strauss 1967a; Glaser 1998), delay of review (Charmaz 2006), and avoidance of review on relevant and substantive area of the research (Dick 2007; Locke 2001).

In our study, we decided to refrain from literature review in initial stage of study. Based on minimum review for the perception of research problems in introduction section, we proceed to data collection via qualitative interview; Afterwards, we advance to data analysis using GT approach; In each stages

of data analysis, we also conducted literature review and recursive discussions to make theory matching with data, in interactive manner.

Case study

GT approach is more of a research paradigm than a clearly describable methodology (Goulding 2002). By adopting the paradigm, researchers can interpret the social phenomenon with enabling the emergence of a research methodology (Dick 2005). In our study, we conducted a case study (Yin 2017), which includes secondary data analysis and qualitative interviews. As Eisenhardt (1989) argues, there are some strengths of case study theory building. For example, the method allows to generate a novel theory, and the generated theory is likely to be empirically valid.

To do case study, we searched a suitable city which can provide good example of actions and structure for successful tourism governance with sufficient empirical validity. Beta city (the name is concealed by request from the city) was determined as a relevant case because of the following reasons. First, Beta showed distinguished capability in their sustainable and smart tourism governance. Based on its well-suited future vision about tourism, tourism initiatives of the Beta have actively collaborated with tourism stakeholders to develop tourism competitiveness. Second, Beta provides useful lessons of how tourism resource scarce city can achieve tourism competitiveness. Unlike a few tourism resource rich cities like Paris, London and New York, filled with lots of distinctive cultural and historical attractions for tourists, most cities, including Beta, are small and lack tourism resources. Beta, however, could figure out its position in tourism, and significantly increased the number of inbound tourists; Beta received 0.3 million tourists in 2015 This is two times more than they originally planned for the year 2018 (Yoshida 2017).

Secondary Data Analysis

Beta city is one of the 23 sub-cities of Tokyo Metropolitan city in Japan. In 2009, the city established its future plan as an "international city" based on their aspiration of fostering tourism industry (Beta-City 2014). As discussed above, despite Beta city lacked distinctive tourism resources, the city managed to attain its comparative advantage in tourism by creating and applying various tourism policies and practices. For instance, Beta city utilized its geographical advantage of being close to the international airport and it positioned itself as tourism supportive city. Also, the city has politically exerted itself to legalize the sharing economy. After a long patient effort, the city could attain special and exclusive position for experimenting sharing economy of private accommodations from Japanese national government; and the city has fostered their tourism accommodation ecosystems for tourists, collaborating with city stakeholders. Displaying its outstanding growth in the numbers of inbound tourists, Beta city became one of the tourism leading sub-cities in Tokyo Metropolitan city. And the city keeps transforming itself to be leading sustainable and smart tourism city in Japan toward and after 2020 Tokyo Olympics.

In-depth Interview

Data Collection

After the second data analysis, we held qualitative interviews to collect more ample data for identifying tourism governance capacity. In the study, five semi-structured interviews were conducted with tourism policy initiatives of Beta city, all of the interviewees were head of the departments that work closely toward fostering sustainable and smart tourism capacity. Each interview lasted for an hour, and the interview data was fully transcribed in its original lingual form (Brinkmann and Kvale 2008; Charmaz and Belgrave 2012; Schultze and Avital 2011), Japanese.

Validity and Reliability

In the study, we tried to minimize threats to validity and reliability. In terms of validity, we referred to validity checklist suggested by Maxwell (2012). And we triangulated our data collection process—second data analysis, in-depth interviews, and literature reviews in interactive manner. With regards to

reliability, we introduced two coders in data analysis process. Two coders had recursive discussions in each coding stage, and they eliminated codes that are not corresponding or coherent.

Data Analysis

Our study followed data analysis process of GT approach, suggested by Strauss and Corbin (1990). The process comprises of three stages of coding — open coding, axial coding, and selective coding (as theoretical coding); two coders advanced the coding process with literature reviews and recursive discussions for theoretical matching. Table 1 represents a code book, consisting of twenty open codes and six axial codes; It demonstrates our code structure of the actions and capabilities does city makes in their tourism governance.

Table 1. Code book

Axial Codes	**Open Codes**
Governing smart tourism	Practical use of tourism policy
	Creation of integrated tourism strategy
	Effective propagation of tourism policy information
	Tourism environment improvement
	Extended comprehension toward city stakeholders
Managing data and tourism resources	Collection · Process · Management of data and information
	Connection of downtown and tourism spots for more attractive excursion
	Utilization of tourism resource for creating higher tourism value
Managing infrastructure and services	Maintenance of urban infrastructure for digital innovation
	Personalized information delivery about tourism site
	Service improvement for better tourism experience
Fostering public tourism awareness	Fosterage of local hospitality culture for tourists
	Raise of public awareness and participation for tourism
Facilitating co-creation	Support of co-creational activities for tourism
	Effective usage of regional resources
	Inter and intra solidarity of city organization and the community
	Reflection of various stakeholders' opinions
Realizing tourism values	Sharing various tourism values
	Systematic measurement and evaluation of tourism values
	Follow-up improvement after evaluation

Open coding

In the first step, known as open coding, the coders analyzed data to propose emergent concepts and categories. In the process, the coders read the transcripts deeply and tried to select and define the relevant data into code via recursive discussions. As a result of open coding, from 235 initial codes, the coders could determine twenty relevant patterns of actions as first open code list.

Axial coding

In second step, known as axial coding, the coders tried to apply the thematic coding technique (Boyatzis 1998). The purpose of axial coding was to identify the inter-relationship and to organize a category with hierarchy among open codes. In this work, the coders focused on finding the capacity of a city in its tourism governance. As result of axial coding, the coders could classify 6 'set of actions' of tourism governance for a city organization—(1) Governing sustainable tourism, (2) Managing data and tourism resources, (3) Managing infrastructure and services, (4) Fostering public tourism analysis, (5) Facilitating co-creation, and (6) Realizing tourism values.

Findings and Discussions

Six capabilities for governing smart tourism

The coders identified six 'set of actions' as of city on its smart tourism governance. Based on recursive discussions, the coders figured out that these set of actions are organized and aligned to specific goal of tourism with the use of resources. In management discipline, there is corresponding concept to the identified set of actions known as 'organization capability'.

Organization capability is referred as 'organization's ability to 'perform a set of coordinated tasks, utilizing organizational resources, for the purposes of achieving a particular end-result' (Helfat and Peteraf 2003). Plenty of previous studies, known as studies with resource-based view (RBV), have considered this organizational capability as a core ingredient for competitiveness of a firm with organizational resource (Barney 1991; Wade and Hulland 2004); they mainly argued that competitive advantage of a firm could be achieved depending upon how the firm attain, allocate and protect its unique resource and capabilities against their competitors (Helfat and Peteraf 2003). In the same vein, city, as one complicated type of organization, could also achieve its tourism competitiveness through managing its organizational capability. Thereby, we define the interim output from axial coding as six capability for smart tourism governance. Table 2 represents six capability of a city on its smart tourism governance with their concerted meanings by the coders.

Table 2. Six Capabilities for Tourism Governance

Capability	**Meanings**
Governing smart tourism	Ability of the city on its strategic planning and coordinating city stakeholders and their ecosystem for sustainable tourism development
Managing data and tourism resources	Ability of the city on its data and resource discovery, collection, process, integration, and management for enhancing tourism value
Managing infrastructure and services	Ability of the city on its urban infrastructure and service development, maintenance, and provision for enriching tourism experience
Fostering public tourism awareness	Ability of the city on its educating multi-culture harmonization and tourism awareness of city stakeholders for improving public hospitality for tourists.
Facilitating co-creation	Ability of the city on its supporting co-creation activities of city stakeholders for tourism innovation
Realizing tourism values	Ability of the city on its enriching, sharing and measuring the economic and sustainable values from tourism to all the tourism stakeholders

Dynamic capabilities as sustainable tourism prosperity

RBV has some limitations, since the view it does not sufficiently address the management mechanisms of how an organization can achieve superior performance associated with specific resources and capabilities (Teece et al. 1999). Also, the view is lacking of discussions about how an organization can quickly transform itself in the changing environment to sustain their competitive edge (Helfat and Peteraf 2003). Grounding on such limitations, some scholars have proposed another conceptual view on organizational capability, known as dynamic capability view (DCV); their core concept, 'dynamic capabilities' is referred as an 'organization's ability to search, explore, acquire, assimilate, and apply knowledge about resources and opportunities' (Teece et al. 1999). And Teece et al. (1999) proposed three dynamic capabilities for organization—(1) the ability of employees to learn quickly and to build new strategic assets, (2) the integration of these new strategic assets, including capability, technology and customer feedback into company processes, (3) the transformation or reuse of existing assets which have depreciated. By utilizing these dynamic capabilities, organization can quickly deal with the challenges and continuously learn and transform its organization structure and capacity for their sustainable innovation and creative activities, which is the basis for sustainable competitive advantage.

Therefore, the DCV allows researchers to clarify management mechanisms for sustainable prosperity (Kenneally et al. 2013); how an organization integrates, learns, and reconfigures resources and capabilities in line with changes in its environment, contrary to simply attaining and allocating processes. Also, the view highlights importance of fostering dynamic capabilities in organization to embrace change, to generate sustainable innovations and creative outcomes, and to capture and exploit new, unforeseen opportunities. In other words, organizations with stronger dynamic capabilities is able to sustain its prosperity more easy.

Applying dynamic capabilities for a sustainable and smart tourism city

In DCV, a firm consideration of external challenge and internal learning, integrating, transforming processes is the core ingredient for sustainable competitive advantage (Helfat and Peteraf 2003; Teece et al. 1999). DCV can be applied to a city organization, as the city can also be considered as a collection of resources. It requires appropriate mechanisms to confer superior city performance from its resources – similar to that of a firm (Kenneally et al. 2013).

In the coding process, the coders found extra learning, integrating, and transforming processes outside of a city organization. For instance, there were intra and extra interaction processes among city and tourism stakeholders associated with various resources relevant to tourism development (i.e. service, data, urban infrastructure, tourism contents, and human resource). In other words, to develop a successful tourism, the city has to continue interacting with its ecosystem based on their dynamic capability.

For many decades, researchers repeatedly argued an importance of the ecosystems approach in tourism development. For instance, Caffyn and Jobbins (2003) highlighted the role of governance system for coordinating tourism with local participation and resources. Gretzel et al. (2015a) proposed smart business ecosystem as core pillar for further smart tourism development. Yet, the concepts of ecosystem are discussed in abstract level, or single or uncoupled capacity forms; no studies, best to our knowledge, have discussed how to govern dynamic capabilities for sustainable and smart tourism with its ecosystem.

To summary, based on literature review, we figured out the need of a study on how to govern dynamic capabilities in a city and its ecosystem for sustainable and smart tourism development. Further selective coding process will be made with focus on dynamic capabilities of the city interacting with its ecosystem.

Theoretical coding

The codebook (Table 2) was used as a basis for theoretical coding. This coding stage involved identifying theoretical findings and synthesizing them into theoretical framework. In the middle of the coding process, coders identified two dimensions of the actions city can make —receptive actions and applicative actions. By making certain actions in two dimensions, the city has kept creating new

knowledge, innovations, and values based on sharing of their prior experience and knowledge with stakeholders.

In previous studies, there is a theory which attempted to address this interplay of dynamic capabilities with knowledge creation process, known as absorptive capacity theory (Cohen and Levinthal 2000; Sambamurthy and Zmud 1999; Zahra and George 2002). Absorptive capacity is the concept developed from dynamic capability view. According to the theory, firm's creative output, such as, quantity of knowledge absorption, knowledge transfer, innovation and firm's performance can be derived from two dimensions of firm's ability—potential dynamic capability (i.e. acquiring, assimilating) and realized dynamic capability (i.e. transforming, and exploiting) for valuable external knowledge (Zahra and George 2002). Table 3 displays the definitions of four sub-capabilities of absorptive capacity, addressed by Zahra and George (2002).

Table 3. Definitions of four absorptive capacities by Zahra and George (2002)

Absorptive capacities	**Sub-capacities**	**Definition**
Potential	Acquisition	Organization's capability to identify and acquire externally generated knowledge critical to its operations
	Assimilation	Organization's capability that allows it to analyze, process, interpret, and understand information that is obtained from external sources
Realized	Transformation	Organization's capability to develop and redefine the routines that facilitate combinations of existing knowledge and the newly acquired and assimilated knowledge
	Exploitation	Organization's capability that allows it to redefine, extend, and leverage existing competencies or to create new ones by incorporating acquired and transformed knowledge into its operations

The concept is partially applicable to the overall creative output of our interim discussion, since it addresses the role of our identified two dimensions—receptive actions (which correspond to potential dynamic capacities) and applicative actions (which correspond to realized dynamic capacities). However, the concept did not reflect the distinctive nature of the city organization and the business organization and the complexity of the tourism environment. For instance, different to the business organization, the city organization is required to deal with numerous interactions with external stakeholders in democratic way when initiating their creation process. Also, different to business development, tourism development needs to be based on coordination of internal and external organizational resources within ecosystem.

Thus, the coders determined to introduce the concept of absorptive capacity, but also to re-conceptualize the existing concept so that it would fit into our research context. There were the following recursive discussions to identify absorptive capacity of smart tourism city based on its four dimensions—acquisition, assimilation, transformation, and exploitation. The coders threw four critical questions related to absorptive capability theory that a city may ask for generating sustainable tourism prosperity with its ecosystem, as follows:

- **Acquisition**: How does a city generate relevant tourism knowledge as a resource for smart and sustainable tourism innovation?
- **Assimilation**: How does a city use cross-city learning processes for facilitating collaborative and co-creative tourism innovation?
- **Transformation**: How does a city harmoniously govern its structure and processes for facilitating effective and sustainable innovation process?
- **Exploitation**: How does a city realize the value of smart and sustainable tourism innovation?

Based on the critical questions above, we could elucidate theoretically the following four upper dynamic capabilities of the city: 1) Acquiring relevant knowledge about city and tourism resources via data-driven approach; 2) Assimilating intra- and extra organization learning process in tourism ecosystem; 3) Transforming city into open innovation platform in tourism ecosystem; and 4) Exploiting the value of smart and sustainable tourism innovation to tourism stakeholders and establishing a systematic systems loop.

Toward a framework for Smart Tourism Capability Governance

In the study, we conducted a case study of Beta city that demonstrates how the city could generate sustainable tourism prosperity via governing its dynamic capabilities within its ecosystem. Based on absorptive capacity theory, we synthesized the required dynamic capacity of the city for its sustainable and smart tourism governance into a framework (See figure 2). Our framework provides a detailed guiding structure toward achieving sustainable and smart tourism competitiveness. The framework highlights four dynamic capacities of a city which can help the city to sustainably generate creative outcomes—such as knowledge, innovation, and values, within its ecosystem.

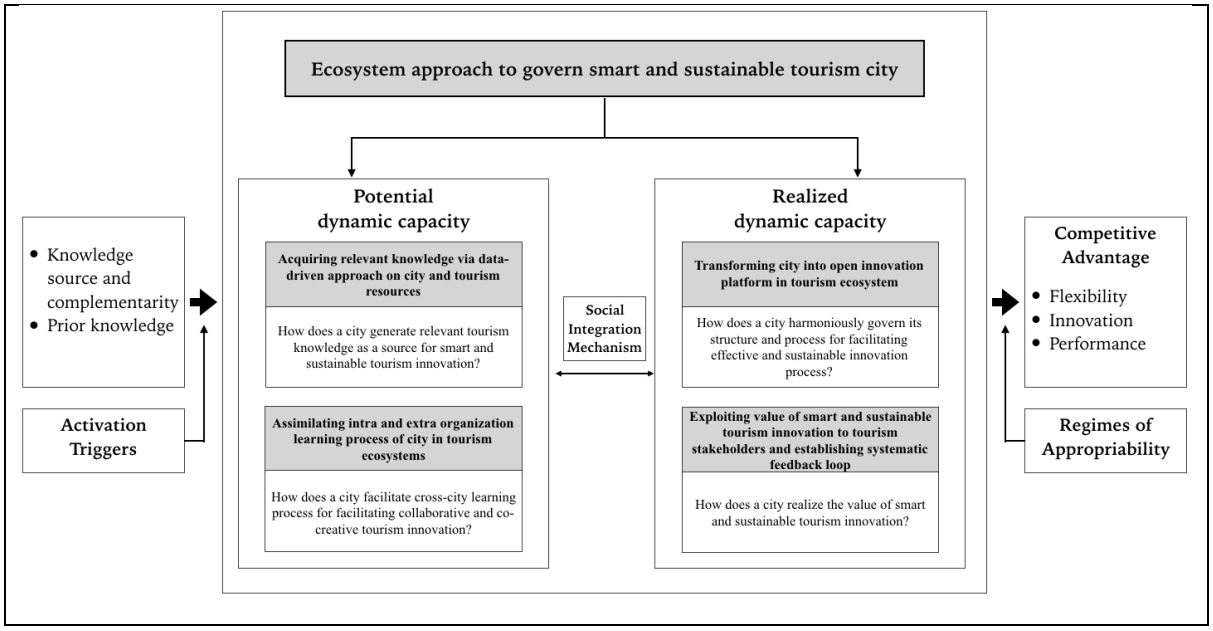

Figure 2. Proposed Smart Tourism Dynamic Capability Governance Model

Looking at the framework in detail, first, there is the acquisition capacity for the city: acquiring relevant knowledge via data-driven approach on city and its tourism resources. Like as firms, a city requires capability to utilize its knowledgebase and prior experience for further elevation of the existing knowledge and for organizational learning (Kenneally et al. 2013). Comparing to business organization, however, there is high level of complexity in the potential knowledge sources of city organization intertwining with tourism environment (Kenneally et al. 2013; Molina and Spicer 2004)—such as urban infrastructures and services, public or private data and tourism resources. In order to achieve effective and efficient acquisition of relevant knowledge, the city should be capable of using the data-driven approach (i.e. big data approach and small data approach)(Lindstrom 2016; Lohr 2012; McAfee et al. 2012) with the active use of information technology to identify and acquire the knowledge from these internal and external knowledge sources.

Second, there is the assimilation capacity for the city: assimilating intra and extra organization learning processes of the city in tourism ecosystems. Relevant knowledge per se cannot be the creative outputs, but the knowledge needs to be organized to some relevant shape by a person or an organization who has the comprehension in both the knowledge and the organizational goal (Alavi and Leidner 2001;

Mouritsen et al. 2001). Also, tourism environment has the feature that most products and services are created and operated by tourism stakeholders, not by the city organization alone (Gretzel et al. 2015b). Thus, there is the need for the city to extend boundaries of the organization learning toward external groups of people, such as tourism stakeholders. Toward this intra and extra organizational learning process, the city should be capable of cultivating public tourism awareness and facilitating co-creation activities.

Third, there is the transformation capacity for the city: transforming city into on open innovation platform in tourism ecosystem. Based on what the city learned from the potential dynamic capacities above, the city may proceed to the stage of developing and redefining the routines from existing knowledge and newly acquired and assimilated knowledge for further creative outputs via transforming its organizational structure and process into open innovation platform (Zahra and George 2002). Toward the achievement of realizable knowledge and creative outputs, the city can set up harmonious governance structure among various stakeholders as well as systematic co-innovation processes with them (Gretzel et al. 2015a).

Fourth, there is the exploitation capacity for the city: exploiting the value of smart and sustainable tourism innovation to tourism stakeholders and establishing systematic feedback loop. The primary goal of tourism development for a city is not only developing tourism competitiveness but also diffusing the generated tourism values to ecosystem (Gretzel et al. 2015b). In tourism ecosystem, there are various stakeholders with distinctive interests: (1) citizens hoping the vitalization of their local economy, but with some privacy and public security concerns, (2) tourism businesses hoping for sustainable profit, (3) tourists hoping for satisfaction from various experiences during their travel. Therefore, city needs to be capable of sharing appropriate tourism values to each stakeholder. And follow-up improvement should be made with systematic measurement and evaluation of tourism development.

By governing these upper four dynamic capabilities, a city can quickly build, innovate and reconfigure its resources and capabilities to capture and exploit new, unforeseen opportunities, against changing environment; Also, based on the proper use of resources and capabilities, the city can generate and sustain its sustainable tourism prosperity.

Implications and Conclusion

We conclude this study with three implications.

First, the study empirically explores how a city could generate sustainable advantages in tourism via governing dynamic capabilities within its ecosystem. The results of the case study present what sort of capabilities and upper dynamic capabilities does successful tourism city organization hold. It also addresses how do those four dynamic capabilities of the city interplay with complex tourism ecosystem against changing environment toward sustainable and smart tourism development.

Second, the study provides a practical guiding structure of how a city can achieve a sustainable tourism prosperity. The example of Beta illustrates a unique and relevant case of how a city with scares tourism resources could develop and sustain their competitive advantage in tourism. The result illuminates a direction to the cities toward achieving their comparative tourism advantage through systematically governing their dynamic capabilities.

Third, the study theoretically synthesizes a framework for sustainable tourism dynamic capabilities governance. Using absorptive capacity as a theoretical foundation, this study summarizes four dynamic capacities tailored for city organization toward its sustainable tourism governance as follows: 1) Acquiring relevant knowledge via data-driven approach on city and its tourism resources; 2) Assimilating intra and extra organization learning process in tourism ecosystem; 3) Transforming city into open innovation platform in the tourism ecosystem; and 4) Exploiting the values of smart and sustainable tourism innovation to tourism stakeholders and establishing systematic systems loop.

Like other studies, this study also has several limitations. First, we had a case study with a single city with participants in unitary cultural background. Despite the sample was suitable for the object of our

study, our build framework cannot be generalized to all cities in the world. Second, our interviewees were from the same city organization. They may have had some concerns about how him/her in the organization and how the city could be shown to the external citizens. Although we strictly kept anonymity and confidentiality of samples during our research process, there can still be some risk of social desirability bias. Third, there is the intrinsic weakness of our method case study theory building. Grounded theory built from case study is prone to yield complexity and narrowness of the theory (Eisenhardt 1989). This can be overcome by accumulation of multiple studies in both theory building and theory testing studies. Future research should consider limitations above for stronger generalizability and stronger validity.

Acknowledgements

We wish to thank various people for their contribution to this project; Prof. Brian Donnellan and all researchers in Innovation Value Institute in NUI Maynooth, for their helpful advice and feedbacks on framing capability model; Prof. Jaehyun Park, for his helpful comment and advice on grounded theory approach; Officers in Anonymous city, for their valuable support on providing interview data and fruitful discussions.

References

Alavi, M., and Leidner, D. E. 2001. "Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues," *MIS quarterly*), pp. 107-136.

Andonian, A., Kuwabara, T., Yamakawa, N., and Ishida, R. 2016. "The Future of Japan's Tourism: Plans for Sustainable Growth Towards 2020," *McKinsey Japan and Travel, Transport and Logistic Practice, October, available at: www. mckinsey. com/.../can% 20inbound% 20tourism% 20fuel% 20japans% 20economic (accessed 7 December 2016).[Google Scholar]*).

Auerbach, C., and Silverstein, L. B. 2003. *Qualitative Data: An Introduction to Coding and Analysis*. NYU press.

Barney, J. 1991. "Firm Resources and Sustained Competitive Advantage," *Journal of management* (17:1), pp. 99-120.

Beta-City. 2014. "Bata-City Mirai Plan 10 Years (City Name Is Concealed by Request from the City)," Beta-City Government.

Binder, M., and Edwards, J. S. 2010. "Using Grounded Theory Method for Theory Building in Operations Management Research: A Study on Inter-Firm Relationship Governance," *International Journal of Operations & Production Management* (30:3), pp. 232-259.

Boyatzis, R. E. 1998. *Transforming Qualitative Information: Thematic Analysis and Code Development*. sage.

Brinkmann, S., and Kvale, S. 2008. "Ethics in Qualitative Psychological Research," *The Sage handbook of qualitative research in psychology* (24:2), pp. 263-279.

Brown, A. E., and Grant, G. G. 2005. "Framing the Frameworks: A Review of It Governance Research," *Communications of the Association for Information Systems* (15:1), p. 38.

Caffyn, A., and Jobbins, G. 2003. "Governance Capacity and Stakeholder Interactions in the Development and Management of Coastal Tourism: Examples from Morocco and Tunisia," *Journal of Sustainable Tourism* (11:2-3), pp. 224-245.

Charmaz, K. 2006. "Constructing Grounded Theory: A Practical Guide through Qualitative Research," *SagePublications Ltd, London*).

Charmaz, K., and Belgrave, L. 2012. "Qualitative Interviewing and Grounded Theory Analysis," *The SAGE handbook of interview research: The complexity of the craft* (2), pp. 347-365.

Christensen, T., and Lægreid, P. 2007. "The Whole-of-Government Approach to Public Sector Reform," *Public administration review* (67:6), pp. 1059-1066.

Cohen, W. M., and Levinthal, D. A. 2000. "Absorptive Capacity: A New Perspective on Learning and Innovation," in *Strategic Learning in a Knowledge Economy*. Elsevier, pp. 39-67.

Curley, M. 2007. "Introducing an It Capability Maturity Framework," *International Conference on Enterprise Information Systems*: Springer, pp. 63-78.

De Haes, S., Van Grembergen, W., and Debreceny, R. S. 2013. "Cobit 5 and Enterprise Governance of Information Technology: Building Blocks and Research Opportunities," *Journal of Information Systems* (27:1), pp. 307-324.

Dick, B. 2005. "Grounded Theory: A Thumbnail Sketch. Retrieved January 28, 2009."

Dick, B. 2007. "What Can Grounded Theorists and Action Researchers Learn from Each Other," *The SAGE handbook of grounded theory*), pp. 398-416.

Eisenhardt, K. M. 1989. "Building Theories from Case Study Research," *Academy of management review* (14:4), pp. 532-550.

Glaser, B., and Strauss, A. 1967a. "The Discovery of Grounded Theory Chicago," *Adeline, USA*).

Glaser, B., and Strauss, A. 1967b. "The Discovery Ofgrounded Theory," *London: Weidenfeld and Nicholson* (24:25), pp. 288-304.

Glaser, B. G. 1998. *Doing Grounded Theory: Issues and Discussions*. Sociology Press.

Goulding, C. 2002. *Grounded Theory: A Practical Guide for Management, Business and Market Researchers*. Sage.

Gretzel, U., Sigala, M., Xiang, Z., and Koo, C. 2015a. "Smart Tourism: Foundations and Developments," *Electronic Markets* (25:3), pp. 179-188.

Gretzel, U., Werthner, H., Koo, C., and Lamsfus, C. 2015b. "Conceptual Foundations for Understanding Smart Tourism Ecosystems," *Computers in Human Behavior* (50), pp. 558-563.

Helfat, C. E., and Peteraf, M. A. 2003. "The Dynamic Resource-Based View: Capability Lifecycles," *Strategic management journal* (24:10), pp. 997-1010.

Kenneally, J., Prendergast, D., Maccani, G., Donnellan, B., and Helfert, M. 2013. "Sustainable Connected Cities: Vision and Blueprint Towards Managing It for City Prosperity and Sustainability," *European Design Science Symposium*: Springer, pp. 88-98.

Lim, C., Mostafa, N., and Park, J. 2017. "Digital Omotenashi: Toward a Smart Tourism Design Systems," *Sustainability* (9:12), p. 2175.

Lindstrom, M. 2016. *Small Data: The Tiny Clues That Uncover Huge Trends*. St. Martin's Press.

Locke, K. 2001. *Grounded Theory in Management Research*. Sage.

Lohr, S. 2012. "The Age of Big Data," *New York Times* (11:2012).

Maccani, G., and Donellan, B. 2017. "It Governance in Smart Cities: A Conceptual Framework,").

Maxwell, J. A. 2012. *Qualitative Research Design: An Interactive Approach*. Sage publications.

McAfee, A., Brynjolfsson, E., Davenport, T. H., Patil, D., and Barton, D. 2012. "Big Data: The Management Revolution," *Harvard business review* (90:10), pp. 60-68.

Meijer, A., and Bolívar, M. P. R. 2016. "Governing the Smart City: A Review of the Literature on Smart Urban Governance," *International Review of Administrative Sciences* (82:2), pp. 392-408.

Molina, A. D., and Spicer, M. W. 2004. "Aristotelian Rhetoric, Pluralism, and Public Administration," *Administration & Society* (36:3), pp. 282-305.

Mouritsen, J., Larsen, H. T., and Bukh, P. N. 2001. "Intellectual Capital and the 'Capable Firm': Narrating, Visualising and Numbering for Managing Knowledge," *Accounting, organizations and society* (26:7-8), pp. 735-762.

Newcomer, K. E., and Caudle, S. L. 1991. "Evaluating Public Sector Information Systems: More Than Meets the Eye," *Public Administration Review*), pp. 377-384.

Porter, M., and Kramer, M. 2011. "„Creating Shared Value" Harvard Business Review, January 2011."

Sambamurthy, V., and Zmud, R. W. 1999. "Arrangements for Information Technology Governance: A Theory of Multiple Contingencies," *MIS quarterly*), pp. 261-290.

Schultze, U., and Avital, M. 2011. "Designing Interviews to Generate Rich Data for Information Systems Research," *Information and Organization* (21:1), pp. 1-16.

Strauss, A., and Corbin, J. M. 1990. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Sage Publications, Inc.

Strauss, A. L. 1987. *Qualitative Analysis for Social Scientists*. Cambridge University Press.

Teece, D. J., Pisano, G., and Shuen, A. 1999. "Dynamic Capabilities and Strategic Management," in *Knowledge and Strategy*. Elsevier, pp. 77-115.

Tokyo. 2017. "Ict Strategy of Tokyo Metropolis (東京都ｉｃｔ戦略)," Tokyo metropolitan government.

Valor, C. 2007. "The Influence of Information About Labour Abuses on Consumer Choice of Clothes: A Grounded Theory Approach," *Journal of Marketing Management* (23:7-8), pp. 675-695.

Wade, M., and Hulland, J. 2004. "The Resource-Based View and Information Systems Research: Review, Extension, and Suggestions for Future Research," *MIS quarterly* (28:1), pp. 107-142.

Weill, P. 2004. "Don't Just Lead, Govern: How Top-Performing Firms Govern It," *MIS Quarterly Executive* (3:1), pp. 1-17.

Yin, R. K. 2017. *Case Study Research and Applications: Design and Methods*. Sage publications.

Yoshida, K. 2017. "Allowing Vacation Rentals Businesses in Beta City Using National Strategic Special Zones System. (City Name Is Concealed by Request from the City)," *Journal of Japan Association of Real Estate Sciences* (30:2).

Zahra, A. L. 2011. "Rethinking Regional Tourism Governance: The Principle of Subsidiarity," *Journal of Sustainable Tourism* (19:4-5), pp. 535-552.

Zahra, S. A., and George, G. 2002. "Absorptive Capacity: A Review, Reconceptualization, and Extension," *Academy of management review* (27:2), pp. 185-203.