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Building Capacity to Transform Zambia:

What Motivates Government Officials to Learn Planning-related Skills?

A thesis submitted in partial satisfaction of the requirements for the degree

Master of Urban and Regional Planning

by

Kana Kudo

2015

ABSTRACT OF THE THESIS

**Building Capacity to Transform Zambia:
What Motivates Government Officials to Learn Planning-related Skills?**

by

Kana Kudo

Master of Urban and Regional Planning

University of California, Los Angeles, 2015

Professor Randall D. Crane, Chair

Capacity building of local governments can strengthen a country because enhancing the abilities of individuals and institutions helps achieve the nation's development goals. As it is one of the development strategies in Zambia, the country has undertaken countless capacity building programs through the cooperation with international and donor organizations. Yet, the effectiveness of the programs is uncertain.

This thesis, therefore, examines the impact of capacity building to the planning officers in Zambia. First, surveys were conducted to analyze the officials' incentives to attend training and acquire planning-related skills in a range of Geographic Information Systems (GIS) and spatial analyses. Then, a GIS training was evaluated qualitatively and quantitatively to assess how much they improved their skills through the project. Finally, by comparing the relationship between the

individual incentives and training results of the officials, this thesis demonstrates that personal incentives can play a key role in capacity building.

The thesis of Kana Kudo is approved.

Stephen Commins

Paavo Monkkonen

Randall D. Crane, Committee Chair

University of California, Los Angeles

2015

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LIST OF ACRONYMS

CDPPDS	Capacity Development Programme for Provision of Decentralised Services
DPPH	Department of Physical Planning and Housing
GIS	Geographic Information Systems
GIZ	German Federal Enterprise for International Cooperation
JICA	Japan International Cooperation Agency
MLGH	Ministry of Local Government and Housing
OED	Operations Evaluation Department
OECD	Organization for Economic Cooperation and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme

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Introduction

Human and institutional capacity building, which enhances the abilities of individuals and organizations to achieve the development goals, is one of the important strategies for government restructures in developing countries. The case of Zambia is no exception. Because the central government believes that building capacity of institutions and human resources is a key to achieving the goal of adequate governance, Zambia has undertaken various capacity building projects over the past five decades (Chaponda 2014).

Additionally, international and donor institutions stress the importance of capacity building in local governments and decentralization of the government structures in developing countries. Therefore, the institutions, such as the World Bank, the United Nations Development Programme (UNDP), German Federal Enterprise for International Cooperation (GIZ), and Japan International Cooperation Agency (JICA), have financially and technically supported most of the capacity building projects in Zambia. Nevertheless, comparing the current situation in capacity building with that in other countries, such as Kenya and Tanzania, it is generally recognized that capacity building in Zambia has not progressed well. Therefore, the nation's capacity building programs need to be improved in order to effectively and efficiently guide the human resources and institutions to enhance their performance.

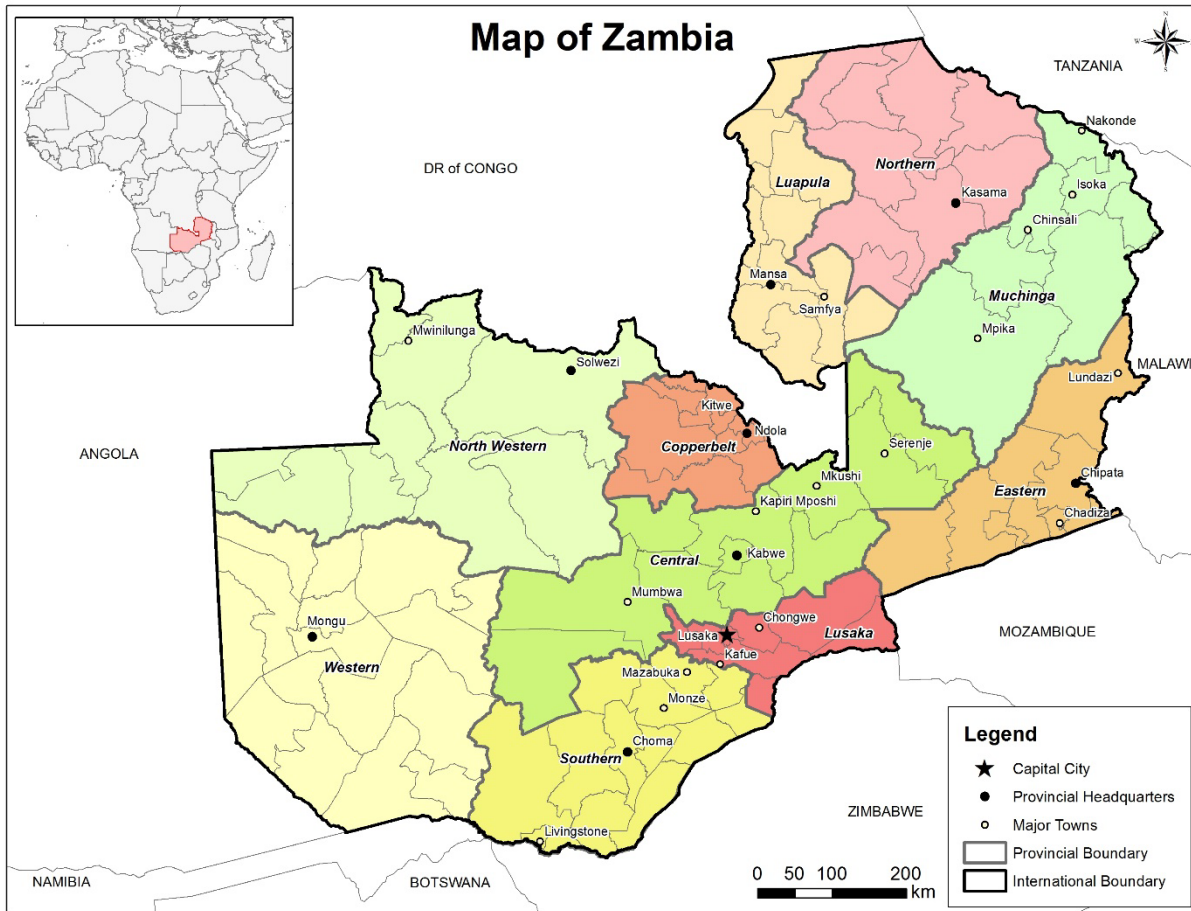
Thus, the question arises: Do the current capacity building scheme and projects in Zambia impact the capacity of planning officers? This thesis examines the relationship between individual incentives and training results of planning officials to understand the mechanism of capacity building in Zambia. By analyzing surveys and evaluating a capacity building training qualitatively and quantitatively, the thesis demonstrates the personal incentives and motivations that impact the planning officers to acquire planning-related skills.

Chapter 1 introduces the primary and secondary research questions and hypotheses. By stating the questions, I provide the instruction on how the primary research question is examined in this thesis. Chapter 2 describes the existing literature about capacity building based on the five topics: 1) decentralization and capacity building in Zambia; 2) definition of capacity building; 3) incentives and motivations for capacity building; 4) evaluation for capacity building; and 5) challenges for self-reporting questionnaire. The existing literature suggests that there is limited scholarship about correlation between individual incentives and performance in Zambia, and quantitative methods to assess the capacity building projects in southern Africa. Thus, this research adds contributions to the scholarship about capacity building and incentives for government officials in Zambia.

Chapter 3 displays the research methods for this thesis. This research utilizes two research methods: survey and project evaluation. The surveys were conducted to the 18 planning personnel at the central, provincial, and district planning offices and training for Geographic Information Systems (GIS) was evaluated in order to collect primary data. Various survey questions included the officers' incentives of participating in capacity building projects, their opinions about effectiveness and usefulness of the projects and their levels of achievement after the projects. Introducing the research methods and basic demographics of the survey participants, this chapter explains the different qualifications and background that each planning officer has. Additionally, the chapter discusses the significance and limitation of the research. This research utilizes a non-traditional way to evaluate capacity building projects and that makes the research unique. However, a limited number of survey responses prevented me from providing a broader perspective.

After analyzing the survey results and evaluating a 2012 GIS training, Chapter 4 finally demonstrates that personal incentives affect the ability of government officers to learn planning-related skills. Shedding lights on the incentives and motivations of why some government officials would like to improve their performance helps us understand the mechanism of capacity building particularly in Zambia. Thus, this research further helps planning offices in Zambia to maximize the abilities of the officers in preparing better development plans and service provision in order to improve the living conditions of the people in Zambia.

Figure 1: Map of Zambia



Chapter 1: Research Questions and Hypotheses

This chapter explains the research questions and hypotheses for the thesis. In order to answer the primary research question, “Do the current capacity building scheme and projects in Zambia impact the capacity of planning officers?,” three secondary questions and hypotheses were formed. They are expected to help examine whether there is a relationship between incentives and capacity building, and whether current capacity building projects impact the capacity of the government officials in Zambia.

1.1 Research Question

The primary research question is “Do the current capacity building scheme / projects in Zambia impact the capacity of planning officers?” This question helps address the effectiveness of the current capacity building projects in Zambia. To answer the question, the following secondary questions are taken into consideration: 1) Do the incentives of planning officers play an important role in building their capacities?; 2) What incentives impact the planning officers’ capacities the most?; 3) Do quantitative evaluation methods help assess the effectiveness of the capacity building projects?

1.2 Hypotheses

- 1) The incentives are likely to impact the planning officers’ abilities in learning planning-related skills and knowledge, such as GIS and spatial analysis skills.
- 2) Among all the possible incentives, the societal incentive is likely to play the most positive and important role.

- 3) Quantitative evaluation methods are likely to help assess the effectiveness of the capacity building projects.

Chapter 2: Literature Review

This chapter introduces existing literatures about: 1) decentralization and capacity building in Zambia; 2) definition of capacity building; 3) incentives and motivations for capacity building; 4) evaluation for capacity building; and 5) challenges for self-reporting questionnaire. First and second sections describe how capacity building is important for administrative decentralization and how it is defined differently by international organizations and countries. The third section introduces various types of incentives and motivations and how they are classified. The fourth section about evaluation first introduces the methods established by the World Bank and JICA. The last section discusses how answers for self-reporting questionnaire can be distorted and what can be done to reduce the bias. Introducing the existing literature about the topic suggests that existing researches are not sufficient to discuss the relationship between the incentives and capacity building in Zambia and the impacts on capacity building to the government officials. Therefore, the chapter argues the significance of this thesis, particularly for researching about the relationship and evaluating about one of the components in capacity building projects quantitatively.

2.1 Decentralization and Capacity Building in Zambia

Decentralization is a way of government reform. In Zambia, the Cabinet Office at the Office of the President states that decentralization is a “transfer of responsibilities, authority, functions, as well as power and appropriate resources, to provincial, district and sub-district levels” (2013). The Cabinet Office has a detailed definition in decentralization structure with four components. They are as follows (2013):

- 1) Deconcentration: transfer of functions and resources to lower level units of the same administrative system while authority over decision-making and use of such resources remains with the center

- 2) Devolution: transfer of some powers and authority, functions and resources by legal and constitutional provisions to the lower levels. The transfer is within formal political structures and its institutionalized by constitutional means.
- 3) Delegation: transfer of functions and resources to a subordinate authority with the capacity to act on behalf of the superior authority without a formal transfer of authority in the same structure
- 4) Privatization: the divestiture of state interests in public enterprises and the subsequent sale of such to the private sector (Cabinet Office 2013; p. iii)

Although the four differentiate the different kinds of relationships between the central and local governments and all have pros and cons, the devolution is regarded the highest form of administrative decentralization. The World Bank explains that the decentralized local governments have the most political and financial freedom if the devolved decentralization is in place (World Bank 2001). Zambia, however, has been utilizing two of the decentralization types so far. Chaponda states (2013) that deconcentration and decentralization are the ones that are currently used in its administrative and political arrangement.

Firstly, the deconcentration of functions and resources from Central Government Sectoral Ministries to lower/local levels (for example Provincial and District Agricultural Coordinating Officers including extension service arrangements as under the Ministry of Agriculture and Livestock), secondly the devolution of political power to Districts through the creation of Local Government (Councils) which are controlled by locally elected representatives; and since 1991 the privatization of public enterprise partly or wholly owned by the Government (Chaponda 2013; p. 1).

The two types of decentralization are present in central, provincial and district governments in Zambia. The upper government offices are therefore currently trying to transfer more power and authorities to the lower government offices in order to provide more autonomy to the government structures through decentralization scheme.

Decentralization has been undertaken relatively recently especially in developing countries. Smoke (2000) demonstrates that majority of decentralization reforms in Southern African countries started around their independence. He indicated Ethiopia and Kenya as examples. According to him (2000), although Ethiopia has a strongly centered government for a long period of time as opposed to the one in Kenya, which demonstrated its richness in local governance and government structure, both of them started shortly after their independence,

1961 and 1963, respectively. This phenomenon can be explained by the colonialism in Southern Africa. Most of the countries in the region have experienced being taken control by European countries, such as Britain, Portugal and Belgium. During their colonial time, most of the central government controlled by the European countries seemed to have encouraged strong central government with little or no power to local government offices (Chaponda 2013). This was mainly for them to rule the colonial countries easier in administrative and political ways and not to authorize the residents' power for autonomy in the countries.

Zambia also followed the same route in this perspective. Mukwena (2014) indicated that there were several decentralization programs initiated especially after Zambia's independence from the Britain in 1964. In addition, several laws and regulations enforced shortly after the independence helped accelerate governments in Zambia to establish the decentralization policy and framework. Chaponda (2013) describes the enactment of the Local Government Act in 1965, which played an essential role in shaping the decentralization movement in Zambia. The act created rural, township and municipal councils with publicly elected councilors and a councilor-elected chairman or mayor in power. In addition, there was also an important function for the Act. Chaponda (2013) further explains that the act empowered local governments (council or authority) for the first time in history in Zambia and they covered the entire jurisdiction in Zambia while the governments were in charge of employing/dismissing their own officers.

Later, according to Chaponda (2013), the Local Administrative Act of 1980 helped further shape the decentralization policy and framework in Zambia. However, there were some issues and challenges to decentralizing the local governments in reality. Some of the issues he pointed to were financial structure, the implementation and participation of the decision-making.

First, Chaponda (2014) argues that even the administrative structure was decentralized, however, the central government maintains the financial responsibilities. Therefore, even today, local governments have to ask central governments for permission to spend their own budgets, which are partially earned by themselves.

Second, it appears that the institutional framework is too weak in decision-making and monitoring the implementation of the decentralization. Even with the decentralization policies framed to meet the nation's needs, government officials have been having a difficult time in implementing the decentralization because of that. Additionally, Chaponda (2014) describes that the decision-making authority was initially limited to a particular political member because of Zambia's old one-party policy. The rule was applied even for the decision-making at the local governments, such as councils and authorities. The one-party policy has been changed to multi-party democracy after 20 years since the independence. However, it clearly prevented Zambia from decentralizing its government structure in earlier days.

2.2 Definition of Capacity Building

Although various factors help decentralize the administrative structure of the government in developing countries, some research indicates that administrative capacity building of local governments plays one of the important roles in its success. For instance, the World Bank states that building local capacity helps improve service provision of the countries and the level of local capacities affects the human resource management strategy of the government (World Bank 2001). Hence, the higher the capacity of the local government officers, the more the country decentralizes.

The term capacity building is commonly used to explain the process of improving the ability of officers in local governments. The United Nations Environmental Programme (UNEP) states that the capacity building has various meaning.

It [capacity building] can mean building abilities, relationships and values that will enable organizations, groups and individuals to improve their performance and achieve their development objectives. It can also mean initiating and sustaining a process of individual and organizational change and can equally refer to change within a state, civil society or the private sector, as well as a change in processes that enhance cooperation between different groups of society (UNEP 2005; p. 11).

In short, capacity building helps develop the abilities and performance of individuals or organizations in order to improve their communities and achieve sustainable development. This is extremely important because the initiation of capacity building can eventually strengthen the connection between the different groups of a state, such as communities, both public and private organizations, and the country as a whole at the end.

Because of its broad definition and multitude of meanings, however, a few terms, such as training and skill development, are interchangeably and mistakenly used to describe the concept of capacity building. According to Sethi et al (2012), training means “Organized activity aimed at imparting information and instructions to improve the recipient’s performance or to help him or her attain a required level of knowledge or skill” (p. 16). According to this definition, training can be a series of simplest capacity building activities. Additionally, skill development is defined as “An effort to enhance the ability to perform and add value to the life of the person and community; a learnt behavior that is able to produce in a unique manner a different tangible or intangible product, which has an economic or social value” (Sethi et al. 2012; 16). Compared to training, skill development has more diverse purpose for improving an individual’s abilities. Importantly, training and skill development are ones of the essential elements of capacity building and therefore proper use of training and skill development in capacity building would help enhance the quality of living environment in the region. Thus, it is essential to incorporate

those elements, such as training, skill development, evaluation and assessment, into the establishment of capacity building projects.

Capacity building of human resources in Zambia is regarded as one of the essential ways to improve governance and local governance. Chaponda (2014) also describes that capacity building is an important part of decentralization in Zambia and “Strengthening the capacities of Local Governments would enhance: democracy in decision making; sustainability of the development process and outcome; accountability and transparency in service provision” (p. 8-9). As a result, better capacity building scheme in Zambia is expected to improve governance and eventually contribute to administrative and political decentralization of the government structure.

2.3 Incentives and Motivation for Capacity Building

Some variables influence the success of the capacity building projects. The World Bank (2008) describes that some of the factors, such as the opportunities to apply an individual’s newly-acquired skills and knowledge, adequate motivation and incentives, and resource for implementation, are ones of them. Although all the components are important, incentives and motivations can play a key role in improving the effectiveness of the training.¹ The UNDP (2006) stated that “Incentives and incentive systems are fundamentals to developing capacities and to translating developed capacities into better performances” (p. 5). Through incentivizing and motivating the project participants, they are expected to improve their capacities effectively and more in a timely manner.

¹ Motivation and incentives are similar in a concept but works differently. The UNDP elaborates that motivation means the “initiation, direction, intensity and persistence of behavior” whereas incentives are “external measures that are designed and established to influence motivation and behavior of individuals” (UNDP 2006). Incentives and motivation complement each other and influence the individual’s behavior.

The UNDP categorized capacity building incentives into three groups based on types of motivations; the one for individual motivation, the one for organizational motivation and the one for societal motivation. First, personal incentive is strongly influenced by the individual motivation. This includes pay and salaries; direct financial benefits including pension, health insurance, and allowance; indirect financial benefits including subsidized accommodation, scholarship and tax breaks; work environment and condition; job security; affection and passion; status and prestige and so on (UNDP 2006; p. 5)

Further, the World Bank (2004) describes that a personal incentive is usually either monetary or non-monetary. On one hand, monetary incentives are motivation related to financial causes. In the example above, the monetary incentive includes pay and salaries, direct financial benefits and indirect financial benefits. On the other hand, non-monetary incentives are motivation related something other than economic cause. The UNDP (2006) explains that some of the non-monetary incentives can be more tangible, however, the most of them are invisible. Among the examples above, work environment and condition, job security, affection and passion and status are the examples of non-monetary incentives.

Second, the organizational incentive is motivated by the individual's willingness to cooperate with the organization. According to the UNDP (2006), it can encourage the employees to be more motivated, efficient and productive in the organization particularly when there is a reward / punishment system in place. It further influences their work behavior. The UNDP (2006) also explains that the effective performance of the individuals enhances the overall performance of the organization.

Third, societal incentive is motivated by an individual's willingness to work for the society when he/she thinks both the society and himself/herself would be benefited from the

action. Some of the social incentives include security, rule of law, legislation conducive to civic engagement (UNDP 2006). The societal incentive also helps change the social values of the communities. Although, according to the UNDP (2006), it is relatively hard to influence the perspective of individual through this type of incentive, it is extremely important in providing democracy and governance.

Although there are various types of incentives and motivations complementing each other, they work differently in a different countries and culture. For instance, among all the types of incentives, some government officers in Africa might be influenced strongly by their personal motives and careless about providing good governance to the communities.

Many African leaders have little incentive to practice good governance—reforms generally work against their self-interests, which they place over the national interest. Such leaders usually can achieve their personal goals – personal financial enrichment, unbridled power, ethnic/regional superiority or domination, etc. – by plundering their nations’ resources. Good governance, by requiring transparency, accountability, control of corruption, protection of civil liberties, political and economic freedom, etc., obviously works directly against the self-interests of many political leaders and their cronies, and ultimately results in loss of power. (Isimbabi et al., 2014, N.d)

Nonetheless, appropriate personal incentives and motivations play an important role for training participants to become interested and enhance their abilities in learning. According to the Independent Evaluation Group under the World Bank (2008), the capacity building projects will be greatly improved when the participants have personal incentives. Therefore, it is extremely important to incentivize and motivate the participants so that they can relate the capacity building projects more to themselves and enhance their ability for learning for a cause.

2.4 Evaluation for Capacity Building Projects

Through the cooperation with international and donor organizations, various capacity building projects have been undertaken, particularly in developing countries, and evaluated in various ways. It is important to establish capacity building projects based on a series of

evaluation scopes, therefore, the organizations have created own methods to assess the effectiveness of the projects. For instance, the Operations Evaluation Department (OED) of the World Bank (2005), describes the five factors for the evaluation sequence: inputs/processes; outputs, intermediate outcomes; long term outcomes; and impact, and intermediate outcomes and improved performance particularly can play a significant role in the assessment of the effects of capacity building. This is because it is extremely difficult to directly assess the impacts of the projects and therefore essential to stress more on measurable and short-term component.

The evaluation methods have various steps. The World Bank Institute (2012) describes that basic retrospective assessment of capacity building projects include reviewing project documents and consulting project facilitators, participants and other stakeholders. Having two criteria, this method can incorporate more perspectives than evaluating only one side of the projects. Further, the World Bank Institute's basic approaches (2012) include:

- Assemble documents and materials from the entire program cycle
- Review the program background, objectives and activities to identify the targeted development goal and institutional capacity change objectives
- Collect data through interviews of change agents and key informants
- Analyze data to trace each capacity development results story by identifying the pre-existing institutional capacity constraint (the basis for the capacity development objective), the related ICOs [Intermediate Capacity Outcomes] and the corresponding institutional capacity change(s)
- Follow up on data collection as needed to refine the results stories
- Understand the intervention's results by identifying evidence of intermediate and institutional level outcomes (p. 16)

Following the procedures, the approaches are expected to evaluate whether they worked for the capacity building projects. This method is also important to establish new capacity building projects because the results of the evaluation can be referred for future project management.

However, the World Bank evaluates capacity building projects based on differently-formed criteria in order to investigate the details of each project. For instance, the World Bank (2005) evaluated the capacity building projects in Zambia from 2000 to 2005 based on their

primary performance rating and development objective. First, the principal performance of the project was rated as satisfactory for outcome, likely for sustainability, modest for institutional development impact, unsatisfactory for unsatisfactory and satisfactory for borrower performance (World Bank 2005).

Second, the evaluation by development objectives has various components. On one hand, the primary development objective for the project was “to make public service delivery processes more effective and efficient in order to facilitate economic growth and reduce poverty” (World Bank 2005; p. 2). On the other hand, as this was the long-term goal of the project, the Bank later established a short-term goal. It is:

to design and implementation of critical system-wide reforms in the public sector, including (i) the reduction of public service staffing; (ii) reform of pay; (iii) introduction of more effective human resources management; (iv) improvement of resource allocation and financial management systems of the republic service; and (v) supporting progress made under ongoing program of the Borrower to restructure, decentralize and improve accountability and transparency in the public service (World Bank 2005; p. 5-6).

As the short-term development goal consisted of various components, the World Bank evaluated each of them separately to assess the project. The evaluation was as follows: moderately satisfactory for (i), (iii), and (iv), moderately unsatisfactory for (ii), and unsatisfactory for (v). Although some of the components met the expectation, some failed to do so. Additionally, the project cost of \$28 million was taken into consideration for the project evaluation.

The World Bank assessed the institutional reform and capacity building project in Kenya in 2012. According to the World Bank (2012), outcomes and borrower performance were rated moderately satisfactory, risk to development outcome was rated as substantial, and the Bank performance was rated as moderately unsatisfactory. Additionally, the project is also evaluated based on the development objective. The development objective of the project is “to strengthen public financial management (PFM) system to enhance transparency, accountability, and responsiveness to public expenditure policy priorities as well as enhance public service delivery

through the effective implementation of Results Based Management (RBM)” (World Bank 2012; p.5). The eight indicators were then established based on the development objectives. As they were rated as satisfactory for two items; moderately satisfactory for four, moderately unsatisfactory for one, and unsatisfactory for one, it suggests that the project helped enhance the capacity building and institutional reformation in Kenya (World Bank 2012).

On the other hand, JICA utilizes evaluation criteria that were suggested by the Development Assistance Committee of the Organization for Economic Cooperation and Development (OECD) and it tends to use the criteria for most of their development projects. Those five criteria, relevance, effectiveness, efficiency, impacts, and sustainability, evaluate the JICA projects to see the followings: 1) if the aid activity meets the needs of the beneficiaries and is relevant to the project policies and priorities; 2) if the project was effective and meet the project objectives, 3) if the project was efficient and uses the least necessary resources; 4) if there were positive and negative impacts and how the task team worked to reduce negative impacts, if any; and 5) if the task team tried to make the benefits of the project sustainable (JICA Evaluation Department 2010; JICA 2014). With these criteria, JICA first determines whether the specific projects in the countries are successfully/unsuccessful in a given time period. Then, it is expected to assess the projects’ impact over time in order to stress the necessity of the long-term effort for capacity building in the countries.

For instance, JICA evaluated its capacity building projects in Zambia, Capacity Development Programme for Provision of Decentralised Services (CDPPDS), from 2006 to 2009 based on the five criteria. JICA rated the project as follows: 1) high for relevance because of the importance in capacity building especially for local governments; 2) unsatisfactory for effectiveness due to the lack of long-term and adequate project objectives; 3) fair for efficiency

because of the too broad range in related activities; 4) positive for impacts because of various positive outcomes for government structures and no negative ones; and 5) moderately unsatisfactory for sustainability because of the numbers of remaining activities and government offices that needs cooperation (JICA 2008). The CDPPDS evaluation suggests that three-year long capacity building project helped contributed to the improvement of the capacity of the government officers in Zambia.

Even though the various evaluation methods have been developed and the project evaluations have been undertaken by using these methods, it is still not clear how effective the capacity building projects were as those measurements were only qualitatively and explained by words. Therefore, through adding the quantitative analyses into the project evaluation methods, the effectiveness of the projects can be assessed more precisely and multi-dimensionally.

Further, the project evaluation reports do not seem to include the detailed information about the effectiveness of the numbers of small-scale projects and activities, such as organization of training, installment of advisers. Instead, the reports only deal with the overall effectiveness and success of the projects. Therefore, shedding light in the effectiveness of one of the components of the capacity building projects helps complement the assessment of overall projects.

2.5 Self-report Questionnaire

Human behavior can affect survey results because people generally are less willing to provide their personal opinions accurately on specific topics, especially the sensitive and controversial ones, in order to display themselves more preferably in the society. Social desirability is an individual's nature that hopes to be portrayed themselves more in a socially

desirable manner, and it can distort the survey results (Fisher 1993; Holden 2010). This becomes an issue particularly when the interview, questionnaire or the survey asks the participants delicate questions related to their personal behavior because individuals are likely to answer more in a socially desirable way that they really are.

One of the effective methods to reduce social desirability bias is indirect questioning. Fisher (1993) defines indirect questioning as “a projective technique that asks subjects or respondents to answer structured questions from the perspective of another person or group” (p. 303) and it helps respondents answer more openly about themselves. By using indirect questioning, the respondents are expected to answer more freely because they feel less guilty about being socially undesirable as they are dealing more with “general opinions” rather than their own. The use of indirect questioning helps the survey participants “ease the sense of repulsion or embarrassment and ... describe their own feelings behind a façade of impersonality” (Simon and Simon 1975; p. 586). Therefore, surveys, questionnaire or interviews based on indirect questioning are expected to be more true to the respondents’ opinions.

Additionally, some research shows that their answers for indirect questioning can be treated as the respondents’ own opinions or behaviors. Campbell (1950), Holmes (1968) and Sherwood (1981) argue that individuals are expected to unconsciously reveal their biases and own views through ambiguous yet projective assessment while they have a tendency to answer more in a socially desirable manner for direct questioning (as cited in Fisher, 1993, p. 304). Therefore, with the use of indirect questioning, the respondents’ true opinions and views are likely to be revealed.

Chapter 3: Research Methods

This chapter elaborates research methods, basic information about the survey participants, as well as significance and limitation of the thesis. First, a survey and project evaluation are the two main methodologies to examine if incentives and motivations affect the participants' abilities to improve their capacities. Particularly, introducing various survey questions related to incentives and quantitative evaluation methods for a GIS capacity building training help illustrate the details of the expected findings. Then, the chapter also provides the basic information about the survey participants in order to introduce the survey participants with different backgrounds. Last, it sheds light on significance and limitation of the research. This helps acknowledge the importance of the research even with the limitation.

3.1 Methodology

In terms of available planning positions at the government offices in Zambia, there should be at least five planning personnel at the central government office. At provincial government offices, there should be at least six planners, three planning assistants, and surveyors. Finally at district council offices, there should be at least two planners, a development control officer, a surveyor, and a civil engineer. As there are 10 provinces and 103 districts in Zambia as of September 2014, the total number of planning officers should be more than 300. Additionally, especially at district council offices, officers whose official titles were field surveyors, civil engineers and development control officers, have been working for planning projects. Therefore, some of the non-planners yet district officials in planning-related fields were also invited to complete the surveys.

In the current Zambian government structures, some of the planning-related positions are vacant in most of the three government offices. Some of the reasons include the budgets were not sufficient to hire another planners at the offices or they were not able to find appropriate candidates to fill the positions. Thus, 20 surveys were targeted from various planning offices throughout the country in order to research the variety of planning officials and their incentives.

In order to answer the research questions and deal with the hypotheses, two research methods were undertaken: 1) surveys and follow-up interviews and 2) evaluation of the capacity building projects, particularly for GIS training. These methods assessed planning officers' incentives for attending capacity building training and their capacities in GIS, map-making, and spatial analyses.

First, conducting surveys and interviews with the planners in the Zambian government offices provided demographic information about each officer and an individual's incentives for participating in capacity building. Some of the topics covered were as follows (Appendix 1):

- 1) Education level and planning skills,
- 2) Title and job classification (either principal planner, provincial planner, senior planner, district planning officer, planner, senior planning assistant, or planning assistant)
- 3) Years in current position at the government office

Consequently, a series of questions were asked about participants' opinions on capacity building and their incentives for participating in capacity building training (Appendix 1). In addition to answering questions for themselves, they were asked to answer on behalf of their colleagues. This was intended to reduce social desirability bias and help the planning officials discuss incentives more openly. Most of the questions were open-ended and ranking so that the

interviewees could discuss their opinions about the training more freely. Some of the questions were as follows:

- 1) Why did you decide to participate in the capacity building projects?
- 2) What did you think was the most useful part of the capacity building training?
- 3) What did you like the most about the training?
- 4) What did you like the least about the training?

The first close-ended question asked the planning officers to rank some of their underlying reasons to participate in the training. The following five reasons were suggested to the officers so as to uncover their and their colleagues' motivations for attending the capacity building projects.

- 1) "I will get a lot of allowance!"²
- 2) "I will be promoted! / be in higher position with more planning/GIS knowledge!"
- 3) "With the new knowledge, I can finish my tasks faster!"
- 4) "With the new knowledge, I can work on more complex and high-profile projects!"
- 5) "With the new knowledge, I can improve service provision for the community!"

The five reasons represent various types of incentives and motivations. The first reason addresses whether being paid is important to them is categorized as monetary incentive and the rest of the incentives are categorized as non-monetary.³ The five reasons for both the monetary and non-monetary incentives can be further divided into three groups: personal (1 and 2); organizational (3 and 4); and societal (5).

² The Local Government Act, Cap 281 of the Republic of Zambia (1991) states that "A council may, with the approval of the Minister, pay allowances to councilors, officers and employees of the council in respect of travelling, subsistence and out-of pocket expense incurred by them on the business of the Council."

³ According to the World Bank (2014), most of the incentives are categorized into two, monetary or non-monetary. Hence, it is important to ask the participants if the monetary incentive influenced them to attend the training.

The second to fourth questions were asked in open-ended manner. This was because various components of the training can be applicable to the answers to the questions. Providing participants a list of potential answers may influence their decision-making process for these questions. Therefore, for these questions, it was more effective to have open-ended questions rather than ranking questions in order for them to speak of themselves more freely.

Second, in order to learn more about the incentives of planners to develop their capacities, some of the completion reports to the capacity building projects were evaluated. There were at least two GIS training to improve planners' knowledge and skills in GIS in 2012 and 2013. One training was targeted for the planners at the DPPH offices and the other was specifically for the planning-related officers in Lusaka Province. By researching the various evaluations, quizzes, and reports for the training sessions, the difference in each planner's capacity in GIS, map-making, and spatial analyses were demonstrated. Finally, analyzing both the survey and evaluation results helps discover how capacity building training are currently undertaken in Zambia and how the three types of incentives motivate the officers to further improve their abilities as a planner for their respective governments.

3.2 Demographics of the Participants

A total of 18 planning officers participated in the survey to express their opinions about and incentives for the planning and GIS training. Although all of them had been working in the planning-related department in their government offices before and after the training, their qualifications, particularly the years of working experience, positions and the numbers of capacity building projects that they have attended, differ.

3.2.1 Position at the Time for Training and Survey

This section discusses the positions that participants possessed before and after the training and how they are changed over time. Particularly for some government officials, this survey was undertaken a few years after they attended the capacity building training. Therefore, this comparison helps explain how diverse the participants' current positions are and how their positions and their respective government offices have changed before and after attending the capacity building training.

Figure 2: Positions before and after the training

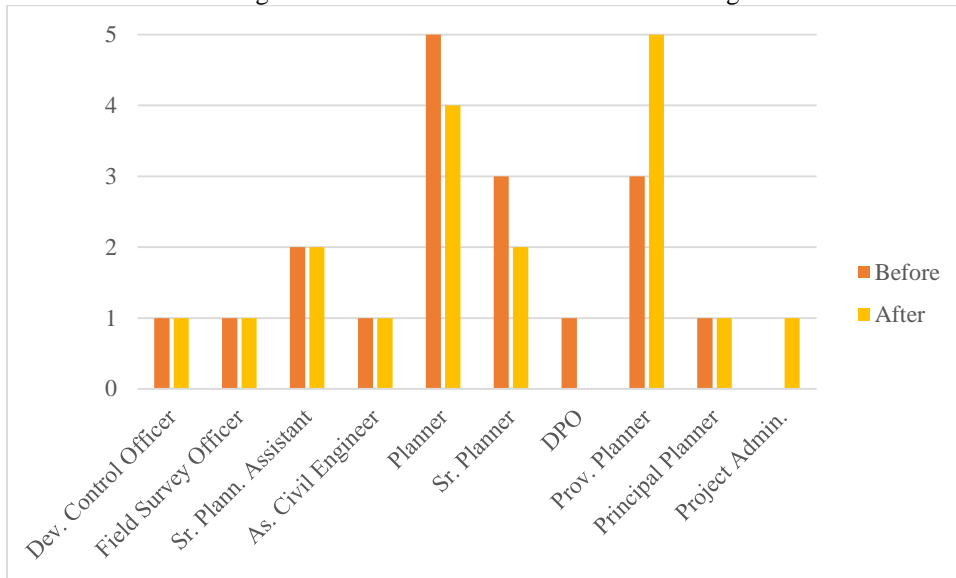


Figure 3: Government offices before and after the training

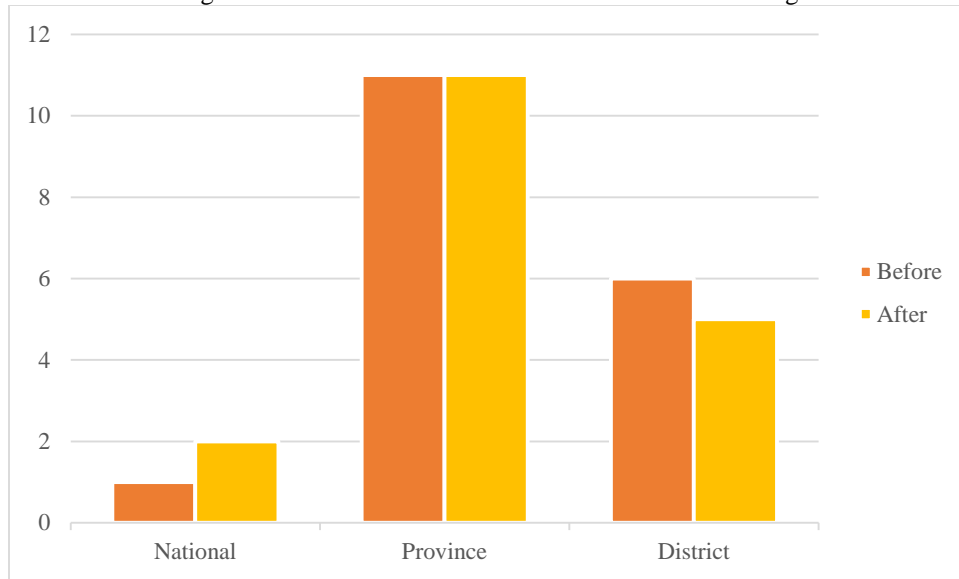


Figure 2 and 3 show the participants' position before the training and at the time of survey (after the training) and government offices they worked and currently work. At the time of training, 18 planning officers had 10 different positions from all the three government levels (one for the central government, 11 for provincial governments and six for district councils). Although more than half the officers were planners (five officers were planners, three were senior planners, three were provincial planners, one was a district planning officer and one was a principal planner), the total of five had positions of development control officer, field survey officer, civil engineer and planning assistant.

Although most of the officers had the same positions during and sometime after the training, four were promoted. Two former senior planner were promoted to be provincial planners either at the same or different provinces, a planner was promoted to a senior planner, and a former district planning officer was promoted to be a project administrator at a central government office. Additionally, one officer had worked in the central government office as an attachment for a few years after the training although the officer maintained the same position at

the government office. Other participants, though, maintained the same position at the same government offices. Hence, two central government officers, 11 provincial government officers, and five district officers participated in the survey.

3.2.2 Years at the Position and Government Office

This section describes the years of working experience that survey participants have at their current positions. As 18 participants have various years of working experience at their current positions, this section helps describe how they are qualified as planning officials at their respective offices. Additionally, the difference between average years of working experience at provincial and district government offices are captured through this analysis.

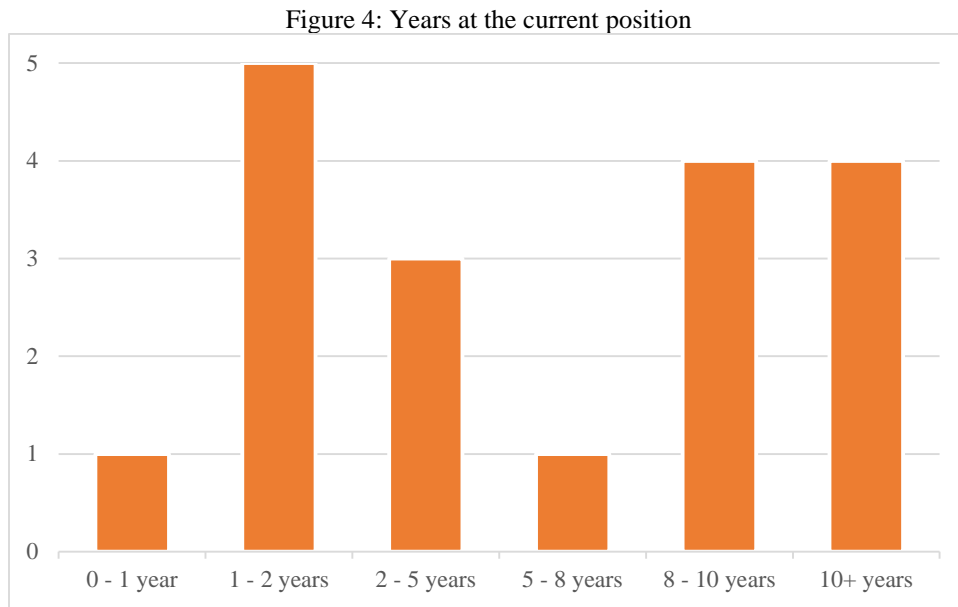


Figure 4 shows the participant's years of working experience in their current position. While half of the participants had more than eight years of working experience in their position, one officer had less than a year of working experience when the survey was conducted. The average year in current position is 6.0 years. As less-experienced planners tend to be dispatched to the district councils until they are promoted to become planners in provincial, the planning

officers in district councils have less years of working experience (3.3 years). Instead, planners, senior planner and provincial planners at provincial government have longer working experience even in their current positions (7.8 years).

3.2.3 Previous Planning and GIS Training

This section describes the survey participants’ previous experience in planning and GIS training. First, the average numbers and types of planning training attended are compared and contrasted between provincial and district government officers. Then, those of GIS training are compared and contrasted among the participants. This section helps distinguish the previous experience in capacity building projects between the provincial and government officials.

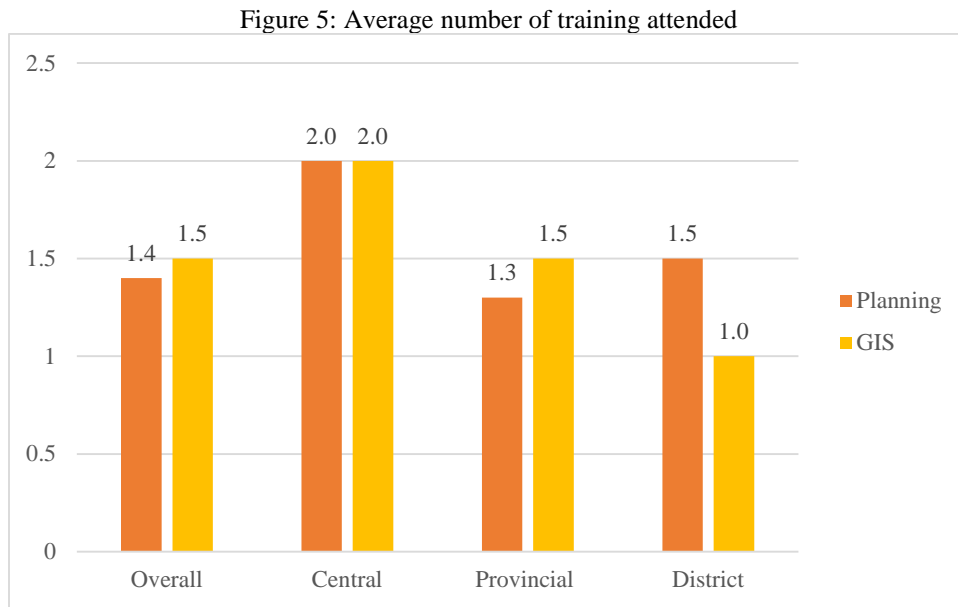


Figure 5 shows the numbers of planning and GIS training the participants attended. For the planning training, according to Figure 4, the number of average training they attended was 1.4 and the average number for both the provincial government officers and district council officers was about the same (1.3 for provincial officers and 1.5 for district officers). On one hand, although two provincial officers attended more than three training, 5 officers attended two

and six officers attended only one. Three officers did not have any opportunities to attend any training so far. Planning officers at the district level, on the other hand, they attended either one or two training.

However, there was a difference between the average number of GIS training for provincial and district officers, 1.7 and 1.0, respectively. The average number for all the officers at all the government offices were therefore 1.5. Particularly, the half of the provincial officers attended more than two GIS training whereas most of the district council officers attended only one GIS training. Therefore, the difference between provincial and district officers' number of attended GIS training became relatively significant. This suggests that the provincial planning officers are more likely to have an opportunity to attend GIS training through their work.

In terms of training type, participants attended various training, particularly for the planning ones. Types of the planning training the provincial officers mentioned in the survey included their undergraduate level and graduate level education, four officers and one officer, respectively, Comprehensive City Planning held in Tokyo, Japan by JICA, and stakeholder's meeting and consultative meetings. The ones for district officers were less varied. Most of the district officers only mentioned the training seminars that were organized either by the DPPH Lusaka Province or Lusaka Province Planning Authority. Only one officer mentioned two different training that was organized by the organizations other than the provincial planning offices in Lusaka.

On one hand, most of the provincial officers mentioned some GIS training, such as the ones organized by the DPPH-JICA, the DPPH headquarters, and the Provincial Center for Geographic Information Services (PCGIS), as well as the certificate program by the University of Zambia. On the other hand, district planning officers only mentioned the GIS training that was

organized by the DPPH - Lusaka Province Office in 2013. This difference contributes to the overall differences in the total number of attended training. Additionally, this result shows that provincial planning officers are likely to have more opportunity to attend more GIS-related capacity building projects.

3.3 Significance of the Research

This research is significant because it sheds light on the effectiveness/ineffectiveness of current capacity building projects in Zambia, a subject on which there is limited previous research on this topic. First, some research explains the current situation of decentralization in Zambia and proves the correlation between the effectiveness in capacity building and incentives. However, there seems to be a little scholarship that focuses on the effectiveness of capacity building scheme / projects and personal incentives. Therefore, this research on capacity building projects will reinforce the importance of well-planned projects.

Second, by interviewing the planning officials in Zambia, their personal incentives were revealed. This therefore helps uncover what the officers' motivation in learning planning-related skills intensively and if the incentives play an important role in building capacity through the projects. In doing so, this research can provide Zambian government with information about developing capacities among their officers and promote the decentralizing of their local government offices in their jurisdiction.

Last, this research utilizes quantitative evaluation methods to assess one component of capacity building in Zambia. Although various qualitative methods have been previously applied by international and donor organizations, qualitative analyses were hardly undertaken to evaluate

the individual participants' capacities and effectiveness of the training. Therefore, this research introduces a unique way of project evaluation for capacity building.

3.4 Limitation of the Research Methods

Although the survey provided insight into the Zambian planning officers' incentives for capacity building, there is a limitation particularly because of the survey size. About 50 surveys were initially emailed to the planning officers at the central, 10 provincial and 11 local government offices (two city councils and 9 district councils) in Zambia. However, only 18 of them replied with the surveys. Although these 18 survey participants represented all the government levels in Zambia, the sample size was significantly small. Therefore, conclusions that were drawn from the survey results might not be able to provide broader perspectives. The participants included a central government officer, nine provincial government officers and five district government officers at the time of the training. Thus, the survey overview for the central and local government officers were more likely to be influenced by a small number of participants.

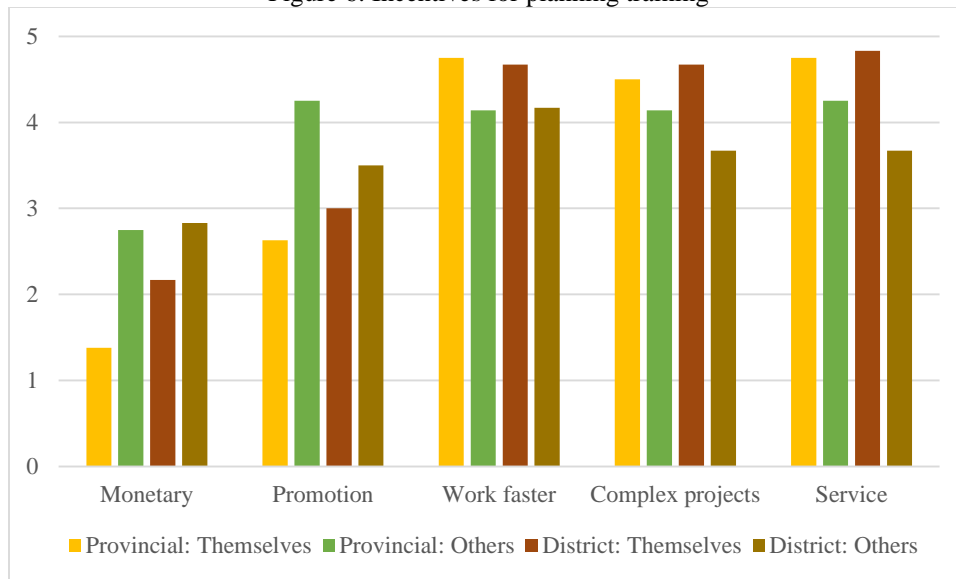
Chapter 4: Findings for Planning / GIS Capacity Building Projects

This chapter illustrates the findings from the survey and evaluation of a capacity building training. First, the incentives and motivations for planning and GIS training are discussed and how they can be different between the training types and the participants' respective government levels. Then, through presenting participants' general attitude towards capacity building projects, the participants' opinions about the projects, particularly what they are willing or unwilling to learn, are revealed. Lastly, by describing the results for quantitative project evaluation, it suggests that the participants with stronger personal incentives are more likely to improve their abilities through capacity building projects.

4.1 Incentives and Motivation for Planning Training

This section explains the incentives and motivations that survey participants had when they attended capacity building training in planning and Figure 6 particularly shows the incentives for provincial and district officers. First, the overall characteristics of five types of incentives for themselves and the others are discussed. After comparing the characteristics of incentives for themselves and others, the average scores between provincial and district government officers are compared. Lastly, this section explains the tendency of the incentive scores between the officers at the same government levels.

Figure 6: Incentives for planning training



In general, government officials attend capacity building training with various incentives. This is also the case for Zambian planning officials for both the planning and GIS training. Figure 6 shows the five main incentives for attending the planning training and how much the incentives affect them. First, in average, the professionals from all the government offices scored highest for “to improve service provision.” In fact, most of the survey participants scored 5 out of 5 and therefore the total average was 4.79 out of 5. Second and third highest items were for “to finish the tasks faster” and for “to work on more complex and high-profile projects” and the scores were 4.71 and 4.57, respectively. The lowest scored incentives were for “to be promoted” and “to be paid” (2.64 and 1.64, respectively). This result suggests that the survey participants are likely to attend the planning training in order to improve the service provision in the community and are unlikely to attend one to be promoted or paid. This implies that the participants are believed to be incentivized by societal motivation than any others. Further, they are likely to think that personal and monetary incentives are not as important.

The scores for “incentives for others” changed significantly. For instance, the highest-scored incentive for the others was “to finish the tasks faster” with the score of 4.08. Although, the second highest was “to improve service provision” with the score of 4.00, the third and fourth highest incentives of “to be promoted” and “to work on more complex and high-profile projects” scored closely, 3.93 and 3.92, respectively. The least scored incentive was again “to be paid,” however, it had much higher score of 2.71 this time. Thus, the participants were more likely to think that the others are incentivized by organizational motivation than societal one. Additionally, they think that the others have stronger personal monetary incentive for attending capacity building training for planning.

Additionally, the percent change from the incentives for themselves and to the ones for the others differ for each item. Because of the social desirability concept, smaller percentage change means that more participants revealed their true incentives. And the participants are likely to agree that the others’ incentives are similar to theirs. According to the survey, the absolute values for the each percent changes were as follows: 39.5% change for “to be paid;” 32.7% change for “to be promoted;” 16% change “to finish the project faster;” 16.5% change for “to work on more complex projects;” and 19.6% change for “to improve the service provision.” As the two values for personal incentives are much higher than the organizational and societal incentives, it is expected that personal incentives are more likely to potentially impact the participants’ motivation about capacity building training.

Comparing the incentives for themselves and the others, two things, the order of incentives, and the range of average scores, were different. First, the order of incentives for themselves was: 1) to improve service provision; 2) to finish the projects faster; 3) to work on more complex and high-profile projects; 4) to be promoted; and 5) to be paid (from the highest to

the lowest). However, the order for the others was 1) to finish the projects faster; 2) to improve the service provision; 3) to be promoted; 4) to work on more complex and high-profile projects; and 5) to be paid (from the highest to the lowest). This shows that the participants themselves are likely to be incentivized by the societal motivation first, organizational motivation next and the personal motivation lastly. Yet, they tend to think that the others are likely to be incentivized by organizational one first, the societal and personal ones next.

Second, the incentives for themselves have wider range than the ones for the others. The range for themselves was from 1.64 to 4.79 whereas the one for the others was from 2.71 to 4.08. Although the lowest-scored item was the same for both, the order of the ranking was different. Ideally, the order of the ranking for themselves and others should match. If they believe the incentives for themselves and the others were exactly the same, the orders for the incentives would have been the same. It is, therefore, suspected that some of the participants might have not been perfectly honest about their own incentives or they were likely to think that the others have more different, particularly personalized, motivations to attend the training for building their capacities. Thus, this result suggests that not only the societal incentives, particularly “improving the service provisions,” but also the organizational incentives, particularly “finishing the projects faster,” play an important role in motivating Zambian planners’ capacity building through planning training.

Although there seems to be no significant difference between the incentives for provincial and local government officers, some of the average scores changed between the officers at two different government levels and between the incentives for themselves and the others in the same government level. Particularly, the questions regarding personal incentives, being paid and promoted, had unique characteristics in the outcomes.

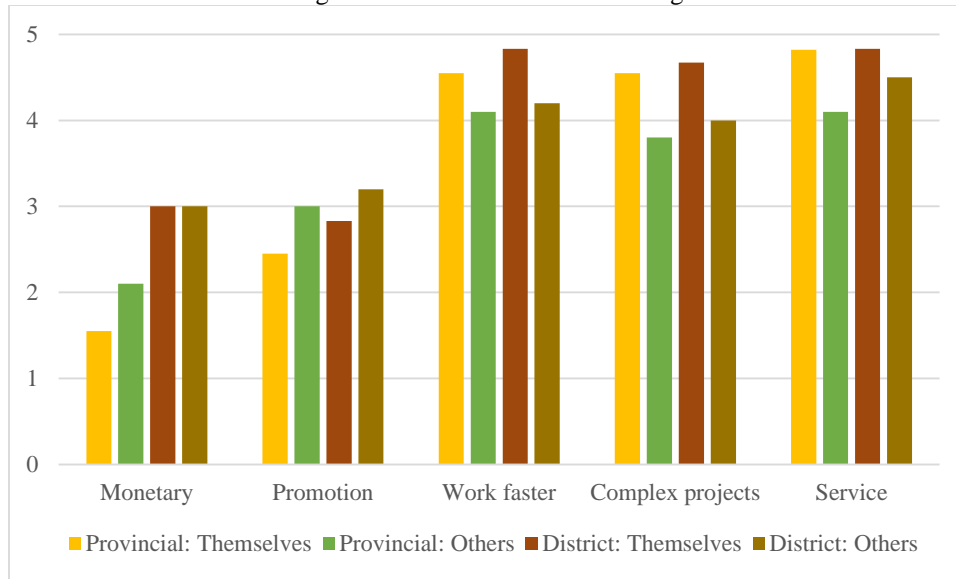
First, the average score for the personal monetary incentive increased from the officers themselves to the others in both the government levels. On one hand, the average scores for provincial officers were 1.38 for themselves and 2.75 whereas those for district officers were 2.17 for themselves and 2.83 for the others. This was because most of the provincial and senior planners chose 1, not important at all, as an answer while more than half of them increased the score for the others by at least one. On the other hand, since the average score for “being paid” for themselves was higher for district council officers in the beginning, the increase for the others was smaller. This implies that monetary incentive plays an important role in capacity building training for both provincial and district government officers.

Then, the average score for the promotion-based incentive started lower for themselves, 2.63, and increased to 4.25, becoming the highest incentives of the five for the provincial government officers whereas that for district officers only increased by 0.5, from 3.00 for themselves to 3.50 for the others. This result uncovers that promotion-based incentive can potentially influence more provincial planning officers for attending the capacity building activities.

4.2 Incentive and Motivations for GIS Training

This section explains the incentives and motivations that survey participants had when they attended capacity building training in GIS. Particularly, each incentive is discussed based on the classification, such as personal, organizational, and societal incentives, to reveal the difference between the scores. Then, the scores for GIS was compared with the ones for planning. That helps reveal if there is a difference between the incentives that the provincial and district government officials had for planning and GIS training.

Figure 7: Incentives for GIS training



The survey results for their and their colleagues' incentives for participating GIS training had more similarities. First, both of them had the same order for the ranking; 1) to improve service provision; 2) to finish the projects faster; 3) to work on more complex and high-profile projects; 4) to be promoted; and 5) to be paid (from the highest to the lowest). Then, the average scores for all the items did not change much from themselves to the others. Compared to the ones for planning training, the average range for GIS incentives was much less. This result implies that the survey participants were more likely to discuss their incentives freely for this type of capacity building training.

In terms of the monetary incentive, the average for themselves was 1.88 and that for the others was 2.20. Compared to the ones for planning training (from 1.64 to 2.71), the range from 1.88 to 2.20 for GIS training was much smaller. Interestingly, though, two participants scored 5, very important, for themselves while 13 out of 16 scored 1 or 2 for this question whereas no one scored 5 for monetary incentive for the planning training for themselves. Therefore, monetary incentive for GIS training are more likely to attract some of the planning officials.

The promotion-based incentive was increased from 2.71 for themselves to 3.20 for the others for GIS training and the range was again smaller than the one for planning training (from 2.64 to 3.93). However, for a relatively low average, a large number of participants scored high for this incentive. For instance, more than half the participants scored higher than 3 for their incentives and more than 12 of 15 respondents scored higher than 3 for the others. Hence, although promotion-based incentive might not be the strongest incentive according to the result, the incentive is more likely to play an effective role in motivating planning officials for their capacity building in GIS.

Two types of organizational incentive, “to finish the projects faster” and “to work on more complex and high-profile projects,” also motivated the participants for improving their abilities in GIS. Between those two, “to finish the projects faster” decreased less, from 4.65 for themselves and 4.20 for the others whereas the one for “to work on more complex and high-profile projects” decreased from 4.59 to 3.93. Although the scores for both the incentives were relatively high, the incentive of “to finish the projects faster” has higher score range and the smaller percent change from themselves to the others (10.6% change). Thus, between the two organizational incentives, finishing the projects faster is likely to be the stronger reason for the participants to learn GIS skills.

Among all the five incentives, societal incentive seems to have the strongest influence on the participants: the percent change between themselves and the others was the smallest. For this survey, participants scored 4.82 for themselves and 4.53 for the answers and the percent change was 6.4%. This suggests that the planning officers in Zambia are likely to attend the GIS training in order to improve the public services and are likely to agree that their fellow planners have the same incentives.

Compared to the planning incentives, the answers for GIS incentives also had more similarities between the provincial officers and district officers, except the incentive of being paid for the district officers themselves. In terms of the order of the rankings, both the provincial and district officers are likely to agree with the following order: 1) to improve service provision; 2) to finish the projects faster; 3) to work on more complex and high-profile projects; 4) to be promoted; and 5) to be paid for the incentives for themselves and the others. Importantly, the district officers' scores for "to be paid" for themselves and the others are exactly the same (3.0) and it is ranked fourth for the incentives for themselves. This suggests that district officers are more likely to be incentivized by monetary motivation, to be honest with their monetary incentives, and to expect the others to have the same monetary incentives.

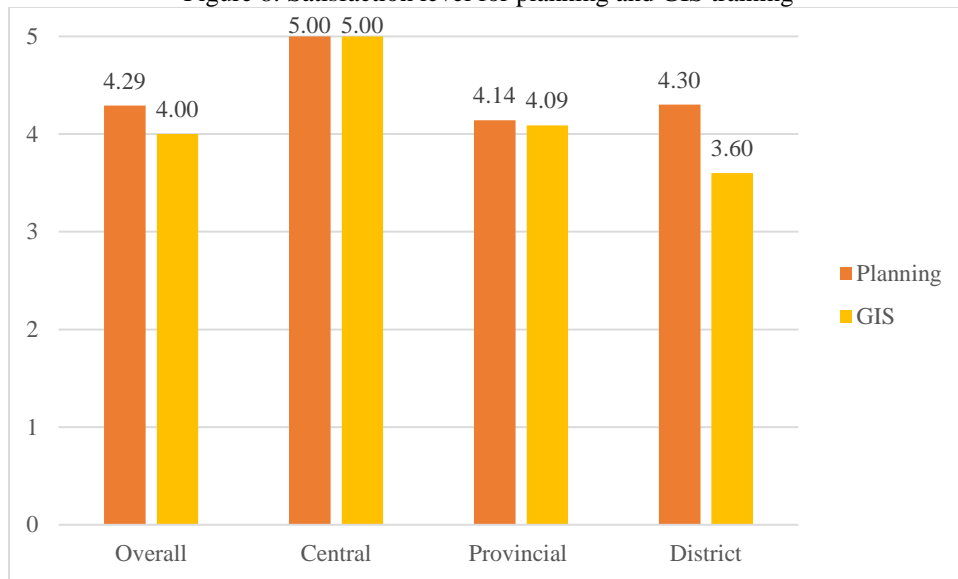
4.3 General Attitude towards Capacity Building Training

In this part, three questions were asked to assess general attitude of the planning officers towards capacity building training both for planning and GIS. The questions include: "What did you like the most about the training?", "What did you like the least about the training," and "What was the most useful thing you learned at the training?" Although all the questions received various types of answers, there were some unique characteristics for each question.

4.3.1 Satisfaction Level

This section explains the survey participants' satisfaction level of the capacity building projects both in planning and GIS. Particularly, the difference in satisfaction levels between government levels (provincial and district government offices) and subjects (planning and GIS) helps suggest how the participants have different views in capacity building training.

Figure 8: Satisfaction level for planning and GIS training



Overall, satisfaction levels for both the capacity building training type were high: 4.1 for planning and 4.0 for GIS training. Although the level for GIS training that district officers attended was slightly lower (3.6), there is no significant difference between the other levels (planning for provincial officers: 4.1; planning for district officers: 4.3, and GIS for provincial officers: 4.1). This suggests that most of the capacity building training that the participants had participated in were somewhat similar in some ways, such as the training structure, teaching style, contents, and duration, and they are likely to favor them.

4.3.2 Most and Least Favorite Part of the Training

This section describes the most and least favorite part of the planning and GIS training that the participants chose. The result suggests that the survey participants are likely to enjoy the content of the training for the planning ones and application of GIS to the real-world projects for the GIS ones. Besides “content” being the most frequently used answers, most of the answers for planning training were vague and only one participant answered in detail. His examples included land adjustment concept and inclusion of informality in to planning practice for two different

training. The more survey participants for the GIS training, however, answered in detail. The examples include spatial analysis skills, practical application of GIS with reference to planning through examples, mode of delivery, stimulating discussions with other participants, map making and analysis, instructor, and data preparation and analysis.

Nevertheless, the participants also had their least favorite in their training and those varied for each training type. Most of the participants listed either time frame or instructors for the planning training whereas most of them listed either time frame or contents for the GIS training. Particularly, an instructor was one of the most frequently mentioned answer and four of 14 participants mentioned as a least favorite part of the planning training. One participant explained the reason as most of the contents were not applicable to the planning environment in Zambia (K. Kudo, Personal Communication, March 22, 2015). Additionally, five out of 16 GIS training participants answered that time frame in general or short time frame of the training as their answers for the least favorite part of GIS training. Although not all the participants attended the same capacity building projects, the least favorite part of the training tends to be similar.

4.3.3 Most Useful Part of the Training

Although variety of items were listed for the third question, “what was the most useful part of the training?”, there was a categorical difference between the answers for planning and GIS training: new concepts or skills or installation of GIS into planning or existing projects, respectively. This difference can be expressed based on their way of thinking and general goal as a planner. On one hand, for instance, a large number of planners listed new yet detailed items that they thought was the most useful. The example included comprehensive planning in different

countries, transportation of planning, planning for non-motorized transport, and public speaking as a planner, managing training sessions, and compliance with new planning system.

On the other hand, the most useful items for GIS training that the survey participants listed was a type of GIS application, particularly to planning projects. In the listed answers, many of them answered either “GIS application” or “the use of GPS” because they tend to believe GIS helps improve the quality and duration of the projects. Some of the examples include application of GIS in planning, land management, development control, and real-life situations, as well as utilization of GPS in spatial planning.

This characteristics can be explained through their work behavior. As they were the planning officials to deal with planning projects at their government offices, they were expected to have wider range of planning knowledge to cater their projects towards their project sites with unique features. With new planning theories and knowledge, the survey participants were to believe that they could perform more effectively and efficiently. With new skills in GIS and knowledge in application to planning projects, they were to believe that they could improve the quality of the planning projects. Therefore, they saw more values in learning new planning theories and GIS applications when they attended the capacity building training.

4.4 Project Evaluation for JICA – DPPH GIS Training in 2012

In 2012, the DPPH and JICA organized a GIS training for 20 government officials (two from the central government and 18 from provincial governments) as well as undertook two surveys before and after the training and assessed daily quizzes to the training participants. Among 18 survey participants for this research, 10 of them attended to the 2012 training. In this section, evaluation that was undertaken by each officer before and after the training, daily

assessment that was given to the individual officer every day for nine days during the training, and completion reports by an individual participant and the Ministry of Local Government and Housing were first evaluated. Then, through comparing the two kinds of assessments and the survey results, the significance of incentives are discussed.

4.4.1 Evaluation before and after the Training

This section describes how confident the training participants are for their GIS skills. The same question, “If you are to rank your GIS skills from 1 to 10 (1 being a beginner and 10 being a professional), how do you rank yourself?”, was asked in the pre-training and post-training questionnaire to see how their confidence level changed through attending the training in 2012.

Table 1: Evaluation before and after the training

Government Officers	Pre-training	Post-training	Post-training Satisfaction
Overall	2.50	6.40	88.3%
Survey Participants	2.70	6.50	80.9%
Non-Survey Participants	2.90	6.33	96.7%

Table 1 shows what the participants’ self-evaluated GIS skills were before and after the training and how close their GIS levels are compared to their ideal levels. The evaluation before and after the training helped reveal how much an individual training participant had learned during the GIS training in 2012. First, the pre-training questionnaire asked mainly their previous experience with software for geospatial analyses, design for layout plans, and GIS-related projects, current GIS levels and their offices’ commitment towards GIS installation (Appendix 2). For instance, one question asked the training participants to self-evaluate their GIS skills from 1 to 10 (from lowest to the highest) and explain the reasons why. The average score for the question was 2.5 for the survey participants and 2.7 for all the participants. Some of the rationale for low-scored participants include: the lack of opportunity to be involved in GIS project; only

basic or introductory knowledge, particularly theories; whereas those for higher-scored participants include: capability in some GIS skills, sufficient knowledge, and previous interactive experience with GIS users.

The average self-evaluation score was increased in the post-training questionnaire. The average for all the participants was 6.4 and the one for survey participants was 6.5. Additionally, individual participants also answered their ideal GIS levels from 1 to 10 in the post-training evaluation. According to the value, the survey participants accomplished about 80% of their ideal GIS levels whereas all the participants felt they accomplished about 90% of their ideal levels and the non-survey participants did about 97%. Apparently, the survey participants were less confident about their GIS skills than the rest of the training participants.

4.4.2 Daily Assessments

This section describes the average scores that the participants received for their daily quiz in the daily assessment. Although the survey participants generally scored less for the evaluation before and after the training, survey participants, instead, actually scored higher in the daily quiz. The daily assessments included two parts, a self-evaluation to address how much they learned specific items every day and a quiz to show whether they had really understood and explain what they had learned in their own words. All the questions for the quiz were based on the daily lectures and practices. And it was open book, therefore, the questions were expected to be straightforward and simple to the participants. In order to complete the training, the participants were required to take them every day for nine days.

According to the assessment, the average percentage for the quiz for the nine days was 89.0% with the average for the survey participants being 93.8% and that for non-survey

participants being 83.7%. Among the survey participants, the highest percentage, 98.9%, was achieved by a senior planner from a province where GIS was not yet installed at all at the time of the training. Further, among the survey participants, eight officers who earned the percentages higher than 90% had five positions and were sent from seven government offices. At the time of the training, though, I observed that there was a significant difference among the provincial offices in terms of the GIS installation status. While some offices were determined to use GIS for all the projects, some offices prepared their development plans without using any GIS maps (K. Kudo, Personal Communication, February 21, 2012). Therefore, this result suggests that the prior GIS experience, particularly the GIS installation status for their offices and their participation to GIS projects, was not the main factors that influenced their abilities in learning GIS at the training.

4.4.3 GIS Check Test

At the end of the training, an individual's GIS skill was tested. During the test, groups of one to two officers were tested based on their abilities to 1) make a choropleth map of population density in Africa, 2) georeference⁴ a map. Although most of them were able to undertake the tasks in a timely manner, I observed the qualities of the maps and projects differed. For instance, some were able to label all the countries in Africa in the map, whereas some forgot to use a given scale. Generally speaking, though, I observed the officials who achieved high percentages for the daily evaluation were able to undertake the tasks even by themselves and without referring to the user manual or notes.

⁴ Georeferencing is "aligning geographic data to a known coordinate system so it can be viewed, queried, and analyzed with other geographic data" (ESRI 2015)

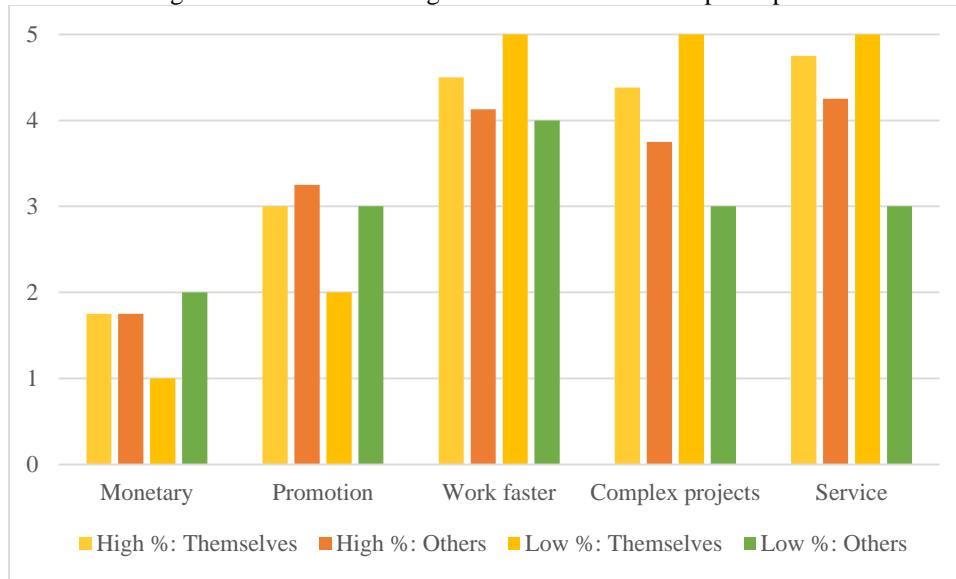
4.5 Relationship between Individuals' Incentives and Abilities to Learn

Incentives motivate individuals to develop their capacities. In this part, the incentives for the 10 Zambian planning officials who participated both in the 2012 GIS training and 2015 survey are compared and contrasted with based on their 2012 GIS evaluation and assessment results. This helps understand how the personal, organizational and societal incentives influenced their abilities to learn during the training and whether the training was effective to impact their capacity in planning and GIS skills. Additionally, dividing participants into two categories, above average and below average scores, helps suggest what made the difference between the participants' performance levels.

4.5.1 Participants above Average Score

This part deals with how the scores for the five incentives are different between survey participants with higher and lower than average quiz scores. First, the scores for the eight participants with higher average percentage are compared with the overall average. Then, the scores for two participants with lower average percentage are compared with the overall average. Last, the scores for participants with higher and lower scores are compared in order to see if there is a relationship between the five types of incentives and their abilities in GIS.

Figure 9: Incentives for high scored and low scored participants



Among the eight survey participants, the average incentive for themselves were similar to the overall incentives scores for all the survey participants, however, the score for personal non-monetary incentive was relatively high. The scores for themselves were: 1.75 to be paid; 3.00 to be promoted; 4.50 to work faster; 4.38 to work on more complex and high-profile projects; and 4.75 to improve service provision. While all the scores except for the promotion were lower than the overall average, the promotion-based incentive score for the eight participants was 1.29 points higher. This suggests that eight participants agree that promotion-based incentives are more likely to motivate them in developing their capacities in GIS related skills.⁵

4.5.2 Participants below Average Score

The average scores for the two officers were lower for personal incentives and higher for organizational and societal incentives. The scores for the incentives were: 1.00 to be paid; 2.00 to

⁵ As those for the others were: 1.75; 3.25; 4.13; 3.75; and 4.25, respectively, and the absolute value for the percentage change rarely changed between the incentives for themselves and the others, this assessment looked only at the incentives for themselves (0; 0.08; 0.09; 0.17; and 0.12, respectively).

be promoted; 5.00 to work faster; 5.00 to work on more complex and high-profile projects; and 5.00 to improve service provision. Although they had the highest possible organizational and societal incentives, their evaluations for their GIS skills at the training were lower than the overall average. Additionally, although their scores for the organizational and societal incentives were higher than those of the participants with above average percentage, their scores for the personal incentives were much lower (0.75 for personal monetary incentive and 1.00 for personal non-incentive). This suggests that personal incentives are likely to play a significant role in increasing their abilities to learn planning-related skills at the capacity building projects.⁶

⁶ One of the two participants in this category did not provide the information about the incentives for the others. Therefore, incentives for the others were not taken into consideration.

Conclusion

Incentives can motivate an individual's ability to learn more skills and knowledge. This is also the case for Zambian planning officers. By analyzing the surveys and evaluating a capacity building project quantitatively and qualitatively, this thesis suggests that incentives play an important role in capacity building.

First, the survey results suggest that societal incentives are likely to impact planning officers to attend capacity building projects and improve their abilities in learning planning or GIS skills. For the survey questions to answer their own incentives for both the planning and GIS training, planning officers scored highest for the societal incentive, which express their desire to improve service provisions for the communities. Because of the individuals' social desirability, the results made sense. However, when they were asked to answer the same question for their colleagues' incentives, more people scored higher for the personal incentive options. This implies that planning officials are likely to agree that personal incentives play a key role in their capacity building, however, they are reluctant to express their own personal incentives if they are asked directly.

Second, evaluation of the 2012 GIS training assesses the individual's performance through the training. Considering the fact that some of the planning officials without strong GIS background had achieved one of the highest percentages for their daily quizzes and final exams, current capacity building project in Zambia has helped some of the government officers develop their planning and GIS capacities.

Last, by comparing the survey results and individuals' achievement through the training, this thesis suggests that, among the three types of incentives, personal incentives are more likely to impact government officers' abilities in learning planning-related skills in Zambia. This is

because training participants with higher test scores are more likely to have higher personal incentive scores while those with lower test scores are more likely to have higher organizational and societal incentive scores.

Through evaluating and researching about capacity building projects in Zambia, I realized that there is a room to further improve the quality of current projects and the learning abilities of the individual planning officers. In order to do so, Zambian government offices needs to consider promoting more personal incentives, both monetary and non-monetary. For instance, salary increase and job promotion after attending the training and acquiring new skills and knowledge can suffice. Based on the survey results, the two personal incentives are expected to help improve their abilities in planning-related skills and technology, such as GIS and spatial analyses skills. However, it is extremely important to reward them appropriately so that planning officers always wish to further enhance their abilities.

This research was based on limited amount of survey results. Therefore, it is possible that findings could have be slightly different if more numbers of surveys and quantitative data for existing capacity building projects were available. Because of the lack of similar scholarship about capacity building in Zambia, this thesis significantly influences the evaluation methods of capacity building projects in southern African countries.

CDPPDS completion report, however, states that Zambian government offices face various capacity building challenges. They include the gap between the government officials and offices, lack of necessary equipment and available data.⁷ As some of the capacity building challenges were not captured in this thesis, further studies are highly recommended.

⁷ Completion Report for the Follow up project of the Capacity Development Programme for Provision of Decentralised Services (CDPPDS), Department of Physical Planning and Housing, Ministry of Local Government and Housing, April 2012

Capacity building of local governments can positively transform countries. Most importantly, human and institutional capacity building can help alleviate poverty and urban problems through achieving development goals and providing better service provision. Thus, it is extremely important for governments, both in developed and developing countries, to promote more incentives to the government officials. This can further enhance their abilities and eventually improve the living environment of the local residents and provide sustainable development of the countries.

Appendix 1: Survey Questions

Survey Questions for Planning and GIS training

Thank you for participating in this **Planning and GIS Training** survey. This is a survey to evaluate the current capacity building projects for government officials in Zambia and what impacts them to further improve their planning-related skills and knowledge. This survey is conducted only to support Kana Kudo's master's thesis preparation at University of California Los Angeles.

This survey is anonymous and confidential. As taking this survey is voluntary, you can stop at anytime although it would be appreciated if you could answer all questions.

There are two sections for the entire survey about capacity building in Zambia. The each set of survey contains 10 questions for your opinion and experience with the previous workshop / training in planning-related matter. It takes about 10 minutes to complete each part of the survey.

Your name:

Position and Office:

Years of experience in current position / other planning-related positions:

Planning Training

1. How many planning training did you attend?

2. Which planning training have you attended?

3. At the training, what did you learn? Please choose all that applies.

- 1) Planning history
- 2) Current planning systems in your country
- 3) Current planning systems in other countries

- 4) Planning theories
- 5) Application of planning theories

4. From your office, who else went to the training with you?

5. How satisfied are you with the planning training? Please use the scale of 1 - 5 (1=not satisfied at all, 5=very satisfied)

6. What did you like the MOST about the training? Please name one. (ex: content, instructor, etc)

7. What did you like the LEAST about the training? Please name one. (ex: content, instructor, etc)

8. What was the most useful thing you learned at the training?

9. We are interested in learning why people attend planning training. Please indicate how much the following statements are applicable and important to you to attend the training (1=not important at all, 5=very important)

● "I will get a lot of allowance!"	1	2	3	4	5
● "I will be promoted!/be in higher position with more planning knowledge!"	1	2	3	4	5
● "With the new knowledge, I can finish my tasks faster!"	1	2	3	4	5
● "With the new knowledge, I can work on more complex and high-profile projects!"	1	2	3	4	5
● "With the new knowledge, I can improve the service provision for the community"	1	2	3	4	5
● Other. Please explain.	1	2	3	4	5

10. How much do you think the following statements are applicable and important to OTHER PARTICIPANTS to attend the training? (1=not important at all, 5=very important)

● "I will get a lot of allowance!"	1	2	3	4	5
● "I will be promoted!/be in higher position with more planning knowledge!"	1	2	3	4	5
● "With the new knowledge, I can finish my tasks faster!"	1	2	3	4	5
● "With the new knowledge, I can work on more complex and high-profile projects!"	1	2	3	4	5
● "With the new knowledge, I can improve the service provision for the community"	1	2	3	4	5
● Other. Please explain.	1	2	3	4	5

GIS Training

1. How many GIS training did you attend?

2. Which GIS training have you attended?

3. At the training, what did you learn? Please choose all that applies.

- 1) Map-making skills
- 2) Basic spatial analysis skills
- 3) Advanced GIS skills (ex: spatial modeling, coding)
- 4) How you can apply GIS into specific projects
- 5) Other. Please explain.

4. From your office, who else went to the training with you?

5. How satisfied are you with the GIS training? Please use the scale of 1 - 5 (1=not satisfied at all, 5=very satisfied)

6. What did you like the MOST about the training? Please name one. (ex: content, instructor, etc)

7. What did you like the LEAST about the training? Please name one. (ex: content, instructor, etc)

8. What was the most useful thing you learned at the training?

9. We are interested in learning why people attend GIS training. Please indicate how much the following statements are applicable and important to you to attend the training (1=not important at all, 5=very important)

- | | | | | | |
|---|---|---|---|---|---|
| ● "I will get a lot of allowance!" | 1 | 2 | 3 | 4 | 5 |
| ● "I will be promoted!/be in higher position with more planning and GIS knowledge!" | 1 | 2 | 3 | 4 | 5 |
| ● "With the new knowledge, I can finish my tasks faster!" | 1 | 2 | 3 | 4 | 5 |
| ● "With the new knowledge, I can work on more complex and high-profile projects!" | 1 | 2 | 3 | 4 | 5 |
| ● "With the new knowledge, I can improve the service provision for the community" | 1 | 2 | 3 | 4 | 5 |
| ● Other. Please explain. | 1 | 2 | 3 | 4 | 5 |

10. How much do you think the following statements are applicable and important to OTHER PARTICIPANTS to attend the training? (1=not important at all, 5=very important)

- | | | | | | |
|---|---|---|---|---|---|
| ● "I will get a lot of allowance!" | 1 | 2 | 3 | 4 | 5 |
| ● "I will be promoted!/be in higher position with more planning and GIS knowledge!" | 1 | 2 | 3 | 4 | 5 |
| ● "With the new knowledge, I can finish my tasks faster!" | 1 | 2 | 3 | 4 | 5 |
| ● "With the new knowledge, I can work on more complex and high-profile projects!" | 1 | 2 | 3 | 4 | 5 |
| ● "With the new knowledge, I can improve the service provision for the community" | 1 | 2 | 3 | 4 | 5 |
| ● Other. Please explain. | 1 | 2 | 3 | 4 | 5 |

This is the end of the survey. Thank you very much!

Appendix 2: Pre-training Questionnaire

GIS Questionnaire for the DPPH GIS Workshop 2012

The Department of Physical Planning and Housing (DPPH), under the Ministry of Local Government, Housing, Early Education and Environmental Protection, is planning to hold a GIS workshop for the DPPH staff from 30 January to 10 February, 2012, in collaboration with the Japan International Cooperation Agency (JICA). This questionnaire is conducted so that the DPPH as well as the instructors of the workshop will understand the average GIS levels and skills of the participants. All the information collected by the questionnaire will be compiled and might be presented in a summary form during the workshop. No individual data collected will be presented or reported in any way.

Please complete this form and send it back to the DPPH Headquarters by Friday 13 January, 2012.

General & Preliminary Information

1. Name of your provincial office:

2. Your name:

3. Your job title:

4. Years of experience in your current position:

5. Does your provincial office currently use GIS to support its works and projects?
 - a. If your answer is yes for the question 5, how many years have your provincial offices been using GIS?

 - b. If your answer is no for the question 5, are your provincial office planning to use GIS in the future?

- c. If your provincial office is planning to launch GIS program, when is it likely to happen? Please specify.

GIS Software and Skills

6. Which GIS software does your office have? Please name all the GIS software that your office is currently in use.
 - a. If your answer for the question 6 is yes and ArcGIS is one of them, please specify the number of ArcGIS licenses your office currently have.
7. How long have you been using the above mentioned GIS software?
8. If you have taken some GIS courses and/or attended GIS trainings, please specify the time and duration of the courses / trainings as well as the organizers of the courses / trainings. If you have any certificates related to GIS, please name them.
9. How often do you use GIS software? Please specify the frequency in a monthly basis.
10. Please name the GIS applications that you have used.
11. Please name the GIS applications that you think you can easily command.

12. Please name the GIS applications that you think you are unfamiliar with.

13. Please provide some examples of GIS works / projects that have been done by you and/or your provincial office. They do not need to be completed. Please explain them in detailed.

14. If you are to rank your GIS skills from 1 to 10 (1 being a beginner and 10 being a professional), how do you rank yourself?

a. Please explain the reason / rationale for the ranking.

15. The geographically referenced data used for GIS is called shapefile. Please name all the shapefile your office currently has.

16. Please explain how you gained the shapefile you mentioned above.

17. Does your office currently maintain GIS database / geodatabase for the province?

- a. If your answer is yes for the question 17, please explain the structure of the database.
- b. If your answer is no for the question 17, please explain how your office maintains the shapefiles.

18. Have you ever dealt with Google Earth?

- a. If your answer is yes for the question 18, what did you do with the Google Earth? Please explain the projects that you used Google Earth for and specify the applications you used.

19. Have you ever used open source GIS, such as QGIS, GRASS GIS, MapServer, etc?

- a. If your answer is yes for the question 19, please name the software.
- b. If your answer is yes for the question 19, how did you use it? Please specify the application you have used.

AutoCAD

20. How many AutoCAD licenses does your office have?

21. How often do you use AutoCAD? Please specify the frequency in a monthly basis.
22. Please provide some examples of the AutoCAD works done by you / your provincial office. They do not need to be completed. Please try to explain in detailed.
23. If you are to rank your AutoCAD skills from 1 to 10 (1 being a beginner and 10 being a professional), how do you rank yourself?
 - a. Please explain the reason / rationale for the ranking.

Staff

24. How many full-time GIS staff do you have in your office (only include staff on a government payroll)? Please specify their positions as well.
25. How many part-time GIS staff do you have in your office (include interns)? Please specify their positions as well.
26. If your provincial office does not currently have any GIS staff, is your office planning to hire new GIS staff or provide some kind of GIS training to the existing staff in the future? Please provide the future plans for GIS as detailed as possible, if any.

GPS

27. Does your provincial office use GPS units for field work?

- a. If your answer is yes for the question 27, which GPS units do you use?
- b. If your answer is yes for the question 27, how many GPS units does your provincial office have?

28. How often do you use GPS units? Please answer the frequency in a monthly basis.

29. Please provide examples of how you have used GPS units before for your work at the office. Please try to explain as detailed as possible.

Appendix 3: Post-training Questionnaire

GIS Questionnaire for the DPPH GIS Workshop 2012

The Department of Physical Planning and Housing (DPPH), under the Ministry of Local Government and Housing held a GIS workshop for the DPPH staff from 20 February to 2 March, 2012, in collaboration with the Japan International Cooperation Agency (JICA). This questionnaire is conducted so that the DPPH as well as the instructors of the workshop will understand what the participants have learned and how they felt about the training. All the information collected by the questionnaire will be compiled and might be presented in a summary form in a completion report. No individual data collected will be presented or reported in any way.

Please complete this form and submit it by Friday 2 March, 2012.

General & Preliminary Information

1. Name of your provincial office:
2. Your name and job title:

DPPH GIS Training

1. How much did you think you have learned about GIS from the training? Please circle the most appropriate number below (1= did not learn anything from the training and 5= learned a lot).

1 2 3 4 5

2. How difficult did you think the contents of the training were? Please circle the most appropriate number below (1= were not difficult at all and 5= were very difficult).

1 2 3 4 5

3. Which GIS function did you enjoy performing the most during the training? Please explain the reasons if any.

4. Which GIS function did you not enjoy performing during the training? Please explain the reasons as well.

5. What was the favorite part of the training for you? Please also explain the reasons if any.

6. What was the least favorite part of the training for you? Please explain the reasons as well.

7. Please name the GIS applications that you think you can easily command after the training.

8. Please name the GIS applications that you think you are still unfamiliar with even after the training.

9. How did you feel about attending the training? Do you think it was worth it? Please describe your view.

10. How did you feel about learning about GIS with staff from the other provincial offices? Please describe your view regarding this matter.

11. What was your opinion about the schedule of the training (usually, a day includes a presentation, lecture and training). Do you think it was too much material covered in a day or it was not enough? Please describe what you felt about this matter.

12. How did you feel about the contents of the training? Do you think they were enough / what you wanted to learn or were not enough / what you did not wish to learn?

13. How did you feel about the instructors / their ways of teaching? Please explain your view.

14. If you are to rank your GIS skills from 1 to 10 (1 being a beginner and 10 being a professional) now (after the training), how do you rank yourself?
 - a. Please explain the reason / rationale for the ranking.

 - b. What is the ideal GIS level for you? Please provide the number by using the above mentioned ranking system.

 - c. If you have not achieved your goal, what are you planning to do to achieve the level?

15. Now that you have completed the DPPH GIS training, please explain what you want to do with GIS. You may talk about your personal provision in this question.

- a. Please explain what your office can do by using GIS skills and knowledge that you acquire.

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