Leadership Competencies for Managing and Implementing Sustainability Plans in Canada

by

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A thesis

presented to the University of Waterloo

in fulfillment of the

thesis requirement for the degree of

Master of Environmental Studies

in

Sustainability Management

Waterloo, Ontario, Canada, 2018

Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

To achieve sustainable initiatives, local authorities are implementing sustainability plans by two different approaches, implementing community-wide sustainability plans with multi-stakeholder partnerships and implementing corporate sustainability plans without multi-stakeholder partnerships. These plans, including Integrated Community Sustainability Plans and Climate Action Plans have roots in global sustainability movements shaped by United Nations initiatives, such as Agenda 21 and Local Agenda 21. Within these movements, municipal actors are both pursuing sustainability goals at the corporate level and partnering with local organizations to achieve sustainability goals at the community level.

The role of leadership is recognized as central to the effective management of plan implementation. Professional managerial competencies, as well as sustainability expertise and specialized cross-sector leadership competencies, have been generally discussed as important competencies for individuals managing the formulation and implementation of sustainability plans. However, there is scant research that examines such micro-level dynamics of plan implementation and of multi-stakeholder partnership management, including the specificities of these competencies, such as what competencies are linked to them and how individuals use them to achieve results.

This research explores which competencies are most needed to implement sustainability plans and/or manage partner engagement across sectors. The study identifies nine competency clusters and forty-nine competencies. The nine competency clusters include communication, project management, individual attributes, knowledge management, problem-solving, teamwork and cooperation, team leadership, engagement, and impact and influence. Early insights indicate that competencies, such as knowledge integration, communication, facilitation, and relationship-building, are key to facilitating cross-sector collaborations. Similarly, project management, teamwork and cooperation, and team leadership are key to inside sector collaborations.

Improved understanding of the key competencies needed to implement sustainability plans may inform training and post-secondary curricula for educating future sustainability practitioners. Ultimately, the aim of this research is to help communities attract and develop the human resources necessary to meet their climate action, energy conservation, and other sustainable development goals.

Acknowledgement

I would like to pay special appreciation to my supervisors Dr. Adriane MacDonald and Dr. Amelia Clarke who have helped and guided me at every stage of my research. I would also like to thank my reader Dr. Michael Wood. In addition, I would like to thank all the participants for their valuable input.

I am very thankful for my parents Fengqin and Junling's support and love. Finally, I would like to thank my friends Yushuo Cai, Yu Xie, Bowen Zhao, Mary Jote, Ran Tao, Jiaying Peng, and Yawen Zhang for their help, encouragement, and love.

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Chapter 1: Introduction

1.1 Introduction

In recent years, the world has started to pay more attention to sustainability issues. Since 1992, the United Nations has announced a series of sustainable development plans, including Agenda 21 at the Earth Summit, Habitat Agenda at Habitat II, and the New Urban Agenda at Habitat III (ICLEI, 2002; UNDP, 1992; UNDP, 2016). These plans were accepted and implemented by national and local authorities, civil societies, and businesses across the world (ICLEI, 2002; UNDP, 1992; UNDP, 2016). In Agenda 21, the United Nations suggested that the efforts of local authorities are required to successfully implement these plans (UNDP, 1992; ICLEI, 2002).In 2012, built on the success of Millennium Development Goals (MDGs), the Sustainable Development Goals (SDGs) were announced at the United Nations Conference on Sustainable Development in Rio de Janeiro and was expected to meet the Goals by 2030 (United Nations Sustainable Development, n.d.-a). “The objective was to produce a set of universal goals that meet the urgent environmental, political and economic challenges facing our world” (United Nations Sustainable Development, n.d.-a, para. 1). SDGs are actions “to end poverty, protect the planet and ensure that all people enjoy peace and prosperity” (United Nations Sustainable Development, n.d.-b, para. 1), and covered 17 interconnected areas, such as poverty, climate change, clean water. This study is centered on Goal 11 Sustainable Cities and Communities, and Goal 17 Partnerships for the Goals. The Community Climate Action Plan and the Integrated Community Sustainability Plan are two such plans that are executed (Clarke, 2012). In addition to the climate plans, in 1994, the Partners for Climate Protection (PCP) was launched to guide local municipalities to develop strategic plans to reduce their greenhouse gas emissions and to integrate climate change issues into their agenda (FCM, 2015). In Canada, there are more than 280 local authorities who have joined the program and undertaken more than 800 greenhouse gas emission reduction

projects and plans which help in attaining the climate goals (FCM, 2015). The PCP's five-milestone framework guides its partners to design and implement their climate action plans (FCM & ICLEI, 2015). The framework covers all the stages of the plan implementation process, starting from creating baselines emission forecasts and setting targets to develop and implement the local climate action plan, and to the last stage of monitoring and reporting (ICLEI, 2012). A community climate action plan can be implemented by community sectors and by corporate (local municipality) sectors (ICLEI, 2012). There are two types of climate action plans, corporate climate action plan and community climate action plan. In corporate climate action plans, local governments (corporates) tackle the topics and areas that within their control and influence, such as land use planning, greening of transportation, and updating public infrastructure (Clarke & Ordonez-Ponce, 2017). Community climate action plans, in comparison, covers all GHG emissions in the region (community), such as renewable energy transitions and individual ecological footprint reductions (Clarke & Ordonez-Ponce, 2017). Community climate action plans need multi-stakeholder partnerships to implement successfully and effectively.

In relation to broader sustainability plans, in 2005, the Canadian Federal Government introduced the Gas Tax Funding Program to support and encourage local municipalities to develop and implement an Integrated Community Sustainability Plan (ICSP) (Ling, Hanna, & Dale, 2009). An ICSP is a long-term plan for municipalities to integrate sustainable development into their agenda and to create a more sustainable community at the local level (Association of Ontario, 2007). This includes environmental, social, and economic concerns of the development of communities (Association of Ontario, 2007; Clarke, 2014). To meet the requirements of ICSP, municipalities need to create a co-ordinated approach, to include social, environmental, and economic objectives in planning, to collaborate with other municipalities and to consider residents' interests in the long-term planning stage (Association of Ontario, 2007).

It is hard for local authorities to work independently; partnerships with other sectors are needed to solve complex sustainability issues (Selman, 1998). There are three deficits existing in sustainable governance: regulatory deficit, implementation deficit, and participation deficit (Biermann, Chan, Mert, & Pattberg, 2007). The regulatory deficit is seen as the absence of inter-governmental regulations in sustainable governance (Biermann et al., 2007). The implementation deficit results when regulations are poorly implemented; and the participation deficit is the lack of participation from diverse groups (Biermann et al., 2007). Using a partnership approach is expected to help address these deficits (Biermann et al., 2007a; Clarke & Erfan, 2007). By definition, sustainable development concerns not only environmental interests, but economic and social interests as well (Biermann et al., 2007). This transboundary nature of sustainable development requires the involvement of a group of sectors and segments of society to solve these unstructured issues, while the engagement of different sectors is also necessary for solving these same issues (Biermann et al., 2007). Furthermore, the business sector becomes a strong political player in sustainability as well as civil society organizations (NGOs) (Biermann et al., 2007). The interdependence among business, civic society, and the local authority forces the partnership to become part of the solution to any environmental- and sustainable-related problems (Biermann et al., 2007). Therefore, the achievement of sustainable development requires businesses, local government, and local civil society organizations to play their respective roles and to move their own activities more toward environmental and ecological sustainability (Jennings & Zandbergen, 1995).

A cross-sector social partnership (CSSP) is defined as, "the linking or sharing of information, resources, activities, and capabilities by organizations in two or more sectors to achieve jointly an outcome that could not be achieved by organizations in one sector separately" (Bryson et al., 2006, p. 6). A cross-sector social partnership can be separated into two types, small and large (Clarke & MacDonald, 2016). In large CSSPs, also termed multi-stakeholder partnerships, multiple stakeholders from each of the three

sectors form a problem-centered partnership (Clarke and MacDonald, 2016; Rühli, Sachs, Schmitt, & Schneider, 2015). Multi-stakeholder partnerships increase the successfulness of community-wide implementation and enlarge the range of topics in local plans (Clarke, 2012; ICLEI, 2002). Cross-sector multi-stakeholder partnerships help local authorities to address sustainability, not only in their administrative regions and organizations, but also in their entire geographic regions (Clarke, 2011). Also, partnerships can increase the number of organizations and companies which are moving toward sustainability get more financial support than traditional project management methodologies (Clarke, 2011). However, multi-stakeholder partnerships can be limited by the effectiveness and efficiency of plan implementation. If the participants cannot find a way to work together and to develop a mutual trust in their group work, the implementation deficit and participation deficit can drag down the efficiency of the partnership (Biermann et al., 2007; Warner, 2003). This can be attributed to participants' joining the partnership with different interests and aims (Biermann et al., 2007). Another challenge is when the partnerships fail to fill the regulatory and participation deficits (Biermann et al., 2007; Clarke & MacDonald, 2016). Voluntary participation is the main reason for stakeholders to participate in multi-stakeholder partnerships; there is no binding authority (Biermann et al., 2007). As the number of participants increases, a competitive element emerges in the partnership, which can cause fragmentation within the partnership (Biermann et al., 2007).

Leadership plays a critical role in resolving and mitigating conflicts in multi-stakeholder partnerships (Bryson, Crosby, & Stone, 2006; Emerson & Smutko, 2011; Ospina & Foldy, 2010; Saz-Carranza & Ospina, 2011). The success of the multi-stakeholder partnership depends on the skills, competencies, and efforts of the participants (Bardach, 1998; Poxton, 1999). This research uses Boyatzi's (1982) definition of competency, which is the most common definition used in the literature (Crews, 2010; Crosby & Bryson, 2005; Emerson & Smutko, 2011; Getha-Taylor, 2008; Visser & Courtice, 2011;

Williams, 2002). Boyatzi (1982, p. 21) defines competency as “an underlying characteristic of a person in that it may be a motive, trait, skill, aspect of one’s self-image or social role, or a body of knowledge which he or she uses”. McDonald and Stadtler (2017, p. 45) conclude that skills define “the ‘what’ of specific learned activities” and competencies define “ ‘how’ the learned activities are performed”.

Leadership is one of the most influential components of organizational sustainability actions (Quinn & Dalton, 2009). Sustainability leadership is not a new school of leadership, but leadership within a specific context – leading us toward a sustainable future (Visser & Courtice, 2011). It is a long-term journey which requires continuous attention and capabilities development (Crews, 2010; Jones, 2000). Some studies have contributed to the better understanding of leadership, its relationship to companies' objectives, and its sustainability strategies (Crews, 2010; Egri & Herman, 2000; Finkelstein & Hambrick, 1996; Hambrick & Mason, 1984). Fewer studies exist on the competencies needed for implementing sustainability plans (Crews, 2010; Egri & Herman, 2000; Gloet, 2006; Hind et al., 2009; Quinn & Dalton, 2009; Visser & Courtice, 2011). The topics in sustainability leadership studies are limited, as explained by Morsing and Oswald (2009, p.83): “The literature on [environmental] sustainability and corporate social responsibility has not paid much attention so far to how leaders enact a corporate sustainability strategy among organizational members.” Some research offers case studies on environmental leaders (Quinn & Dalton, 2009; Ritvala et al., 2013; Westley, 1997), but there are few cross-boundary research pieces on leaders in the environmental movement (e.g., Snow, 1992), and only a few studies on comparing leaders from different types of organizations (e.g., Egri & Herman, 2000). Moreover, leadership competencies for implementation of local sustainability plans is understudied.

Currently, there is a gap in the literature regarding the leadership competencies for implementing local sustainability plans, both with and without multi-stakeholder

partnerships. This thesis seeks to address this gap and provides more insights for individuals and organizations who are working, or want to work, in the sustainable development field.

1.2 Research Questions

To study the essential competencies for effectively managing local sustainability plans in Canada, linking in Climate Action Plans and Integrated Community Sustainability Plans, the following research questions have been developed. Resolving the research questions will allow for clearer guidelines and greater insights into competency development and training programs specifically for individuals working on the implementation of sustainability plans:

1. What are essential competencies that help individuals manage sustainability plans effectively?
2. Are there different competencies required to manage local sustainability plans with and without partners?

1.3 Objectives and Goals

The overall purpose of the study is to use a qualitative research approach, behavioral event interview (BEI), to identify key competencies for individuals in multi-stakeholder partnerships or/and individuals not in partnerships to successfully implement sustainability plans, such as the Climate Action Plans and Integrated Community Sustainability Plans, in Canada.

The research goals and objectives are listed as follows:

Goals:

1. To fill the research gap about the leadership competencies needed for managing local implementation sustainability plans in Canada.
2. To provide insights for companies, organizations, governments, and training programs by identifying and developing a list of key competencies needed.

Objectives:

1. To identify key competencies for individuals to effectively implement sustainability plans with and/or without a multi-stakeholder partnership.
2. To identify if the competencies are different for individuals who work within a multi-stakeholder partnership, and those that with work without a partnership, while they are implementing sustainability plans at the local level.

To achieve the objectives and goals of the research, I will collect data through one-to-one semi-structured interviews. Managers and experts who are working in the implementation of Community Climate Action Plans and Integrated Community Sustainability Plans in Canada were considered potential interviewees and as a result were approached by the researcher. The behavioral event interview (BEI) helped the researcher to identify essential competencies for individuals who are managing sustainability plans that are implemented through multi-stakeholder partnerships and for those who are working without partnerships. The interview results are compared to identify the differences and similarities among those two types of the implementation processes. To be statistically significant, 26 interviews were conducted and analyzed by the researcher.

1.4 Thesis Roadmap

This chapter provides a brief overview of the background and objectives of the study. It is followed by the literature review chapter, methods chapter, results chapter, discussion chapter, and conclusion chapter. The literature review chapter (Chapter 2) provides a comprehensive review of the literature on local sustainable development, and on the competencies required for managing cross-sector social partnerships and sustainability plans in organizations. The methods chapter (Chapter 3) provides the detailed research approaches and tools that were used in the study. The end of the methods chapter explains the limitations, reliability, and validity of the study. Research data and findings are synthesized in the results chapter (Chapter 4). Leadership competencies for managing sustainability plans at the local level are detailed in this chapter. The discussion chapter (Chapter 5) offers how the research findings answer the research questions, providing the researcher's perception on the topic and explaining the challenges of the study. Lastly, the conclusion chapter (Chapter 6) briefly summarizes the research objectives and findings, concludes the implications of the research, and states opportunities for future research.

Chapter 2: Literature Review

This literature review chapter elaborates seven topics as they relate to the research questions, includes cross-sector social partnership, multi-stakeholder partnership, sustainability and sustainability plans, leadership competencies in cross-sectoral partnership, sustainability, and general leadership. Each topic starts with the broader review and theories from the literature and narrows to individual concepts.

2.1 Cross-Sector Social Partnerships

In the cross-sector social partnership literature, various terms are used to describe "cross-sector social partnership" such as "partnership", "cross-sector social partnership" (CSSPs) (Selsky & Parker, 2005), "blurring of sectors" (Kamarck, 2003; Kettle, 2005), "cross-sector collaboration" (Bryson et al., 2006; Heuer, 2011), "collaborative public management" (Page, 2010), and "collaboration" (Hibbert, Siedlok, & Beech, 2016). In this study, cross-sector social partnership is defined as "the linking or sharing of information, resources, activities, and capabilities by organizations in two or more sectors to achieve jointly an outcome that could not be achieved by organizations in one sector separately" (Bryson et al., 2006, p. 6).

Selsky and Parker (2005) offer four types of cross-sector social partnerships: business-nonprofit partnerships, government-business partnerships, government-nonprofit partnerships, and tri-sector partnerships. The first three types are cross-sector social partnerships that involve two sectors; the fourth type of cross-sector social partnership, tri-sector partnership, is a multi-stakeholder partnership among private, public, and civil society sectors (Selsky & Parker, 2005). Partnerships between business and non-profit organizations tend to focus on environmental issues and economic development initiatives, which can increase businesses' reputations and competitive advantages (Selsky & Parker, 2005), while at the same time helping non-profit organizations to

increase their influences on social change (Fabig & Boele, 1999). The second type of cross-sector partnership, the public-private partnership, focuses on areas which have big social implications, such as infrastructure development and public services (Selsky & Parker, 2005). Government-nonprofit partnerships are concentrated on job development and welfare (Selsky & Parker, 2005). Finally, increased awareness of complex social problems (Pasquero, 1991) and increased desires to contribute to solving these global challenges (Warner & Sullivan, 2004) drive tri-sector collaboration in multi-stakeholder partnerships (Selsky & Parker, 2005)

Clarke and MacDonald (2016) did a further classification on CSSPs and divided cross-sector partnerships into two groups, large CSSPs, and small CSSPs. Large CSSPs, also called multi-stakeholder partnerships, "have multiple partners from all three sectors", business, public, and civil society; small CSSPs are partnerships which "have just two partners (a dyad) or three partners (a triad) from two or three of the different sectors" (Clarke & MacDonald, 2016, p.2). The research outlined in this thesis focuses on multi-stakeholder partnerships as defined by Clarke and MacDonald (2016). This boundary blurring multi-stakeholder partnership enhances stakeholders to take advantage of the resources of others and helps stakeholders to generate expected outcomes of certain social challenges (Andrews & Entwistle, 2010). Each sector brings specific resources to the partnership. Public sector partners have lawmaking and regulatory power; business sector partners have financial resources; while civic society partners have relational power, creating bridges between communities and other sectors to deliver outcomes equitably (Andrews & Entwistle, 2010). In a cross-sector partnership, the public sector functions as a ruler to create an orderly society and to solve such public issues as sustainability (Glasbergen, 2011). The private sector provides financial support while civil societies are responsible for bridging community and social connections (Glasbergen, 2011). Sometimes the civil society sector has the same role as the private sector, working as a financial supporter (Glasbergen, 2011).

2.2 Cross-Sector Social Partnerships and Sustainable Development

In *Our Common Future*, sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p. 43). There are three dimensions of sustainability: social, environmental, and economic. At the 1992 UN Conference on Environment and Development (UNCED), Agenda 21 was announced to guide worldwide organizations and governments to embody sustainable development and increase the awareness of the significant influences of sustainable development at global and local levels (ICELI, 2002). The Agenda is aimed at addressing and preparing for current challenges in world development and environment situations (ICELI, 2002). "It reflects a global consensus and political commitment at the highest level on development and environment cooperation." (United Nations Sustainable Development, 1992, p. 3). The Agenda calls for international, regional, and organizational cooperation as well as the participation and involvement of public, non-government, and other groups are encouraged (United Nations Sustainable Development, 1992). In response to calls made in Agenda 21, the United Nations (UN), government, businesses, and civil society made an alliance to address international sustainable change. In 2000, the Millennium Development Goals (MDGs) were announced to mobilize efforts to achieve worldwide sustainable development. In 2015, based on the success of the MDGs, the UN released the Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development, which provides a more detailed and comprehensive goals to lead the world towards sustainability. The SDGs cover a wide range of topics such as poverty, gender inequality, and climate action. In particular, Goal #11 on sustainable cities and communities builds on earlier efforts made through Local Agenda 21 and Goal 17 on partnerships. The goals represent the recommended approach to achieve all other goals through cross-sector and transnational collaborations (United Nations, 2015; Worley & Mirvis, 2013).

In Chapter 28, Agenda 21 points out the importance of local authorities to move sustainable development forward. It states, “Because so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities, the participation and co-operation of local authorities will be a determining factor in fulfilling its objectives” (United Nations Sustainable Development, 1992, p. 285). Furthermore, in 1996, the Habitat Agenda was released after the UN Conference on Human Settlements (Habitat II) provided further recognition of the importance and critical role of local governments toward sustainable development progress (Brugmann, 1996). More recently, New Urban Agenda has furthered this thinking.

As services providers and infrastructure builders, more than 10,000 initiatives have established and implemented “Local Agenda 21” to promote the implementation of UNCED’s Agenda 21 at the local level (Rok & Kuhn, 2012). Local Agenda 21 was designed to help local authorities approach and achieve their environmental practice goals and sustainable development strategies (Selman, 1998). This local sustainability cannot be achieved unless local authorities can balance social, political, and economic objectives (Selman, 1998). Developing and implementing a sustainable community plan is one of the processes within achieving a Local Agenda 21. Sustainable community plans include integrated community sustainability plans (ICSPs), long-range sustainability plans, local action plans like climate actions plans (Clarke, 2012).

In Canada, many sustainability initiatives and jurisdictions fall within local jurisdiction; a limited number of the initiatives are implementing the plan with a collaborative partnership (Clarke, 2014). Municipalities’ actions create a shared vision for future local sustainability and a move toward sustainability goals (Clarke, 2012). Yet it is hard for local authorities to solve sustainable development issues alone, partners and partnerships are needed (Biermann et al., 2007). Moreover, community-wide implementations extend the involvement of community partners and create a better understanding of the current

progress of local sustainable development (Clarke, 2012).

As the global promoter of Agenda 21, based on the specific needs of individual authorities, ICLEI -Local Governments for Sustainability is helping local authorities to create and launch their local sustainable development plans (ICLEI, 2002). In ICLEI's 2002 Local Agenda 21 survey, results showed that there is an increasing trend of local authorities taking action toward sustainable development (ICLEI, 2002). This involves and is supported by "local government associations, national governments, international institutions, community-based groups, non-governmental organizations and many other partners" (ICLEI, 2002, p.24). This multi-stakeholder engagement has positive impacts on a broad range of areas, including water issues, waste management, sustainable city designs, air quality, educating and increasing public awareness of sustainability issues, and energy conservation (ICLEI, 2002).

The complexities of both sustainable development and LA 21 implementations require a partnership among public, private, and civil society sectors. However, implementation challenges have limited the success and effectiveness of sustainable development plans (Clarke, 2014). For example, managers have limited experience and knowledge in addressing inter-organizational topics (Clarke, 2012). Therefore, essential collaborative leadership competencies are needed to move local sustainability forward in a practical, efficient, and equitable way.

Ecosystem management requires an adaptive and resilient approach to address temporality issues at local, regional, and national levels (Heuer, 2011). In general, adaptive governance and cross-sector partnerships are the best approaches to meeting both financial and ecological goals (Heuer, 2011). A cross-sector partnership among private sectors, public sectors, and civil society sectors "combines the unique capabilities and resources of each party to deliver outcomes surpassing those of any one sector acting in isolation" (Heuer, 2011, p.214).

2.3 Sustainability Plans

This section reviews the two main sustainability plans, integrated community sustainability plan and climate action plan in details.

2.3.1 Integrated Community Sustainability Plans

A sustainability community is a collaborative and integrated approach that requires a community use its resource to meet its current needs and provides a better quality of life for residences (FCM, 2009; Roseland, 2012). The Municipal Funding Agreement defined an Integrated Community Sustainability Plan (ICSP) as: "A long-term-plan, developed in consultation with community members that provides direction for the community to realize sustainability objectives, including environmental, cultural, social and economic objectives" (Association of Municipalities of Ontario, 2007, p. 1).

The Association of Municipalities of Ontario listed four principles that an ICSP has to meet the following criteria:

- "A co-ordinated approach to community sustainability
- Reflected and integrated social, cultural, environmental and economic sustainability objectives in community planning
- Collaborated with other Municipalities where appropriate to achieve sustainability objectives; and;
- Engaged residents in determining a long-term vision for the municipality."

(Association of Municipalities of Ontario, 2007, p. 1).

The ICSP principles can be implemented in various types of plans, such as a transit plan, capital investment plan, energy plan, waste management plan, etc. (Association of Municipalities of Ontario, 2007). To demonstrate the ICSP principles, municipalities need to establish how their existing municipal policies can create a sustainable municipality, and to explain how the capital investment plan can achieve the four pillars of

sustainability: economic, environmental, social, and cultural (Association of Municipalities of Ontario, 2007). The processes of the plan include stakeholder engagement, community vision development, plan development, and plan implementation and monitoring (Marbek Resource Consultants & Co-operative Research and Policy Services, 2009).

Unlike traditional municipal plans, ICSP requires municipalities to collaborate with communities through participatory techniques to improve and enlarge community stakeholder engagement (Marbek & CORPS, 2009). "CSP may be government-led and citizen-owned, or it may be citizen-led with governments serving as one participant" (Marbek & CORPS, 2009). Democratic participation increases public and community engagement and improves participative decision-making (Marbek & CORPS, 2009). High public participation and engagement generate a louder public voice, provide stronger goal empowerment, and have more stakeholder buy-in (Marbek & CORPS, 2009).

2.3.2 Climate Action Plans

The Partners for Climate Protection (PCP) program is the Canadian component of the Cities for Climate Protection (CCP) network. Launched in 1994 by ICLEI (Local Governments for Sustainability) and the Federation of Canadian Municipalities (FCM) (FCM & ICLEI, 2015), it involves more than 200 Canadian municipal governments that have committed to reducing GHGs (FCM & ICLEI, 2012). PCP membership is formed by communities of different sizes from all provinces and territories and accounts for 65% of the Canadian population (FCM & ICLEI, 2015). "Local governments influence up to half of Canada's GHG emissions through land use management and planning" (FCM & ICLEI, 2015, P. 4). As the longest-running local climate change program in Canada, from 1994 to 2014, PCP members have completed more than 800 GHG reduction projects and 1.8 million tonnes annual GHG reduction (FCM & ICLEI, 2015). Other than reducing

GHG emissions, PCP has also helped communities and municipalities increase cost savings and employment rate, stimulate local economic development, reduce traffic congestion, and improve local air quality (FCM & ICLEI, n.d.).

The PCP program includes two types of management and implementation plans, community-wide plans and corporate plans with the local governments (FCM & ICLEI, 2012). Corporate plans are directly controlled and implemented by local municipalities; and community-wide plans are implemented by the rest of the community members (FCM & ICLEI, 2012). Climate actions and policies are supported by provincial government actions and "developed and implemented across the PCP network" (FCM & ICLEI, 2015, p.6). Compared with corporate plans, most of the community plans are still in development and a few have entered the implementation stage (FCM & ICLEI, 2015). This is because the community has less policy power and are more dependent on existing provincial policy support (FCM & ICLEI, 2015).

PCP provides a five-milestone framework to guide local communities to take action on GHG emission reduction, and to provide a performance measurement tool for oversight (FCM & ICLEI, n.d.). Milestone One helps local communities and municipalities to create a GHG emissions inventory and forecast scenarios (FCM & ICLEI, n.d.). Inventory data include energy use, transportation practices, and waste-related methods (FCM & ICLEI, n.d.). Recorded data contain both community inventory and corporate inventory data. Community inventory includes "the institutional, commercial, industrial (ICI), transportation, and residential waste sectors" (FCM & ICLEI, n.d., p.6). Corporate inventory includes municipal government facilities and operations (FCM & ICLEI, n.d.). Milestone Two requires participants to set an emissions reduction target (FCM & ICLEI, n.d.). The reduction goal must be accepted by the local municipal council, and an achievable timeline needs to be set as well (FCM & ICLEI, n.d.). In Milestone Three, participants develop a local action plan which outlines how the participants/

municipalities will achieve their GHG emission reduction target set in Milestone Two (FCM & ICLEI, n.d.). Each plan needs to include a summary of emissions targets and forecasts, a set of existing reduction actions, implementation strategies, and involved stakeholders (FCM & ICLEI, n.d.). The implementation process starts at Milestone Four. In this stage, local municipalities or local communities can collaborate with non-government organizations and private sectors to put the plan into action (FCM & ICLEI, n.d.). To achieve long-term success, participants need to revisit their plans on a regular basis to make changes and refine the plan (FCM & ICLEI, n.d.). The last milestone is monitoring progress and reporting results. Monitoring and reporting are based on the actions in Milestone Three and Milestone Four to help participants determine whether reduction methods work effectively and whether the target will be met (FMC & ICLEI, n.d.).

2.4 Challenges in Cross-Sector Social Partnerships

Cross-sector social partnerships could generate various challenges during the collaborative process, such as unbalanced power and lack of shared goals. Leadership plays an essential role in the initial stage of building multi-stakeholder partnerships. The values of organizations and individual leaders are the primary motivators in the cross-sector partnership (Ritvala, Salmi, & Andersson, 2014). In a study on the transdisciplinary research process, Gray (2008) concluded that the lack of a common focus is a critical issue that can arise in transdisciplinary partnerships. Gray (2008) proposes that a lack of a common focus could be attributable to the fact that scientists generally work with the methodologies specific to their disciplines, making it hard to find a suitable and unanimous methodology to address the problem. Similar results were concluded by studies on multi-stakeholder partnerships that are focused on solving social problems (Ritvala et al., 2014). The outset of the partnership can facilitate or disrupt the partnership (Ansell & Gash, 2008). Leadership is essential in applying integrated

mechanisms to solve constraints and maintain the collaboration in partnerships (Ritvala et al., 2014). Ritvala and colleagues (2014) concluded that the more values the stakeholders share, the faster they will be able to identify a common goal for the partnership, potentially relieving tensions among them. Shared goals, missions, and problem definitions are among the initial drivers and conditions of the partnership, and each requires leadership actions before and during the partnership (Bryson, Crosby, & Stone, 2015).

Selsky and Parker (2005) identify trust as a critical factor in cross-sector partnerships. It is hard for sectors to create trust in their and others' legitimacy in the partnership (Selsky & Parker, 2005). Usually, there is a strong and negative impression of one another, and each sector may have different perceptions of trust (Selsky & Parker, 2005). For example, trust within the business sector is built on notions of risk reduction; for NGOs, trust is based on the social contract in the relationship (Heuer, 2011), the trust among stakeholders' can be built on prehistory experiences (Ansell & Gash, 2008).

Another challenge is the distribution of managing power among sectors (Selsky & Parker, 2005). Imbalanced power and resources can cause the failure of the partnership (Ansell & Gash, 2008). This imbalanced power includes the unequal "capacity, organization, status" to participate; or stakeholders participate in an unequal distribution with others (Ansell & Gash, 2008, p. 551). These conflicts can cause: disruption of the partnership commitment, duplicated responsibility, fragmented authority, inefficient use and sharing of information, and inconsistent policies among different levels of government (Ansell & Gash, 2008; Heuer, 2011). Without the balanced power of voice, the group's common objective does not a reflection of every participant's objective (Buanes, Jentoft, Karlsen, Maurstad, & Søreng, 2004). In some cases, the more effective organizations could not play the leading role in the partnership due to weaker resources or power (Ansell & Gash, 2008).

Gray (2008) deemed misunderstanding and disagreement among experts as being a common source of conflict. Bryson and colleagues (2015) stated that understanding the reasons for the partnership and the roles of the diverse sectors are important for a productive partnership among various sectors. Leadership is one of the essential factors that mitigate and resolve conflict in partnerships (Ospina & Foldy, 2010). Leaders and boundary spanners in the cross-sector social partnership are essential to managing unbalanced power, solving conflicts, identifying common goals, and recognizing the unique contributions of individual stakeholders (Ospina & Foldy, 2010; Saz-Carranza & Ospina, 2011).

Ritvala et al. (2014) brought up the idea of "bricolage", which requires leaders as having the ability to combine the limited resources to avoid failure of the partnership and to move the group toward the common goals. From a structural perspective, bricolage helps organizations and managers solve the challenges identified above. Bricolage guides "individuals and organizations to collaborate, innovate and improvise in harsh conditions" (Ritvala et al., 2014, p.949).

There are four cross-sector social partnership mechanisms for local corporate social responsibilities to integrate their local initiatives with environmental strategies: hierarchical, relational, cultural, and collaborative (Boehe & Cruz, 2010). In hierarchical mechanisms, based on the Global Reporting Initiative, managers follow the top-down objectives (Boehe & Cruz, 2010). Relational mechanisms take advantage of the relationship among employees to disseminate policies and practices (Boehe & Cruz, 2010). In cultural mechanisms, environmental responsibility is part of the company's culture and daily routines (Boehe & Cruz, 2010). Collaborative mechanisms involve the cooperation with stakeholders from other sectors, which can create collaborative advantages (Boehe & Cruz, 2010). Collaborative bricolage gathers multiple stakeholders who have different goals, interests, needs, and levels of involvement and high needs for

integration (Bechky & Okhuysen, 2011; Garud & Karnøe, 2003; Ritvala et al., 2014). They tend to use three integration mechanisms to overcome the scarcity of resources, disintegration inherent in the multi-stakeholder partnerships, including idealtional and social mechanisms, resource mechanisms, and organizational mechanisms (Ritvala et al., 2014). Ideational and social mechanisms keep the different sectors together by changing ingrained personal and organizational values (Ritvala et al., 2014). The more values that stakeholders share, the faster they can identify a common goal for their partnership (Ritvala & Salmi, 2010; Ritvala et al., 2014; Westley & Vredenburg, 1991). Resource mechanisms solve the problem of the fragmentation of resource sharing in the partnership (Ritvala et al., 2014). Acknowledging resource dependencies among stakeholders is one of the success factors in cross-sector social partnerships (Ritvala et al., 2014). Finally, organizational mechanisms include providing technical support, increasing flexibility, and expanding media visibility (Ritvala et al., 2014). These help to solve the challenges in the cross-sector social partnerships.

2.5 Leadership in Partnerships

Cross-sector leadership influences the culture and performance of the partnership (Baker & Kan, 2011). The following section explains a review of leadership in cross-sector social partnership and sustainability literature, including the meaning of leadership, leadership competencies in cross-sector social partnerships, and leadership competencies in sustainability.

The table below summarizes various definitions of leadership that are used in existing partnership related literature.

Table 1. *Leadership Definitions Used in Literature*

Author and Date	**Definition**
Huxam and Vangen, (2001)	**Leadership**: "A formal leader who either influences or transforms members of a group or organization-the followers- in order to achieve specified goals." (p. 1160) **Positional leaders:** "Participants acknowledged by others as having leadership legitimacy because of their positions in the partnership structure." (p. 1167)
Weber and Khademian, (2008)	**Collaborative capacity builder**: "Someone who either by legal authority, expertise valued in the network, reputation as an honest broker, or some combination of the three, has been accorded a lead role in the network's problem-solving exercise." (p. 340)
Emerson and Smutko, (2011)	**Collaborative leadership:** Requires the ability to exercise one's authority while being participatory; and to balance advocacy, given what is known, with the needed inquiry, given what is not known. **Facilitative leadership:** "Building cooperation and consensus among and within diverse groups, helping them identify common goals and act effectively to achieve them; recognizing interdependent relationships and multiple causes of community issues and anticipating the consequences of policy decisions." (ICMA, n.d., p. 10)
William, (2013)	**Boundary Spanners**: "The individual actors engaged in boundary spanning activities, processes and tasks. In this paper, boundary spanners are considered to be individuals who have a dedicated job role or responsibility to work in collaborative environments who co-ordinate facilitate and service the processes of collaboration between a diverse set of interests and agencies" (p. 18).

In the cross-sector social partnership literature, researchers use various terms to name "leadership", such as "positional leaders" (Huxam and Vangen, 2001), "collaborative capacity builder" (Weber and Khademian, 2008), "collaborative leadership" (Emerson and Smutko, 2011), and "boundary spanners" (William, 2013). The table above summarizes the definitions of leadership that are used in the literature. There seem to be two broad interpretations of leadership in partnerships. For example, Huxam and Vangen

(2001) and Weber and Khademian (2008), define leaders as the individuals who have authority or power above others, whereas Emerson and Smutko (2011) and William (2013) do not include "authority" or "power" in the definition of leadership in cross-sector social partnerships. These differences reflect the two types of leadership in management, transactional leadership, and transformational leadership.

Transactional leaders in the traditional leadership sense attract followers by rewarding on desired and expected behaviors or outcomes (Bass, 1985; Bryman et al., 1996). They manage by exception, which includes finding and punishing subordinates' errors (Bass, 1985). Transactional leaders perform as coordinators, monitors, and directors who focus on subordinates' performance to achieve organizational goals; they set the directions and goals, and direct subordinates to increase productivity and efficiency (Egri & Herman, 2000).

Transformational leaders "inspire others with their vision, promote this vision over the opposition, demonstrate confidence in themselves and their missions, and inspire others to support their mission" (Egri & Herman, 2000, p. 575). They attract and influence others, tend to collaborate and partner with others, and inspire group objectives and visions (Bryman, 1992; Conger, 1990; Egri & Herman, 2000). They develop long-standing objectives and views, are open to new options and ideas, and create excitement (Egri & Herman, 2000). Transformational leaders are more explicit and relevant to understanding managerial leadership in ecological, sustainable-related organizations (Egri & Herman, 2000; Gladwin, 1993; Portugal & Yukl, 1994).

In some cases, leaders are performing both transformational and transactional leadership behaviors in environment-related organizations (Egri & Herman, 2000). A transformative leader mediates the unbalanced power among stakeholders and helps the group to explore potential gains from the partnership (Ansell & Gash, 2008). In non-profit environmental organizations, leaders are more likely to perform as transformational leaders than those

who work in for-profit environmental organizations (Egri & Herman, 2000).

2.5.1 Leadership Competencies for Cross-Sector Social Partnership

Spencer and Spencer (1993) use the iceberg model to compare and contrast the differences between competencies and skills.

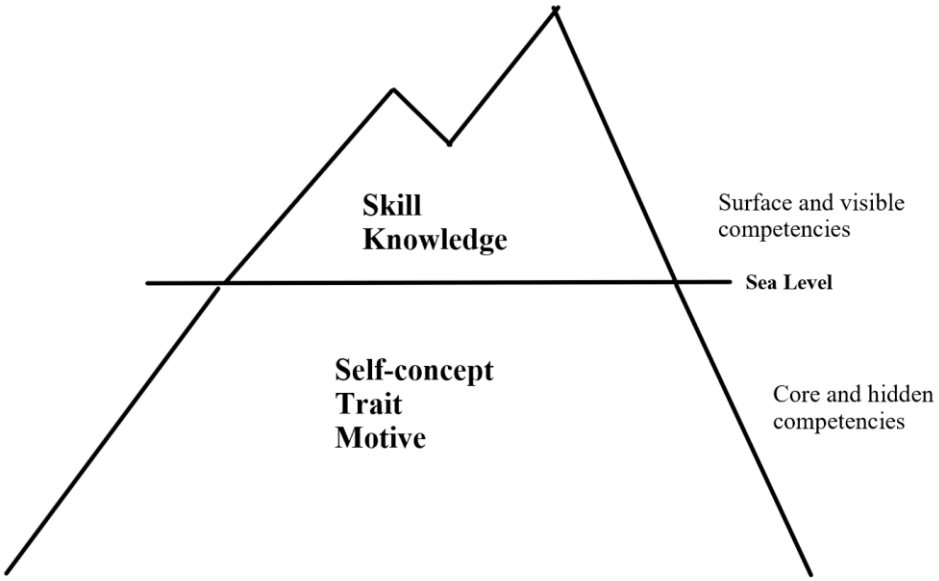

Figure 1. The Iceberg Model of Managerial Competencies

The iceberg model of managerial competencies above shows the relationship between an individual's skills and knowledge (Hay Group, 2003; Spencer & Spencer, 1993). Skills and knowledge at the top of the iceberg can be trained during a person's career paths (Hay Group, 2003; Spencer & Spencer, 1993). The competencies below sea level are hard to train and are essential to working performance (Hay Group, 2003; Spencer & Spencer, 1993). Also, these deeply rooted traits are hard to identify (Hay Group, 2003; Spencer & Spencer, 1993). According to the model, skills and knowledge are the easiest parts to change; motive is the hardest part (Maurer, Wrenn, Pierce, Tross, & Collins, 2003). Competencies under sea level are directly related to the above skills and knowledge (Cort & Sammons, 1980). McDonald and Stadtler (2017, p. 45) conclude that skills define "the 'what' of specific learned activities" and competencies define " 'how' the learned activities are performed". In this study, the term competency includes both soft skills and hard skills.

The success of the cross-sector social partnership lies with the participants in the partnership and how they apply their collaborative competencies to help the group solve complex problems (Williams, 2002). Leadership is a critical element in the effectiveness and capacity of a partnership (Bryson et al., 2006; Emerson & Smutko, 2011). Bardach (1998) and Poxton (1999) also concluded that the success of CSSPs mainly depends on the creativity and efforts of participants. The table below summarizes the collaborative leadership competencies identified in existing cross-sector social partnership literature.

Table 2. *Leadership Competencies in Cross-Sector Social Partnership Literature*

Cross-Sector Competencies	**Authors**
Collaborative awareness	(Crosby & Bryson, 2005; Emerson & Smutko, 2011; Williams, 2002)
Communication	(Bingham et al., 2008; Emerson & Smutko, 2011; Crosby & Bryson, 2005; Williams, 2002; Linden, 2010)
Conflict resolution	(Bingham et al., 2008; Emerson & Smutko, 2011; Morse, 2008; Williams, 2002)
Facilitation	(Bingham et al., 2008; Carlson, 2007; Crosby & Bryson, 2005; Emerson & Smutko, 2011; Huxam & Vangen, 2000; Morse, 2008)
Negotiation	(Bingham et al., 2008; Crosby & Bryson, 2005; Emerson & Smutko, 2011; Morse, 2008; Williams, 2002)
Strategic thinking	(Crosby & Bryson, 2005; Emerson & Smutko, 2011; Luke, 1998; Morse, 2008)

2.5.2 Communication

Communication plays a critical role in the success of cross-sector social partnerships, which require leaders having the ability to listen actively and community accurately.

A necessary part of the cross-sector social partnership is interacting with various participants in the partnership (Williams, 2002). Effective communication "aligns and

coordinates members' action, builds mutual understanding and trust and fosters creative problem solving and commitment" in collaborative partnerships (Crosby & Bryson, 2005, p.190). From this perspective, communication is one of the essential factors in collaborative partnerships.

Williams (2002) stated that communication is a two-way process which requires both active listening competencies and effective presenting competencies. Emerson and Smutko (2011) concluded that active listening is a critical factor required for effective communication in a partnership. Active listening shows a willingness to understand and accept the views of other stakeholders (Williams, 2002). Bingham, Sandfort, and O'Lecry (2008) identified three competencies for active listening, such as the ability to paraphrase others' talk and ideas, to ask open-ended questions, and to make statements in the first person. Active listening helps leaders to understand others' perspectives (Linden, 2010).

The second component of effective communication is the ability to clearly present ideas. To do so, Williams (2002) stated that leaders need to explain and interpret their professional language to ensure the group's precise shared meaning and understanding. Causing mapping is a way to present ideas and explain circumstances clearly (Byson et al., 2004) The ability to "persuade in a constructive way that takes everyone's interest" is the requirement to effectively present and share leaders' ideas with others (Emerson & Smutko, 2011, p.13.). This also requires the openness to exchange information and respect different ideas (Kouzes & Posner, 2002). In UNCG's framework, Emerson and Smutko (2011) identified another two competencies for effective communication in multi-stakeholder partnerships. These two competencies are the ability to communicate in different modes and media to people with different backgrounds and cross-cultural communication competencies. Leaders need to have the ability to effectively present their ideas to people with different backgrounds, respect their culture, and avoid biases during communication (Emerson & Smutko, 2011). Creativity is needed to recognize these

cultural differences and symbols (Bingham et al., 2008).

Effective communication is not only necessary to create a successful cross-sector social partnership, but also can help the partnership be more efficient at combining various resources to achieve shared goals (Bingham et al., 2008).

2.5.3 Facilitation

In cross-sector social partnerships, leaders are not only acting as participants, but also serve as facilitators in helping the group move forward (Morse, 2008).

At the beginning stage of a partnership, as facilitators, leaders need to understand group dynamics and psychology to better understand what to expect in the partnership, how to solve dysfunctional partnerships, and how to help groups build meaningful collaborative partnerships (Emerson & Smutko, 2011). Specifically, leaders need to have the ability to manage and control the collaborative agenda which includes the activities of a partnership (Huxham & Vangen, 2000). This also includes guiding people to focus on particular questions or problems which they think are important or emerging, developing facilitative processes like workshops to enable all members to have the ability to access the agenda, and opening up the content of the agenda to new ideas and new mindsets (Huxham & Vangen, 2000). As facilitators, leaders have the responsibility to design appropriate forums and develop ground rules to make sure the activities can move forward (Carlson, 2007).

The next stage is facilitating group members to deliberate and make decisions (Emerson & Smutko, 2011). Working in the role of facilitator, leaders need to help the group on multiple strategies (Morse, 2008). This includes supporting group engagement in brainstorming to generate ideas (Bingham et al., 2008; Morse, 2008), move group discussions forward (Emerson & Smutko, 2011; Morse, 2008), and learn how to solve

problems (Bingham et al., 2008). In addition, as facilitators recording individuals' ideas, leaders need to use their active listening competencies as well to catch and reflect different views and ideas that emerge during discussions (Bingham et al., 2008; Ury, 1991). They also need to have the ability to create an inclusive environment in which participants can participate and engage with each other (Carlson, 2007; Crosby & Bryson, 2005).

The last stage is participating in teams effectively (Emerson & Smutko, 2011). Leaders must have personal, participatory competencies, such as realizing others' strengths and weaknesses, to create a flexible space when interacting with the group (Emerson & Smutko, 2011).

2.5.4 Negotiation

The next competency identified by experts as essential to an effective partnership is negotiation (Binghman et al., 2008). In multi-stakeholder partnerships, leaders negotiate everything involved in the process, such as decision rules, outcomes for each step, distribution of power, implementation process, etc. (Binghman et al., 2008). Having strong negotiation competencies help leaders identify the balance between the advantages/benefits and the disadvantages of the interests and goals for themselves and others (Williams, 2002). Negotiation analysis helps leaders identify the interests or basic needs and determine the optimal situation which would bring maximum benefits to individual stakeholders and the partnership (Bingham et al., 2008). In other words, negotiation competencies allow leaders to "trade the things of value that they control for other's support and developing advantageous position" (Crosby & Bryson, 2005, p.194). To achieve this, leaders need to recognize and use different knowledge to find ways of processing and reconciling differences (Bingham et al., 2008). Emerson and Smutko (2011) concluded that interest-based negotiation is the most effective type of negotiation in collaborative partnerships. Interest-based negotiation was identified by Fisher and Ury

(1991), and is an approach used for achieving common goals and reducing overall losses. Therefore, leaders in cross-sector social partnerships need to know how to use interest-based negotiation competencies to maximize gains and minimize losses (Emerson & Smutko, 2011). Leaders who are skilled in negotiation know how to choose appropriate bargaining competencies for obtaining the best alternatives to a negotiated agreement (Bingham et al., 2008). During the negotiation process, leaders can use meetings, progress reports, conferences, and so on, to gain their desires (Crosby & Bryson, 2005). Leaders need to understand and remember that every step is open for negotiation (Bingham et al., 2008).

2.5.5 Conflict Resolution

Networks involve inter-organizational and interpersonal connection that have multiple parties and multiple issues. In this complexed partnership, there is an unbalance in power and resources which can cause both political and public conflicts (Binghman, 2008). This unbalance requires leaders be familiar with basic methods of conflict management in collaborative partnership and have an awareness of the requirements of participation and engagement (Emerson & Smutko, 2011). Ground rules and specific decision rules need to be created by leaders to guide group behavior and to avoid unnecessary conflicts (Emerson & Smutko, 2011). Leaders need to have the ability to resolve conflicts and disagreement within the group through understanding and empathizing with each other; this is important for creating a harmonious collaborative relationship (Williams, 2002). By contrast, leaders also need to have the ability to mediate and shape conflict among stakeholders and build sustainable coalitions, hence accelerating the development of salient ideas and solutions (Crosby & Bryson, 2005). Similar ideas were concluded by Emerson and Smutko (2011) in that leaders need to have the ability to manage, anticipate, and transform conflicts to allow new ideas and opportunities to arise in the coalitions.

Specifically, Bingham et al. (2008) provided a list of guiding principles for leaders on to

manage conflicts. This includes redefining conflicts as mutual problems to be solved by everyone in the partnership (Moore, 2003), educating one another to have a better understanding of the issues, developing a conflict management plan, maintaining transparency, etc.

2.5.6 Strategic Thinking

Strategic thinking is identified as one of the critical competencies in collaborative partnerships (Crosby & Bryson, 2005; Emerson & Smutko, 2011; Morse, 2008). Leaders need this competency to analyse stakeholders (Crosby & Bryson, 2005; Morse, 2008), develop group vision (Crosby & Bryson, 2005), frame common issues (Crosby & Bryson, 2005; Luke, 1998; Morse, 2008), evaluate and set group benchmarks (Emerson & Smutko, 2011), and integrate and interpret new information (Emerson & Smutko, 2011).

Crosby and Bryson (2005) concluded that leaders need to use strategic thinking to do stakeholder analysis. At the initial stage of a partnership, leaders need to identify key stakeholders (Crosby & Bryson, 2005; Morse, 2008). Key stakeholders are stakeholders who can make changes or have the needed resources to make changes (Crosby & Bryson, 2005; Morse, 2008). Stakeholders' motivations are identified at the same time; this includes their expectations and interests about the partnership (Crosby & Bryson, 2005). Strategic thinking helps leaders to identify each partner's needs and connect them together to form a shared mission and vision (Crosby & Bryson, 2005). At the early stage of a partnership, strategic thinking is used to reframe the issue to attract people's attention (Crosby & Bryson, 2005; Luke, 1998; Morse, 2008). Luke (1998) also concluded that leaders could use their strategic thinking ability to identify the desired outcomes and understand the interconnections and strategic points at this early stage.

Emerson and Smutko (2011) stated that leaders could use strategic thinking competencies

to assess and interpret the contexts of the partnership and to analyse and evaluate the decisions. Strategic thinking and analytical thinking are useful for leaders to assess the current situation and issues they are facing and to understand the political, legal, and regulatory context of the partnership (Emerson & Smutko, 2011). This competency also can be applied at the decision-making stage. Leaders need to employ strategic thinking to identify any underlying technical and scientific information which could be critical to the decision-making (Emerson & Smutko, 2011). Moreover, It is important that leaders know how to use strategic thinking to understand and evaluate various methods, to measure potential objectives, outcomes, and successes of the partnership, and to design an effective process to solve issues the group may be facing (Emerson & Smutko, 2011). This helps leaders to recognize useful strategies and the best conditions for the partnership (Emerson & Smutko, 2011).

2.5.7 Collaborative Awareness

Leaders need to be familiar with and be ready to collaborate in the multi-stakeholder partnership (Crosby & Bryson, 2005; Emerson & Smutko, 2011; Williams, 2002).

Williams (2002) believed leaders need to be ready to partner and work with others. This requires leaders to have "respect, honesty, openness, tolerance, approachability, reliability, sensitivity, etc." (Williams, 2002, p. 116). Crosby and Bryson (2005) had a similar result in that leaders need to be ready for such challenging work, noting that leaders in a collaborative partnership need to have "integrity; a sense of humour; awareness of one's preferred ways of learning and interacting with people; a sense of self-efficacy and courage; cognitive, emotional and behavioral complexity; etc." (Crosby & Bryson, 2005, p.189).

Leaders in a cross-sector social partnership need to be familiar with and understand organizational leadership (Crosby & Bryson, 2005). In organizational leadership, leaders

always pay attention to shared goals and interests, adopt internal and external changes quickly, and have the ability to build an inclusive community (Crosby & Bryson, 2005). Collaborative partnerships require leaders have the ability to clarify their roles in the relationship (Emerson & Smutko, 2011). Leaders need to understand and be clear with their leadership roles to avoid infringing on others' authority (Emerson & Smutko, 2011). At the same time, managers need to understand the "decision space", which is the range of participants' willingness to discuss and negotiate (Emerson & Smutko, 2011, p.9).

2.6 Leadership for Sustainability

"Corporate transformation to ecological sustainability requires a new form of ecocentric management and leadership" (Shrivastava, 1994, p.224). Environmental leadership is defined as "the ability of an individual or group to guide positive change toward a vision of an environmentally better future" (Berry & Gordon, 1993, p. 3). It is guided by an ecocentric belief system that believes human-nature relationships are independent with "physical, socioeconomic, and spiritual realms" (Egri, 1997; Egri & Herman, 2000, p. 572). Environmental leaders are identified as master managers by Egri and Herman (2000), who frequently performed both transactional and transformational leadership roles. This is a complex mission that requires leaders to perform and balance such diverse roles (Egri & Herman, 2000).

Leaders working in environmental sectors have different competencies from those working in other sectors (Egri & Herman, 2000). There is little empirical research on sustainable leadership. Most of the research focuses on evaluation and monitoring, paying little attention to how leaders implement and create sustainability strategies (Crews, 2010). The table below shows leadership competencies that are identified in existing literature.

The table below summarizes leadership competencies that have been identified by experts in the field.

Table 3. *Leadership Competencies Identified in Sustainability Literature*

Competencies	**Authors**
Communication	(Crews, 2010; Egri & Herman, 2000; Hind et al., 2009; Quinn & Dalton, 2009)
Stakeholder engagement	(Crews, 2010; Egri & Herman, 2000; ECO Canada, 2010; Gloet, 2006; Hind et al., 2009; Lacy et al., 2009; Quinn & Dalton, 2009; Shaw, 2002)
Strategic thinking	(Ashridge Business School, 2008; Crews, 2010; Egri & Herman, 2000; Gloet, 2006; Peters & Gitsham, 2009; Quinn & Dalton, 2009; Visser & Courtice, 2011)
Self-value	(Egri & Herman, 2000; Visser & Courtice, 2011)
System thinking	(Hind et al., 2009; Peters & Gitsham, 2009; Visser & Courtice, 2011)

2.6.1 Creating the Culture (communication)

Environmental leadership is the mediator of the establishment of ecocentric values in organizational development (Egri & Herman, 2000). Communication on sustainability needs to take place regularly at all levels of the company and in their day-to-day interactions (Quinn & Dalton, 2009). The ability to maintain an effective sufficient dialogue helps leaders exchange ideas, decisions, and motivations effectively (Hind et al., 2009).

Sustainability initiatives need to be understood and accepted by the entire company and without any confusion (Crews, 2010). This requires that leaders have the ability to incorporate sustainability into their company's mission, vision, core values, etc. ; and to clearly present the meaning and benefits of sustainability to their employees, stakeholders, vendors, etc. (Crews, 2010). For example, leaders can incorporate their company's "commitments into the core values" with sustainability approach to minimize

the confusion of the intent (Crews, 2010, p.17). Also, leaders need to know how to increase the organizational capability to learn and develop a learning environment at all levels of the company for buy-in (Crews, 2010).

Choosing the right words to frame and deliver the message is a way to inspire and motivate people to adopt sustainability initiatives in a company (Quinn & Dalton, 2009). First, using positive words and examples allows others to see the possibilities and opportunities of sustainability (Quinn & Dalton, 2009). Next is the proper use of business vernacular to show the connections between sustainability and the financial factors (Quinn & Dalton, 2009). Lastly, encouraging employees by telling them that sustainability work is meaningful and that it has a positive impact on all lives and on the lives future generations (Quinn & Dalton, 2009).

2.6.2 Stakeholder Engagement

Leadership engagement on sustainability can be thought of as "mutually supporting gains" (Crews, 2010, p.16) in that this long-term relationship benefits both organizations and communities in their intent on sustainability and responsibility (Quinn & Dalton, 2009). Stakeholder engagement can also be considered an opportunity affecting other stakeholders with an eye on sustainability (Quinn & Dalton, 2009). The ability to identify all key stakeholders, to engage stakeholders, and to understand how their decisions will affect others is necessary(Lacy et al., 2009). Leaders need to consider everyone's interests (ECO Canada, 2010). At the same time, integrating stakeholders' interests and needs without any trade-off requires leaders to engage every stakeholder in conversation (Crews, 2010).

Differences in competencies among people enhance the potential for identifying and understanding an organization's challenges (Shaw, 2002). Leaders need to respect and appreciate diversity at both the individual and organizational level (Hind et al., 2009).

This complexity can be solved by acknowledging the differences, building bridges across groups, and recognizing common goals (Hind et al., 2009). Affiliation is needed and more important in smaller environmental organizations (Egri & Herman, 2000). This requires that leaders have flexibility and adaptability (Gloet, 2006). Namely, leaders need to be flexible to new ideas and changes, to learn quickly from past mistakes, to have holistic thinking as well as understanding the interconnection and impacts of others' decisions (Ashridge Business School, 2008).

Building relationships and maintaining them is critical to organizations. Leaders need to have the capacity to broaden networks, including partners from "the value chain and the ecological chain" such as organizations, consumers, and suppliers (Gloet, 2006, p.409).

2.6.3 Strategic Thinking

Leaders are required to know how to create strategic solutions by using sustainable concepts, such the "triple bottom line", as a principle or standard to lead and guide the company to maintain sustainability (Quinn & Dalton, 2009). An effective leader is a strategist who "know(s) the way, show(s) the way, and go(es) the way" (Crews, 2010, p.18). Strategic thinking helps leaders identify possible solutions and alternatives and make optimal decisions in challenging situations and dilemmas (Visser & Courtice, 2011).

In environment industries, ecocentric processes and ecological sustainability are the primary considerations in the organizational decision-making process (Egri & Herman, 2000). In the early stages, the ability to analyze, synthesize, and translate the complex issues is required to set the benchmarks (Gloet, 2006; Visser & Courtice, 2011). Then leaders need to find a way to minimize production costs while balancing the environmental and social impacts of their products and leading the company toward success (Crews, 2010). They need to introduce social and environmental trends into their

decision-making and to foresee other sectors' reaction, including capital-expenditure decision, brand development, scenario building, etc. (Ashridge Business School, 2008; Peters & Gitsham, 2009).

2.6.4 Sustainability Values

Environmental leaders tend to be more self-transcendent and more change-orientated than those who work outside environment industries (Egri & Herman, 2000). Leaders in non-profit and for-profit organizations in environmental-related industries are more ecocentric than leaders in other industries (Egri & Herman, 2000). Egri and Herman (2000) found that for-profit environmental leaders are more service-oriented and less ecocentric than non-profit environmental leaders. However, leaders in for-profit environmental organizations are more ecocentric and less service-oriented than those working in other industries (Egri & Herman, 2000). Leaders in environment industries are morally-driven, they care about the well-being of humans, animals, and the natural world (Visser & Courtice, 2011).

Leaders in sustainability are open to challenges and changes. Being open-minded allows such leaders to seek new ideas, knowledge, information, and options (Visser & Courtice, 2011). Because leaders are the visionaries who bring inspiration, creativity, and courage to their role (Visser & Courtice, 2011), it requires them to balance both the passion and idealism of the organization (Visser & Courtice, 2011).

2.6.5 System Thinking

The complexity of sustainability requires leaders to think about and understand the bigger picture, and to appreciate the interdependent relationships among organizations and between the business world and society (Hind et al., 2009; Visser & Courtice, 2011). Leaders need to recognize they are not working within a closed system; therefore,

understanding the dynamics of organizational, cultural, environmental, economic, and social relations is essential to succeeding in this new open system (Hind et al., 2009). In addition, a changing business context requires leaders to recognize the risks and opportunities of sustainable development trends (Peters & Gitsham, 2009; Visser & Courtice, 2011), necessitating their seeing the interrelations across a bigger picture at the broadest level (Hind et al., 2009).

2.7 Leadership Competencies Summary

To date, there is limited literature on how multinational corporation managers use local corporate social responsibility strategies to solve regional issues (Dahan, Doh, Oezel, & Yaziji, 2010; Husted & Allen, 2006; Ritvala et al., 2014; Rodriguez, Siegel, Hillman, & Eden, 2006). In sections 3.2 and 3.3, the researcher provides various key leadership competencies for managing cross-sector social partnerships and for implementing sustainability plans. This section summarizes and compares the key competencies identified above.

The table below summarizes the key competencies that are identified in each area:

Table 4. *Key Leadership Competencies for the Management of Cross-Sector Social Partnerships and for the Implementation of Sustainability Plans*

Competencies	**Cross-sector social partnership management**	**Sustainability plans implementation**
Communication	(Bingham et al., 2008; Emerson & Smutko, 2011; Crosby & Bryson, 2005; Williams, 2002; Linden, 2010)	(Crews, 2010; Egri & Herman, 2000; Hind et al., 2009; Quinn & Dalton, 2009)
Conflict resolution	(Bingham et al., 2008; Emerson & Smutko, 2011; Morse, 2008; Williams, 2002)	N/A
Stakeholder engagement/ Collaborative awareness	(Crosby & Bryson, 2005; Emerson & Smutko, 2011; Williams, 2002)	(Crews, 2010; Egri & Herman, 2000; ECO Canada, 2010; Gloet, 2006; Hind et al., 2009;

		Lacy et al., 2009; Quinn & Dalton, 2009; Shaw, 2002)
Facilitation	(Bingham et al., 2008; Carlson, 2007; Crosby & Bryson, 2005; Emerson & Smutko, 2011; Huxam & Vangen, 2000; Morse, 2008)	N/A
Strategic thinking	(Crosby & Bryson, 2005; Emerson & Smutko, 2011; Luke, 1998; Morse, 2008)	(Ashridge Business School, 2008; Crews, 2010; Egri & Herman, 2000; Gloet, 2006; Peters & Gitsham, 2009; Quinn & Dalton, 2009; Visser & Courtice, 2011)
Negotiation	(Bingham et al., 2008; Crosby & Bryson, 2005; Emerson & Smutko, 2011; Morse, 2008; Williams, 2002)	N/A
Sustainability value	N/A	(Egri & Herman, 2000; Visser & Courtice, 2011)
System thinking	N/A	(Hind et al., 2009; Peters & Gitsham, 2009; Visser & Courtice, 2011)

Note: N/A = Not available

As the table shows, communication, stakeholder engagement, and strategic thinking competencies are essential in both cross-sector social partnership literature and sustainability-related literature. In cross-sector social partnership management, facilitation, negotiation, and conflict management competencies are also essential. In the implementation of sustainability plans, the awareness of sustainability is important to leaders as they need to see the bigger picture.

2.8 Literature Conclusion

Through reviewing the literature, it was found that leadership competencies have a significant influence on managing multi-stakeholder partnerships and on implementing local sustainability-related plans. Competencies are social motives, and superficial behaviors which are deepened into individual's internal abilities (Hay Group, 2003; Spencer & Spencer, 1993). Different from skills and knowledge that can be gained by training or practice, competencies are hard to change and observe (Hay Group, 2003). One of the best ways to study competencies is through the behavioral event interview (Getha-Taylor, 2008; McClelland, 1998; Spencer & Spencer, 1993). Multi-stakeholder partnership related literature provides a comprehensive review of major competencies that are critical to outstanding leaders. However, there are few studies on leadership competencies in the field of sustainability; therefore, such a gap in the literature can be addressed through further studies on sustainability-related leadership competencies.

Chapter 3: Methods

The research aims to identify the leadership competencies for managing and implementing sustainability plans with and without a multi-stakeholder partnership. The behavioral event interview (BEI), a semi-structured interview, was applied to identify these competencies. The second part of the study used the independent sample t-test to identify whether there is a significant difference between multi-stakeholder partnership practitioners and corporate practitioners on the identified competencies.

3.1 Research Design

The strategy of exploration employed for identifying the essential leadership competencies for managing the implementation of community sustainability plans in Canada takes a qualitative research approach. The Behavioral Event Interview (BEI), one of the most effective methods for assessing managerial competencies (Boyatzis,1982; Dreyfus, 2008; Getha-Taylor, 2008; Marrelli, Tondora, & Hoge, 2005; Spencer & Spencer, 1993), was used in the study.

The BEI method helps researchers identify critical competencies that separate outstanding managers from average managers through semi-structured interviews with open-ended questions (Dreyfus, 2008; Getha-Taylor, 2008; McClelland, 1998). Interviewees are required to describe what they did, thought, said, and felt in successful and challenging situations (Marrelli et al., 2005; McClelland, 1998). The content of these descriptions presents individuals' actual behaviors in their jobs, which provides information about how the interviewees use their competencies to solve critical problems (Getha-Taylor, 2008; McClelland, 1998; Vathanophas, 2007).

The specific and detailed descriptions of effective and ineffective behaviors provide an in-depth perspective of managerial competencies that are needed for effective and

successful management (Marrelli et al., 2005). A survey is one option for data collection. It provides data from a large population in a short period, but it only provides data to the questions asked (Hay Group, 2003). Thus, a survey provides limited information and usually misses the hidden information that is important or critical to the performances (Hay Group, 2003). Compared with the survey, the BEI method not only provides the types of competencies, but also provides detailed information on the contexts in which these competencies have emerged (Hay Group, 2003). This valuable information can be used as a guide by those who want to focus on self-improvement, and by human resources managers who want to hire the most qualified employees for their companies (Hay Group, 2003). For these reasons, the BEI method was chosen as the data collection method in this study.

The BEI method is generally used for identifying and differentiating leadership competencies between outstanding performers and average performers (Boyatzis, 1982; Dreyfus, 2008; Getha-Taylor, 2008; Marrelli et al., 2005; Mcclelland, 1998; Spencer & Spencer, 1993; Vathanophas, 2007). Getha-Taylor (2008) used this method to identify the different competencies that separate the two groups in the U.S. Office of Personnel Management. However, this study aims to identify the essential leadership competencies of multi-stakeholder partnership practitioners and corporate practitioners in the implementations of community sustainability plans. Community sustainability plans can be implemented by the single municipality, or by collaborations among private, public, and civil society sectors, organizations; therefore, managers who work in collaborative partnerships and managers who work without partnerships will be interviewed by using the BEI method.

Sustainability managers were separated into two groups, the sustainability managers who manage the community sustainability plans with multi-stakeholder partnerships and the sustainability managers who manage the plans without a multi-stakeholder partnership.

The independent sample t-test, a statistical test that "is used when there are two experimental conditions and different participants were assigned to each condition" (Field, 2013, p. 75), was chosen to identify if there is a significant difference between the two groups of sustainability managers.

3.2 Interviewee Selection

Two types of community sustainability plans, Climate Action Plans and Integrated Community Sustainability Plans, were the main focus of this study. These two types of plans are the foremost local sustainable development plans in Canada that can be implemented by multi-stakeholder collaborations or by a single sector (ICELI, 2002). Community sustainability plans can be separated into two types, community-wide plan and corporate level plan, based on GHG emission sources and activity sectors (ICLEI & FCM, n.d.).

Table 5. *Criteria for Interviewee Identification*

Interviewee Criteria
1. The interviewee must be willing and able to take the interview.
2. The interviewee must be one of the major leaders/major managers of the plan implementations.
3. The interview must be conducted in English.

Interviewees were identified based on the criteria identified in Table 5to obtain valid details of interviewees' behavior during the implementation process. First, interviewees' willingness to share their personal experiences with the researcher had to be confirmed before taking the interview (Criterion 1). Next, because this study focuses on leadership/ managerial competencies, interviewees must be involved in the implementation of a community sustainability plan as one of the major decision-makers or major managers (Criterion 2). The researcher is limited to conducting the study in English. Hence,

interviews must be conducted in English (Criterion 3).

The table below lists the criteria that were used to identify the community sustainability plans that were suitable for the study. The first three criteria were applied to all community sustainability plans, and the special criteria were applied to certain types of plans (i.e., community sustainability plans that were implemented with multi-stakeholder partnerships and plans that were implemented without a multi-stakeholder partnership).

Table 6. *Criteria for Sustainability Plan Identification*

Community Sustainability Plan Criteria	
General plan criteria	
1. The aim of the project must be the implementation of a sustainability plan (e.g., Climate Action Plan and Integrated Community Sustainability Plan) at the local level.	
2. The plan is implemented in a Canadian community/municipality.	
3. The project must have been implemented in the most recent year.	
4. Climate Action Plans that were implemented by PCP (Partner for Climate Protection) program members must have to achieve Milestone 4 or Milestone 5 of the five- milestone framework which was created by FCM (Federation of Municipalities) & ICLEI Canada.	
5. Plans, other than Climate Action Plans, have to have updated and published annual reports to show the implementation and monitoring progress of the plans.	
Special plan criteria	
The plan was implemented with a multi-stakeholder partnership	The plan was implemented without a multi-stakeholder partnership
6. Managed by an inter-organizational collaboration.	Managed by a singer sector (Public sector or private sector or civil society).
7. Collaboration happens among public, private, and civil society sectors.	There is no collaboration between or among different sectors in the process.
8. More than one stakeholder from each sector joined the process.	One or more stakeholders from a single sector are is involved in the process.

Criterion 1 is based on the context of this study, identifying the leadership competencies for implementing community sustainability plans. As demonstrated before, the Climate Action Plan and the Integrated Community Sustainability Plan are the two foremost and widespread community sustainability plans in Canada. Community energy plans were excluded from this study because community energy plans can be embedded in community sustainability plans (Green Communities Committee & Fraser Basin Council, n.d.). Criteria 4 and 5 are on the progress of the implementations of community sustainability plans. According to the explanations of the Milestone framework, implementation starts from Milestone 4: implementing the local action plan or a set of activities. Moreover, the plan is in the final stage when it achieves Milestone 5: implementing the local action plan or a set of activities (FCM &ICLEI, 2015). Since the study is trying to be centred around successful community sustainability plans' implementations, plans under the PCP program must achieve Milestone 4 or 5 (Criterion 4). Criterion 5 is for the plans that are not under the PCP program, the updated and published annual report shows the implementation is at the implementation stage (similar to Milestone 4) and/or at the monitoring stage (similar to Milestone 5).

Criterion 2 sets the geographical limitation of where the research is focusing on; the plans must be implemented in Canada. Criterion 3 relates to the time of plan implementation. This study focuses on the most recent plans.

The two groups of interviewees were separated based on the types of the plans they managed. Special plan criteria 6 to 8 are used to differentiate the types of plans they managed, as well as differentiating the interviewees. Criterion 6 separated the contexts of the plans' implementation process. A collaborative partnership means there is an inter-organizational collaboration among three sectors: the public sector, the private sector, and civil society sector; the other group encompasses plans implemented by only one sector (7), typically the local government. This study focuses on multi-stakeholder

collaboration, which means that there is more than one stakeholder coming from each sector who is involved in the plan implementation with a multi-stakeholder partnership (Criterion 8).

3.3 Data Collection

Data collection for this study, using the BEI method, included in-person or personal telephone/Skype interviews with the sustainability managers who were selected. According to Spencer and Spencer (1993), at least 20 individuals should be interviewed. Overall, 80 recruitment letters were sent out and 26 sustainability managers agreed to participate in the study. Ultimately, 12 multi-stakeholder partnership practitioners were interviewed; and 14 corporate practitioners were interviewed. Each interviewee was required to describe two situations: one successful case and one fail/difficult situation that happened during the implementation of their community sustainability plans.

The interviewees/sustainability managers were separated into two groups based on the types of plans they were implementing. Interviewees/ sustainability managers who manage the implementation of a community-wide plan were assigned to the multi-stakeholder partnership practitioners group; and interviewees who managed the corporate level plan without a multi-stakeholder partnership were assigned the corporate practitioners group. Under each group, interviewees/sustainability practitioners managed either the climate action plans or the integrated community sustainability plans. The group allocation is shown below:

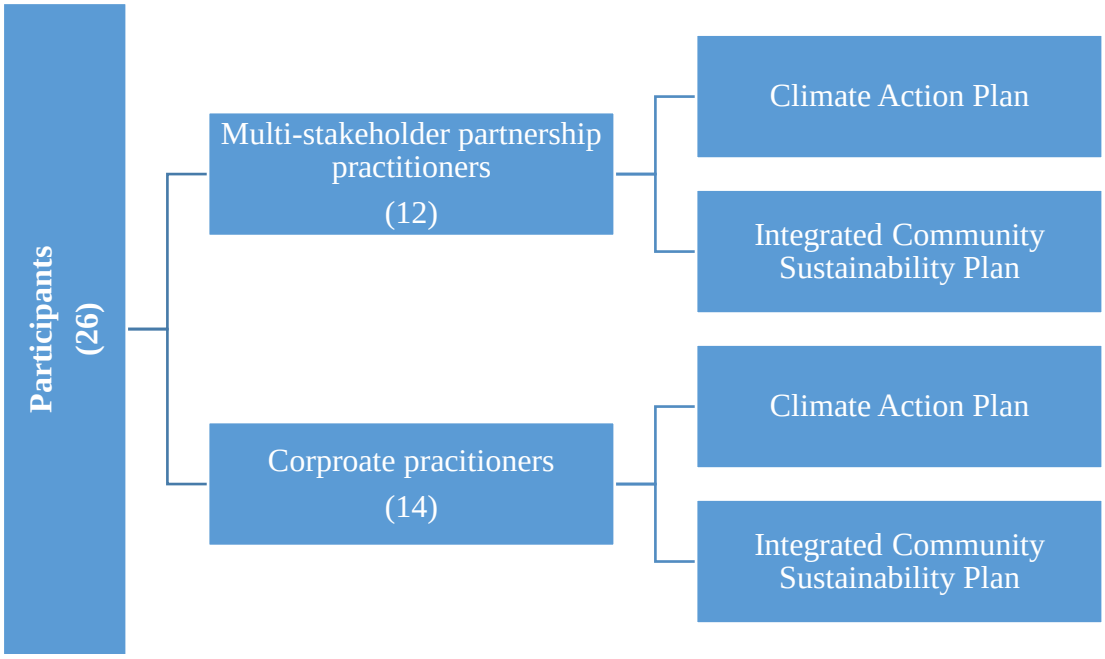

Figure 2. Interviewee Groups

Data collection took place from October 2017 to January 2018; and interviews were taken from November 2017 to January 2018.

Data Collection Procedures:

1. Obtained ethical clearance from the Office of Research Ethics at the University of Waterloo (see Appendix A).
2. Researched possible community sustainability plans and interviewees by gathering the necessary information to narrow down plans and interviewees against criteria through online searching.
3. Interviews with each sustainability manager were used to collect data by:

    a. Recruitment Letter (Appendix B) sent to prospective sustainability managers via e-mail and Dr. Clarke's LinkedIn account.
    b. An information letter and a consent form (Appendix C) and interview questions (Appendix D and Appendix E) were emailed to sustainability

managers who had agreed to participate in the study.

c. Interviews were conducted with sustainability managers via telephone or Skype (duration of 45 minutes or more). All interviews were audio recorded.
d. Confidentiality statement (Appendix F) was emailed to the professional transcriber. Recorded interviews were transcribed.
e. A feedback letter was sent to each interviewee (Appendix G).

Below are the interviewees who contributed to this study:

Lists of interviewees:

Interviewees	Types of practitioners	Interviewee positions	City*
Interviewee #1	Partnership practitioner	Sustainable Manager	Medium-sized city in Ontario
Interviewee #2	Corporate practitioner	Sustainability Officer	Small-sized city in Prince Edward Island
Interviewee #3	Corporate practitioner	Assistant Director	Medium-sized city in New Brunswick
Interviewee #4	Partnership practitioner	Director of Environmental, Fleet, & Waste Management	Large-sized city in Ontario
Interviewee #5	Corporate practitioner	Manager of Climate Change Office	Large-sized city in Ontario
Interviewee #6	Partnership practitioner	Manager of Air Quality	Large-sized city in Ontario
Interviewee #7	Partnership practitioner	CAO	Small-sized village in Alberta
Interviewee #8	Corporate practitioner	Education & Community Initiatives Specialist of the Waste & Recycling Service	Medium-sized city in Alberta
Interviewee #9	Partnership practitioner	Manager of Air Quality	Large-sized city in Ontario
Interviewee #10	Partnership practitioner	Manager of Sustainability	Large-sized city in British Columbia

Interviewee #11	Partnership practitioner	Director of Planning and Economic Development	Large-sized county in Ontario
Interviewee #12	Corporate practitioner	Energy and Environment Manager	Large-sized city in Nova Scotia
Interviewee #13	Corporate practitioner	Sustainability Planner	Small-sized town in Nova Scotia
Interviewee #14	Corporate practitioner	Director of Environmental and Corporate Initiatives	Large-sized city in Saskatchewan
Interviewee #15	Corporate practitioner	CAO	Small-sized town in British Columbia
Interviewee #16	Partnership practitioner	Senior Manager of Sustainability and District Energy	Large-sized city in British Columbia
Interviewee #17	Partnership Practitioner	Project Manager	Large-sized city in Ontario
Interviewee #18	Partnership practitioner	Water Treatment Manager	Medium-sized regional municipality in Alberta
Interviewee #19	Corporate practitioner	Manager of Transit and Sustainability	Medium-sized regional district in British Columbia
Interviewee #20	Partnership practitioner	City of Burlington	Large-sized city in Ontario
Interviewee #21	Corporate practitioner	Energy Management Coordinator	Medium-sized city in Ontario
Interviewee #22	Partnership practitioner	City Strategic Director	Large-sized city in Alberta
Interviewee #23	Corporate practitioner	Manager of Strategic Initiatives and Sustainability	Medium-sized city in British Columbia
Interviewee #24	Partnership practitioner	Environmental Sustainability Coordinator	Large-sized town in Ontario
Interviewee #25	Corporate practitioner	Energy and Climate Action Manager	Medium-sized city in British Columbia
Interviewee #26	Corporate practitioner	Sustainable Energy Coordinator	Large-sized town in Ontario

*Small-sized population center: with a population of 1,000 – 29,999; medium-sized population center: with a population of 30,000 – 99,999; large-sized population center:

with a population of 100,000 or more (Statistic Canada, 2016).

3.4 Data Analysis

Data analysis contains two parts, coding and statistical analysis. The first part of the study identifies the essential leadership competencies for managing a multi-stakeholder partnership in the process of the implementation of sustainable development plans. The second part of the study identifies whether there is any difference in essential managerial/ leadership competencies for managing the implementations of community sustainability plans between multi-stakeholder partnership practitioners and corporate practitioners.

3.4.1 Coding

The first step of data analysis was coding the interview transcripts to identify the different competencies that were demonstrated by interviewees. There were two concepts included in the coding stage, identifying the competencies and competencies creation (Spencer & Spencer, 1993). This process was done by deductive coding and inductive coding. Nvivo 12 was used to do the coding in the study.

In this study, based on the Scaled Competency Dictionary published by Spencer and Spencer, and used to identify, recognize, and code the appearances of the competencies in the interview transcripts (Dainty, Asce, Cheng, & Moore, 2005; Dreyfus, 2008; Getha-Taylor, 2008; Vathanophas, 2007). In the Scaled Competency Dictionary, Spencer and Spencer (1993) identify and describe nine competencies clusters based on their previous studies. This allows the researcher to identify shared competencies among interviewees (Getha-Taylor, 2008). Competencies were coded every time they appeared, and the appearance of each was calculated (Spencer & Spencer, 1993).

The table below provides a preliminary list of competencies that were used in the deductive coding stage. The competencies were identified based on the knowledge

obtained from the literature review, and then mapped to Spencer & Spencer's list.

Table 7. *Preliminary List of Leadership Competencies*

Competency clusters	**Competencies**	**Collaboration & Leadership Literature**	**Sustainability Literature**
Communication	Active listening	(Bingham et al., 2008; Emerson & Smutko, 2011; Linden, 2010; Williams, 2002; Spencer & Spencer, 1993)	
	Audience adaptation	(Byson et al., 2004; Emerson & Smutko, 2011)	
	Knowledge translation	(Williams, 2002)	(Crews, 2010; Egri & Herman, 2000; Hind et al., 2009; Quinn & Dalton, 2009)
	Interpersonal communicatio n	(Byson et al., 2004; Emerson & Smutko, 2011; Williams, 2002; Spencer & Spencer, 1993)	(Crews, 2010; Egri & Herman, 2000; Hind et al., 2009; Quinn & Dalton, 2009)
Project management	Time management	(Huxham & Vangen, 2000)	
Individual attributes	Emotional intelligence	(Spencer & Spencer, 1993)	
	Empathy	(Spencer & Spencer, 1993)	
	Flexibility and adaptability	(Spencer & Spencer, 1993)	
	Open-mindedness	(Emerson & Smutko, 2011; Spencer & Spencer, 1993)	
	Persistence	(Spencer & Spencer, 1993)	
Knowledge management	Information seeking	(Spencer & Spencer, 1993)	
	Information integration	(Spencer & Spencer, 1993)	

	Professional knowledge of subject areas	(Spencer & Spencer, 1993)	
Problem-solving	Analytical thinking	(Spencer & Spencer, 1993)	
	Critical thinking	(Spencer & Spencer, 1993)	
	Strategic thinking	(Bingham et al., 2008; Crosby & Bryson, 2005; Emerson & Smutko, 2011; Luke, 1998; Morse, 2008; Spencer & Spencer, 1993)	(Ashridge Business School, 2008; Crews, 2010; Egri & Herman, 2000; Gloet, 2006; Peters & Gitsham, 2009; Quinn & Dalton, 2009; Visser & Courtice, 2011)
	System thinking		(Hind et al., 2009; Peters & Gitsham, 2009; Visser & Courtice, 2011)
	Visionary thinking		(Hind et al., 2009; Peters & Gitsham, 2009; Visser & Courtice, 2011)
Teamwork and cooperation	Cross-sector collaboration	(Crosby & Bryson, 2005; Emerson & Smutko, 2011; Williams, 2002)	
	Inside sector collaboration	(Spencer & Spencer, 1993)	
	Information sharing	(Crosby & Bryson, 2005; Emerson & Smutko, 2011; Williams, 2002)	
	Joint decision-making and consensus building	(Crosby & Bryson, 2005; Emerson & Smutko, 2011; Williams, 2002)	
	Conflict resolution	(Bingham et al., 2008; Crosby & Bryson, 2005; Emerson & Smutko, 2011; Moore, 2003; Williams, 2002)	
	Facilitation	(Bingham et al., 2008; Carlson, 2007; Emerson	

		& Smutko, 2011; Huxham & Vangen, 2000; Morse, 2008)	
	Inclusive perception on achievement	(Spencer & Spencer, 1993)	
Team leadership	Team managing	(Spencer & Spencer, 1993)	
	Boundary spanning	(Crosby & Bryson, 2005; Emerson & Smutko, 2011; Williams, 2002)	
Engagement and relationship management	Relationship building	(Spencer & Spencer, 1993)	(Crews, 2010; Egri & Herman, 2000; ECO Canada, 2010; Gloet, 2006; Hind et al., 2009; Lacy et al., 2009; Quinn & Dalton, 2009; Shaw, 2002)
	Trust building		(Crews, 2010; Egri & Herman, 2000; ECO Canada, 2010; Gloet, 2006; Hind et al., 2009; Lacy et al., 2009; Quinn & Dalton, 2009; Shaw, 2002)
	Citizen outreach		(Crews, 2010; Egri & Herman, 2000; ECO Canada, 2010; Gloet, 2006; Hind et al., 2009; Lacy et al., 2009; Quinn & Dalton, 2009; Shaw, 2002)
	External stakeholder engagement	(Crosby & Bryson, 2005; Emerson & Smutko, 2011; Williams, 2002)	(Crews, 2010; Egri & Herman, 2000; ECO Canada, 2010; Gloet, 2006; Hind et al., 2009; Lacy et al., 2009; Quinn & Dalton, 2009; Shaw, 2002)
Impact and influence	Impact and influence	(Spencer & Spencer, 1993)	

Note: N/A = Not available

As the table above shows, the first competency on the preliminary list is initiative. Initiative is an individual's willingness to take action, such as finding new opportunities and improving abilities to solve problems in the workplace (Spencer & Spencer, 1993). Literature on both collaborative competencies and sustainability competencies state that practitioners need to have motivations to collaborate with others to solve issues (Crews, 2010; Crosby & Bryson, 2005; Egri & Herman, 2000; Morse, 2008; Visser & Courtice, 2011). The next competency, the ability to seek information, requires practitioners attempt to get more information, to seek new information, and to do extensive research (Spencer & Spencer, 1993), as managers need to be curious about new information in the field of sustainability (Crews, 2010; Egri & Herman, 2000; Hind et al., 2009; Quinn & Dalton, 2009; Visser & Courtice, 2011). Interpersonal understanding concerns individuals' desire to understand other people's thoughts, feelings, and concerns (Spencer & Spencer, 1993), including the desire to understand and respect cultural diversity (Spencer & Spencer, 1993). In collaboration-related literature, researchers identify successful managers as those who are willing to listen to others' ideas, are open to others' opinions, and respect other cultures (Bingham et al., 2008; Byson et al., 2004; Emerson & Smutko, 2011; Hind et al., 2009; Quinn & Dalton, 2009; Shaw, 2002; Williams, 2002). Impact and influence imply a desire to persuade and convince others to get support or to affect others (Spencer & Spencer, 1993). In sustainability, managers want to persuade others to take action on sustainability and make changes (Visser & Courtice, 2011). Individuals need to have the awareness to collaborate, to have the ability to identify potential stakeholders, and to have the ability to build a team (Crosby & Bryson, 2005; Emerson & Smutko, 2011; Gloet, 2006; Lacy et al., 2009; Spencer & Spencer, 1993; Williams, 2002). Team leadership implies an intention to play the lead role in a group or team, including helping the group to meet group goals, promoting group productivity, and finding a balance among all members (Spencer & Spencer, 1993). Analytical thinking is the ability to understand and analyze an issue or a problem (Spencer & Spencer, 1993). It

is important for managers to identify and analyze problems that the group is facing and to find the best solutions (Ashridge Business School, 2008; Crosby & Bryson, 2005; Egri & Herman, 2000; Emerson & Smutko, 2011; Gloet, 2006; Morse, 2008; Peters & Gitsham, 2009; Quinn & Dalton, 2009; Visser & Courtice, 2011). Conceptual thinking is the ability to understand the connections among situations, to see the big picture, and to identify the key factors in complex situations (Spencer & Spencer, 1993). The nature of sustainability requires managers to plan long-term and have the ability to see the big picture (Hind et al., 2009; Peters & Gitsham, 2009; Visser & Courtice, 2011).

The second part of the coding process uses inductive coding to identify competencies that emerged in the study. After coding the competencies that were identified by Spencer and Spencer, the rest of the competencies are inductively coded by the researcher. This inductive coding aims to produce a detailed and categorized record of the themes and issues that emerged during the interview process (Burnard, 1991). A rigorous reading, studying, and coding of the transcript allow for the emergence of major themes/ competencies (Thomas, 2006). To increase accuracy of the coding, the transcripts were read several times to identify competencies that emerged during the interviews (Jain & Ogden, 1999).

3.4.2 Statistical Analysis

The second part of this study is aimed at identifying whether there is any significant difference in competencies between multi-stakeholder partnership practitioners and corporate practitioners in the implementation of the sustainability plans. The independent sample t-test was used to answer this question.

The first step of the statistical analysis uses binary coding in the SPSS 25 Software to code the appearance of competencies for all the interviewees. The number “1” is used to indicate interviewees having the competencies; the number “0” is used to indicate

interviewees not having the competencies. The coded data was applied to the independent sample t-test for further analysis.

An independent sample t-test is commonly used to identify any significant difference between groups' different participants who are assigned to two conditions (Field, 2013). Therefore, an independent t-test is suitable for this study in which 26 interviewees were separated into two groups: multi-stakeholder partnership practitioners who manage and implement their sustainability plans with multi-stakeholder partnerships; and corporate practitioners who manage and implement their plans without a multi-stakeholder partnership. If the p-value is less than 0.05 (with a 95% confidence interval), there is a statistically significant difference between the two groups. If the p-value is greater than 0.05, there is no statistically significant difference between the two groups.

However, a non-significant result indicates the effect is not big enough to make a difference between samples, but it does not mean that there is no effect or that the effect is zero (Field, 2013). For example, the sample size could affect the results of the significant differences. A large sample size, for example, could expand the small and unimportant effects and produce a statistically significant result (Field, 2013). Similarly, a small sample size could hide the large and important effects and produce an insignificant result (Field, 2013). Hence, the effect size of each independent sample t-test was calculated to remedy such problems as "a way of quantifying the size of the difference between two groups" (Coe, 2002, p. 1). The Cohen's d was used to calculate the effect size. It is "an effect size that expressed the difference between two means in standard deviation units" (Field, 2013, p. 75). The Cohen's d was calculated by using:

$$\hat{d} = \frac{\overline{X_1} + \overline{X_2}}{\delta}$$

(Field, 2013, p. 75)

Cohen (1988) suggested that the effect size can be separated into three levels based on the value of the Cohen's d: small (d = 0.2); medium (d = 0.5); and large (d = 0.8) (Appendix H). In this study, the Cohen's d was interpreted in terms of the percentage of multi-stakeholder partnership practitioners (experimental group) above the corporate practitioners (control group).

Both the qualitative and statistical results are presented in the Results chapter (Chapter 4) and are discussed and interpreted in the Discussion chapter (Chapter 5).

3.5 Limitations

There are some biases from the criteria. By choosing participants from climate action plans and integrated community sustainability plans, those who work on other types of projects are not examined. By choosing projects that have achieved Milestone 4 and 5 and implementing their projects, those who work on the projects that have not achieved Milestone 4 but implement their projects, and those who work on projects but are not members of the PCP program, are not examined. Having these criteria limits the initial pool of practitioners and managers selected.

Also, there are limitations caused by the chosen method. A major limitation of the behavior event interview is the relatively small sample size (Boyatzis & Ratti, 2009; Marrelli et al., 2005). Due to the time constraints and workload of the interviews and transcriptions, the number of participants in the study was limited. However, the interview method provides deeper and broader data than do other methods (Hay Group, 2003).

The next limitation is the potential that the measurement and identification of competencies are inadequate, either through the interview itself or through poor coding definitions (McClelland, 1987). The BEI gathers interviewers' opinions of the

performance, not the “measurements of the actual performance” (McClelland, 1998, p. 333). The descriptions reflect past performances rather than future performances (McClelland, 1998). The researcher must be unbiased in coding the transcripts and developing reliable and valid codes (McClelland, 1987).

Any one competency is not suitable or applicable in all situations (McClelland, 1998). Even for the same type of work, the organizational environment can significantly affect individual behavior (McClelland, 1998). Competencies within some categories can be substituted with each other, which increases the generalization of the research (McClelland, 1998). However, as the other managers are also working in collaborative partnerships and working to implement sustainable development plans, it may be possible to have similar collaborative and managerial competencies.

3.6 Reliability and Validity

Reliability- Reliability is about the repeatability of the research (Golafshani, 2003). To ensure the reliability of the study, the researcher has recorded the research in detail. Conway et al. (1995) stated that standardization of questions increases the reliability of the interview and research. The researcher chose to use semi-structured interviews in this study to increase the repeatability and reliability of the research. Fully structured interview questions with one-to-one interviews have the highest reliability (Conway et al., 1995). The interviews were conducted by the researcher. The researcher used the same evaluation and rating standards in the coding and analyzing processes. This provides a higher degree of reliability than other forms interviews (Conway et al., 1995). The fully structured job-relevant sample can help interviewers improve their rating by avoiding information-processing errors (Dipboye & Gauler, 1993).

The independent sample t-test results and the calculation of effect size aim to identify both statistically and practical differences between the two groups, increasing the

reliability of the research.

Validity- The validity or trustworthiness of the qualitative research concerns generalizability of the research (Golafshani, 2003). Care was taken to ensure the generalization of the chosen method. Two types of sustainability plans were involved. Also, two types of implementation processes were included to ensure the generalizability of the data.

The semi-structured interview is the best choice whereby the researcher will not "get more than one chance to interview someone" (Bernard, 2006, p. 212). The interview guide increases the validity and comparability of the data (Bernard, 2006). It provides a more consistent sample of interviewees' performances and provides a more consistent result among multiple interviews (Dipboye & Gaugler, 1993). Also, the interview data provide a better and more valid result, because it elicits interviewees' spontaneous behavior in certain situations rather than relying on their preset answers (McClelland, 1987; Spencer & Spencer, 1993).

Chapter 4: Results

4.1 Introduction of Results

This chapter presents the results from interviews with 26 sustainability managers in Canada. This research focuses on the leadership competencies that drive sustainability managers in their management and implementation of community sustainability plans. Competencies are learned behaviors in the workplace related to the success of the job performance (i.e., soft skills), and skills are traits that can be trained and learned in the workplace (i.e., hard skills) (Boyatzis, 1982). In this study, the term "competency/competencies" was used to describe both soft and hard skills. This chapter begins with the competencies the researcher has identified during the coding process. Each competency includes a detailed description and is supported by representative quotations from the interviews. Representative quotations include one quotation on community-wide plan implementation, followed by one quotation on corporate plan implementation.

A summary of each sustainability manager's competencies is presented in the tables. The two tables indicate whether a competency was discussed by the sustainability practitioners as well as the frequency counts of the competency appearances that were displayed by and discussed by these practitioners.

As mentioned in the methods chapter, an independent t-test was used to compare the appearances of the main competencies and to identify whether there was a significant difference between the two groups, sustainability practitioners of community-level plans and sustainability managers of corporate-level plans; the results are presented at the end of this chapter.

4.2 Main Competencies – Qualitative Approach

Overall, there were nine main competency clusters and forty-nine competencies identified through the coding process. At the deductive coding stage, eight competency clusters and competencies were identified based on Spencer and Spencer's (1993) work, including relationship building, information seeking, impact and influencing, teamwork and cooperation, analytical thinking, and team leadership. The remaining competency clusters and competencies were identified during the inductive coding process. Table 8 shows the summary of all competency clusters and corresponded competencies identified in the research.

Table 8. *Summary Table of Main Competencies Identified in the Study*

Competency Clusters	*Competencies*
Communication	Active listening
	Audience Adaptation
	Knowledge translation
	Knowledge mobilization
	Interpersonal communication
Project management	Partnership management
	Financial knowledge and fundraising
	Political knowledge
	Project identification and development
	Project coordination and implementation
	Report preparation
	Human resources management
	Time management
Individual attributes	Emotional intelligence
	Empathy
	Humility
	Flexibility and adaptability
	Open-mindedness
	Self-reflection
	Persistence
Knowledge management	Information seeking
	Information integration
	Consultation

	Professional knowledge of the subject area
Problem-solving	Analytic thinking
	Critical thinking
	Design thinking
	Strategic thinking
	System thinking
	Visionary thinking
Teamwork and cooperation	Cross-sector collaboration
	Inside sector collaboration
	Consensus building
	Information sharing
	Joint decision-making and consensus building
	Conflict resolution
	Facilitation
	Inclusive perception of achievement
Team leadership	Team managing
	Boundary spanning
	Leadership sharing
	Coaching and providing guidance
Engagement and relationship management	Trust building
	Relationship building
	Citizen outreach
	External stakeholder engagement
	Internal stakeholder engagement
Impact and influence	Impact and influence

The following sections provide a detailed explanation of each competency, including a description of the competency, and representative quotations from both groups of sustainability managers.

4.2.1 Communication Cluster

Communication was identified as one of the main competencies for managing and implementing climate action plans and integrated community sustainable plans with and without multi-stakeholder partnerships. The purpose of effective communications is to establish shared meaning among diverse actors (Boyatzi, 1982). This research found that

the communication cluster is comprised of five competencies, specifically: 1) active listening, 2) audience adaptation, 3) knowledge mobilization, 4) knowledge translation, and 5) interpersonal communication. Table 9 includes the communication competencies that were identified by the study, descriptions of each competency, and supportive quotations from interviews.

Table 9. *Descriptions and Representative Quotations of Communication Cluster*

Competencies	*Description*	*Representative Quotations*	
		Multi-stakeholder partnership practitioners	*Corporate practitioners*
Active listening	Ability to ask the right questions and understand the meaning of the words spoken	*"Being a good listener, you know? Like being a good listener helps to build rapport, so that you are – and asking lots of questions, right? So, you are finding out about what they offer, and you just have a good dialogue. But I think people often aren't very good at listening and asking questions."*	*"And [listening to community members] is always a great one in that you know often you will have people that will come into you and say; you should be doing this, you should be doing that. And, there's just not the capacity to do every single thing that comes forward."*
Audience adaptation	Ability to adjust the content of talks and presentations, based on audiences' needs and interests	*"... is basically being able to pull [financial factors and financial outcomes] out of the project, out of the meeting I had with the stakeholders, and then boil it down to a concentrated message. So rather than having a message that they are only getting a small 15-20% out of the messaging that they are actually looking for, I could just give*	*"... is being able to communicate with politicians and simplify the message, so they can understand and understand the benefit. And, also simplify with your organization what the message is, what the outcomes need to be and what the role of each level of government is, and what the role of the*

		them the full part of the message they are looking for and leave the rest out unless they wanted actually to go into it."	*employee is and what the [role of the] community is."*
Knowledge translation	Ability to translate technical information into a common language	*"We make use of, you know, infographics to try to take technical information to make it easy to understand."*	*"Make sure that every employee understands what our environmental strategy is; how it applies to them, and how they are expected to apply it in their work."*
Knowledge mobilization	Ability to have a strategic plan to deliver the right information at the right time, through the right method, to the right audiences	*"We need to know how to communicate [the project], how to spin it positively."*	*"We just had a frank conversation that we need you to go out, and we need you to talk to people, and here's what you need to say. And we gave them material to work with, so we gave them a presentation, and we gave them notes, and we gave them things that they could hand out to their staff, and that did help."*
Interpersonal communication	Ability to communicate and interact with people in different ways, including dialogue, social media, public events, *etc*.; ability to resolve and handle difficult conversations	*"I guess partly just because of my experience knowing how to talk to the people, making sure that there were certain stakeholders that were well aware of the meetings, and would attend."*	*"I do some of the media interviews and enquiries and things like that, and then I report to the counsellors, you know, through the formal venue."*

4.2.2 Project Management Cluster

Both climate action plans and integrated community sustainability plans are implemented through different projects. Thus, project management competencies are essential for sustainability managers because leaders are required to be able to manage partnerships, deal with financial issues, deal with political issues, identify and develop projects, coordinate and implement projects, prepare reports, manage time, and do general project management work. This research found that the project management cluster is comprised of eight competencies, including: 1) partnership management, 2) financial management and fundraising, 3) political knowledge, 4) project identification and development, 5) project coordination and implementation, 6) report preparation, 7) Human resources management, and 8) time management. The detailed descriptions of these competencies are listed in Table 10.

Table 10. *Descriptions and Representative Quotations of Project Management Cluster*

Competencies	*Description*	*Representative quotations*	
		Multi-stakeholder partnership practitioner	*Corporate practitioner*
Partnership management	Ability to manage partnerships which are involved in project implementations	*"And we have been working hard to maintain a good relationship with the partner, and that is going well, and we have had great successes such that we are able to now consider the expansion of our utility."*	
Financial knowledge and fundraising	Ability to search for funding; ability to prepare grant application; ability to manage a budget	*"I tried to find funding, and I am still trying to find funding, for example, to continue it next year. So, I champion it within the city and try to find other funding partners from*	*"I am looking at the bills and making sure it is being rectified, our utility bills, to make we are actually getting these kinds of savings month-to-month, every month;*

		within the city, and get them to support the initiative."	*and just tracking the progress of the project."*
Political knowledge	Ability to understand the political perspectives and be able to deal with political issues	*"And then a big part of what I do is just managing political issues."*	*"I think you need to generate political support for a plan like this, so that it is not just the municipal government that's supporting it."*
Project identification and development	Ability to identify project opportunities and develop different projects to achieve the plan's scope	*"What we have looked at is identifying either the low-hanging fruit or project that we really want to go."*	*"It is really under my direction that we developed a whole new program and both to do the program research, but also to develop the new engagement."*
Project coordination and implementation	Ability to coordinate a project to make sure the project is fully and successfully implemented	*"Probably a big chunk of [project management] was just making sure that people did not get hung up in certain areas and kept everything moving forward."*	*"Project management and coordination are pretty essential to what I do, and that is just being able to pull off projects that work."*
Report preparation	Ability to write up report to effectively inform different audiences, including council, community, or upper-level governments	"… writing reports and memos to our management so that they are aware of what we are doing and the directions we are taking."	*"We're just reporting now to … We have a standing committee of council called the environment and sustainability standing committee and we're doing a program update to them where we kind of let them know how the programs have been running since it launched 18 months ago, and what's been working well, and what we're*

			going to do to improve on some of the issues and stuff like that."
Human resources management	Ability to ensure projects are implemented, including hiring contractors, assigning work to staff, overseeing project progress, etc.	*"I worked with the regulatory side, worked with the project. The project manager reported to me, that was doing the technical work for that."*	*"And making sure that [contractors] are doing the job they needed to do and that the equipment they put is in the right stuff, and you are happy with the job that they have done."*
Time management	Ability to set the timeline and finish projects in the timeframe	*"Ensure we were meeting deadlines when it came to things like reporting to funders and completing certain tasks in time to be approved by whoever needed to approve them."*	*"I was more proactive than reactive, right? I would not let [contractors] go too long being behind schedule."*

4.2.3 Individual Attributes Cluster

The plans are implemented by a team of people; therefore, individual attributes are required in the sustainability field, and are essential for sustainability managers. This research found that individual attributes are comprised of: 1) emotional intelligence, 2) empathy, 3) humility, 4) flexibility and adaptability, 5) open-mindedness, 6) self-reflection, and 7) persistence. Interpersonal competencies help individuals be able to communicate with other people more effectively, be able to work with other people, and be able to have desired outcomes. The detailed explanations are presented in the table below:

Table 11. *Descriptions and Representative Quotations of Individual Attributes Cluster*

Competencies	*Description*	*Representative quotations*	
		Multi-stakeholder partnership practitioners	*Corporate practitioners*
Emotional intelligence	Ability to notice and understand personal and others' emotions; ability to manage personal emotions and manage relationship with others.	*"You can't be seen as intimidating. You can't be seen as pointing the finger and saying this is the way we're going. It's pretty much common sense, but I still see planners that have been around as long as I have, who haven't learned those lessons."*	*"I try to work with everyone that I do work with in a respectful way. At least I'm always trying to do better."*
Empathy	Ability to stand in other's shoes to understand their needs.	*"And I think there's a fine balance too in that you want [stakeholders] involved, but you recognize that they've got other things to do as well. Everyone's got their own time constraints and resourcing issues."*	*"I think it is really important to be able to put yourself in everybody else's shoes, especially if you can anticipate when you're going into maybe, you know, a contentious meeting or something, or you are really trying to make a case for something if you can kind of anticipate maybe what their preconceived notions might be, what their leaning might be on the subject you know"*
Humility	Ability to realize and understand self-limitations and drawbacks	*"... have a good understanding that you may not be able to achieve everything. You're not able to save the environment in one day, so you need to have the ability to kind of start slow and build upon what you want to do."*	*"I think one thing I did was that I was very careful to recognize the limits of my own knowledge. And, to make sure that I didn't presume to know more than I really do, or to be qualified to speak on topics on which I'm not*

			formally trained."
Flexibility and adaptability	Ability to change and adapt to various situations	*"I guess, my experience, I can kind of float in between a lot of different areas. I could go to a technical meeting with engineers and have a discussion and go sit down and have an equally successful discussion, you know, with a group of financial folks from the province."*	*"One, you have to be willing to do everything, [from] the dirtiest job to the best job. And you have to be willing to pitch in at any level."*
Open-mindedness	Ability to be open to new ideas, new information, and new opportunities	*"… what are the things you keep an eye on that's out there and evolving and developing that might have implications to our work, whether it's positive or negative. And, what opportunities are coming out of that and so forth."*	*"I would add one other one that, I think … that having a positive attitude and kind of a willingness to try to innovate and do something new and interesting is very important because inherent sustainability is doing things differently than what we've ever done before. And, I think that if you don't tackle that with some innovation and some positivity, then we're never actually going to change how we behave and how we organise ourselves."*
Self-reflection	Ability to do introspection on their behaviour and actions; be able to learn from past experiences	*"We essentially are never satisfied with the work that is done. So, every time we finish an event, whether it was a great one or an average one or not that great … we look at, and we basically reflect on it and say how it will be better the*	*"I learnt some things and I kind of think now from where I sit as manager of the group that I think it could have been better."*

		next time. So, we are driven by continuous improvement, so there is never ever been a high point. We just have events as we talked about, and our model and our philosophy is not to grab a high and the next ones be a low. It's the next one always to be that much better."	
Persistence	Ability to be persistent; never give up; be patient	"So, I just had to keep plugging away. Again, because of my experience, I think, I wasn't totally surprised there would be a negative reaction. So, I think if it was a younger player here, they may have left to give up. Because it wasn't – it was a rough ride for a while. But again, I – as I did with the ICSP, I continue to go out and talk to the township councils."	"When it doesn't go your way, you've got to keep trying to make it happen; trying different tactics or keep trying the same tactic, but you know, just keep at it."

4.2.4 Knowledge Management Cluster

Sustainability managers need to have sufficient knowledge to work in this field, and this knowledge can be gained through different ways, including seeking information and professional training. At the same time, managers need to know how to integrate this knowledge. This research found that the knowledge management cluster is comprised of: 1) information seeking, 2) information integration, 3) consultation, and 4) professional knowledge of subjective areas. Table 12 contains detailed information and representative quotations for each competency.

Table 12. *Descriptions and Representative Quotations of Knowledge Management Cluster*

Competencies	*Description*	*Representative quotations*	
		Multi-stakeholder partnership practitioners	*Corporate practitioners*
Information seeking	Ability to, and willing to, search for new information in the field	*"I mean, the coaching and the opportunity to learn from other professionals was very important. And, it really helped me, again, understand best practices that are actually happening right now in the industry."*	*"keeping sort of an eye on what's going on, not just within the city and not just within the province, the country and even North America, but what's going on globally and some of those big trends."*
Information integration	Effectively integrate new information with own knowledge	*"Having enough understanding of [sustainability-related] areas. And, maybe the connectivity between some of this and that is quite useful and a key attribute."*	*"And you're trying to fit, you know, [the funding] process in with your own organization's procedures and realities."*
Consultation	Ability to effectively consult with experts and people from all sectors to gain new knowledge, to understand essential factors of the plan, and to solve problems, etc.	*"... [stakeholders] would have been involved in the consultation. The other thing we were doing - we're not doing it right now, but what we were doing is, every year we held a meeting that the public could attend, and we would talk about our successes, and ask people where we should go next. So, every year, different agencies, citizens came to these meetings and helped us prioritise what work needed to be done next."*	*"... how did they want to interact with the recycling program; how do they interact and use garbage services today; what are the things they would worry about as being barriers so that we could try to mitigate those in the program design."*

Profession knowledge of subject areas	Have professional knowledge on related fields	*"I think as a program manager you have to have a certain level of knowledge on the subject matter that you're managing. So, I really like that I'm … like I wouldn't just be a manager of something completely different, like it has to … for me it has to be environment. I studied it, and I worked in it forever, so I feel like that's helpful because you have that base knowledge."*	*"You have to have sort of the technological background. You know I'm an engineer by training. A lot of the folks in that area, you know, are planners by training."*

4.2.5 Problem-Solving Cluster

During the plan implementation process, managers face many problems requiring of them various problem-solving competencies: 1) analytical thinking, 2) critical thinking, 3) design thinking, 4) strategic thinking, 5) system thinking, and 6) visionary thinking. Table 13 includes details of the competencies demonstrated above.

Table 13. *Descriptions and Representative Quotations of Problem-Solving Cluster*

Competencies	*Description*	*Representative quotations*	
		Multi-stakeholder partnership practitioners	*Corporate practitioners*
Analytical thinking	Ability to break down the problem into pieces	*"If it's something easy to do and it's low risk, it can be done instantly. If there's typical risk to the municipality, either health and safety risks, financial risks, reputation risks, it takes more time, and then we bring together, and we assess these things either as a team, or we seek senior leadership advice."*	*"So the key to [make the municipality change] is identifying so what are the things, what are the factors that we can change and where can we compromise, where can we finds ways to be smart, what they use of our assets on our buildings while we're still providing the*

			service."
Critical thinking	Ability to fully evaluate the object effectively; be able to see things from both positive and negative sides	*"The positive side of [a low target] is what I shared, is that there was unanimous consensus decision on or approval, I should say. But the flip side of that, the more negative side, is that by needing to have a consensus, we kind of had to go to the lowest denominator in terms of what would be accepted, rather than putting forth a really bold, ambitious vision. You might say we weren't successful in rallying people around a bold ambition."*	*"There was a considerable amount of fear and anxiety about making any changes to recycling programs because it may have a negative effect on that organization. But by the same token, we were not achieving any significant waste diversion in our community, and we do continue actually to be a laggard across the country in that respect."*
Design thinking	Ability to design a pilot to test decisions before putting it into action	*"I worked with our [Local utility company], the [county], and myself to form a pilot, and with the pilot we opened it up to elementary schools across the region… The pilot, it was within the [utility company's] service area because they were going to fund the pilot."*	*"So, we're running five pilots, and we want to do five more pilots so we're able to create a framework and approach that other cities across Canada can use to identify and assess and manage their natural assets as well."*
Strategic thinking	Ability to develop strategies to achieve final goals	*"We specifically planned [project approval] to be in a certain order, which isn't easy when it comes to municipal decision-making processes. There's quite a lead time for them to get the reports all in and get on the specific council agendas, so we planned it, so it goes to the three cities first, and then the region last, which*	*"And we also decided which … how each building or how each generating … energy-generating equipment was going to be measured. Are we going to measure through the building energy utility metre or are we going to put meters on certain equipment? Are we going*

		kind of was strategic in a way."	*to look at … like, are we even going to measure it or going to look at any other assumptions?"*
System thinking	Ability to understand the whole system and connections among different sections	*"So, looking … having that role of trying to understand what else is occurring in the organization where things are happening and where there are opportunities for linkages to energy within the organization."*	*"We can't solve these complicated [sustainability related] systems by having only one specialty. I don't think we would've been able to develop the [project] if it came just from one of our departments. It's successful because it involves everybody."*
Visionary thinking	Ability to develop both short-term and long-term visions	*"because to me, I'm in charge of the long-term vision, making sure that those day to day things are going to where we need it go and the right decisions are made to get us to that long-term goal."*	*"And you have to look long-term, I mean, to get to sustainability. It's not a two- or five-year process; it's a long process where you have to take initial steps to get you in the right direction."*

4.2.6 Teamwork and Cooperation Cluster

Both types of plans require teamwork and cooperation competencies to implement plans effectively and efficiently. This study found that the teamwork and corporation cluster is comprised of eight competencies, including: 1) cross-sector collaboration, 2) inside sector collaboration, 3) information sharing, 4) joint decision-making and consensus building, 5) conflict resolutions, 6) facilitation competencies, and 7) inclusive perception of achievement. Detailed information on teamwork and cooperation competencies is presented in the table below:

Table 14. *Descriptions and Representative Quotations of Teamwork and Cooperation Cluster*

Competencies	*Description*	*Representative quotations*	
		Multi-stakeholder partnership practitioners	*Corporate practitioners*
Cross-sector collaboration	Ability to work with people from other sectors, including people from the private sector and civil society	*"You really hire the company to do it, but we … for the start of the service, we connected them with the school boards and got them to start it, but they, in the original launch of the project, they shepherded a lot of that through."*	*"so it's a partnership among [the City and two local utility companies] and … what [the City] did is just rented our roof space so we didn't really pay any capital costs"*
Inside sector collaboration	Ability to work with other people inside the sector, which could include working with staff from different departments or governments	*"I'm responsible for sort of improving the overall sustainability of city operations. So, working across the different departments could be things like reducing the use of bottled water, reducing our waste, corporate waste."*	*"What we did initially is, we created a steering committee from stakeholders from all departments. So, the thing that really makes the Plan best is if the Plan is developed directly with those people who will be implementing it."*
Information sharing	Ability to share information with the team or the workplace	*"We basically had to clarify what actually the risk was, we had to talk to the landowners, and we had to work with the media, and we had to inform council through memos and conversations that there was, in fact, no issue."*	*"Sharing those findings with the community and starting the conversation, then over again on the basis of bringing new information to the table."*
Joint decision-making and consensus building	Ability to work with other people to find a joint decision or to create a common goal	*"So, we work with [urban development agency] to define incentives and targets that we can both, that both, you know, the city can accept, and they can accept in terms of energy*	*"With our advisory group, our steering committee and various departments, we got a set of guiding principles that people agreed with."*

		efficiency."	
Conflict resolution	Ability to work with others to resolve conflicts in the team	*"Conflict resolution is one that comes up again and again. So is, you know, I guess, generating buy-in or, you know, getting ideas shared and getting information out of people."*	*"… [staffs] that are kind of agreeing with you and working with you. It's about making sure that they're happy with how the work gets done and who the contractor is that's going to do the work; and is that person, you know, qualified to be doing it, and do they work well with the staff in those facilities?"*
Facilitation	Ability to work as the facilitator of the meeting, including creating meeting agendas, running meetings, *etc*.	*"Setting up meetings and facilitating [stakeholders] in a way that keeps groups moving towards common goals without having kind of a neutral person facilitating a number of those meetings."*	*"As a facilitator you're the one chairing the meeting, so you're the one organizing it. You're the one making sure - looking at everyone's calendars and making sure they're there, following up if they can't make it, when they come to the table you would bring up the issue; and while doing the meetings you have to kind of control, making sure one person's opinion does not over-dominate over the others, and it's really on you to find - to make sure there's a solution."*
Inclusive perception of achievement	Ability to see achievement as an outcome of teamwork; use the word "we" in the description of the process	*"And I think by far it's the thing we're the proudest of in my team, around the work we do to address climate concerns."*	*"When we achieve those targets, then we had an ingrained culture within the organization on the corporate level which we continue with today. And that speaks to why we're*

		invigorating the green matters plan."

4.2.7 Team Leadership Cluster

Sustainability managers are also playing a team leader role in the plan implementation process. Thus, the team leadership cluster is necessary for achieving goals. The manager can work as a traditional team leader or as the boundary spanner in the team. The team leadership cluster is comprised of four competencies, including: 1) team managing, 2) boundary spanning, 3) leadership sharing, and 4) coaching and providing guidance. Details of these competencies are presented in Table 15.

Table 15. *Descriptions and Representative Quotations of Team Leadership Cluster*

Competencies	*Description*	*Representative quotations*	
		Multi-stakeholder partnership practitioners	*Corporate practitioners*
Team managing	Ability to work as the traditional team leader, including managing the team, assigning work for team members, overseeing the team, *etc*.	*"I'm heading up our section which has a group; we're in the range of about 25 people in the group that are working both on the policy side but also on the implementation side of environmental sustainability and around the energy transition, climate change pieces."*	*"I would have been management lead, team lead to ensure all of that was being done."*
Boundary spanning	Ability to work as the boundary spanner, rather than a team leader, such as brokering and creating connections between people	*"My role, especially getting this particular project planted, on board with, you know, was making the connection between the kinds of things that Natural Resources Canada were interested in studying with*	*"I'm the interaction point between the political body, the elected officials, and all the professionals."*

	and groups both inside and outside the team and organization	*the kinds of things that we knew local homeowners were doing."*	
Leadership sharing	Ability to share leadership, power, credits with team members, such as taking responsibility for certain types of work	*"I think that one of the things is you have to be willing to step up and be a leader. But, I think you have not to demand that you have the spotlight. You have to be a team player, I mean, yes, you're going to be – you know sometimes you might lead and sometimes you might be part of the team"*	*"Generally the way that I work is that if people are comfortable and confident and are able to you know, run with things then I let them lead and I let them put their ideas on the table and I let them implement those the way they think they should and if I'm comfortable with that, I let them go with that"*
Coaching and providing guidance	Ability to coach the team and provide necessary guidance as needed	*"I could steer us away from bad paths or negative interactions, or exclude difficult partners by being able to kind of get us collaboratively talking and sharing common goals. And using some of the leadership skills to develop that."*	*"To run with new programming aspects and coach [team members] and guide them and give them – you know, to find the resources they need to execute, to deliver on that outreach program."*

4.2.8 Engagement and Relationship Management Cluster

Engagement is one of the primary competencies for sustainability managers to manage and implement their sustainability plans. It requires practitioners know how to engage with various people from all three sectors, the public sector, the private sector, and civil society. Furthermore, practitioners need to know how to build relationships and trust with these people to implement their plans successfully. The engagement and relationship management cluster is comprised of five competencies, including: 1) relationship

building, 2) trust building, 3) citizen outreach, 4) external stakeholder engagement, and 5) internal stakeholder engagement. These competencies are explained in Table 16.

Table 16. Descriptions and Representative Quotations of Engagement and relationship Management Cluster

Competencies	*Description*	*Representative quotations*	
		Multi-stakeholder partnership practitioners	*Corporate practitioners*
Relationship building	Ability to build formal and informal relationships with people	*"I think from having good connections within the community to be able to drive that success is really important. So, because I've worked closely with a number of residents, being able to reach directly out to those key leaders within the community can be very helpful."*	*"I also look after the governmental relations; so, our relationships with all levels, both with the other two levels of government as well as other local municipalities around us as well as strategic partners."*
Trust building	Ability to build and gain trust from other people in all sectors	*"Just being visible in the community, that's a lot of the most important things when you're a rural planner. You have to be out in the community, you have to gain trust and respect."*	*"Having the team come to me and say, okay, I feel now I can tell you the truth. I can tell you what's going on, I can tell you, you know, I'm not scared that you're going to report stuff back to my boss, right? I can tell you what I think could be a solution to the problem."*
Citizen outreach	Ability to outreach to the (citizen) community to help community members understand the contents and benefits of the plan, and to get	*"Some of the physical ways that we did that were to host a number of in-person forums at various times of day, etc., to present some of the draft pieces of the plan and have people, community members contribute their input and do some*	*"So, public engagement skills … because you need to be able to bring people into the circle to talk, and you need to give them a way that they can express their expertise in a situation."*

	community's support and participation	*prioritization, and do some things like that."*	
External stakeholder engagement	Ability to engage with main organization-level stakeholders who can support plan implementation, such as get help and work together on plans implementation; these stakeholders could benefit from the municipality, local NGOs and local businesses	*"You know, partners that are in our community are the ones that we deal with the most long-term, which would be the health authority, the board of trade, our school district, and the universities – the two universities we have here. So those are some of the partners we have more engagement with."*	
Internal stakeholder engagement	Ability to engage people inside of the sector that leaders come from and get support and help on plans implementation	*"I would also have a full team commitment from the beginning. To sit down with all the staff at a staff meeting and explain what we're doing for the facility, so that I would have buy-in from all staff at the facility, to, like, all those who … decision making, so that when you are looking at procurement …"*	*"I would have reached out to the higher level, to the decision makers, and now as a manager, around trying to get groups to reduce emissions. I do reach out to the other managers and directors and things like that to try and get some interest in doing some projects that will have some real cuts."*

4.2.9 Impact and Influence Cluster

Sustainability and sustainable community plans aim to change people's thoughts and behaviours. Therefore, in the plan implementation process, managers need to be willing to, or have the motivations to, affect others. The table below includes how sustainability managers tend to change others' thoughts and behaviours.

Table 17. *Descriptions and Representative Quotations of Impact and Influence Cluster*

Competency	*Description*	*Representative quotations*	
		Multi-stakeholder partnership practitioners	*Corporate practitioners*
Impact and influence	Ability to, and willing to, affect and influence other people through education, engagement activities, communication, etc.; willingness to influence changes in policies and procedures.	*"So, you want to show people the full cycle of recycling so that they can understand the value. And that's the biggest contribution. And that really changes people's behaviour when you can see the full value of a product."*	*"When you're changing ... you're changing the way things are done historically, right, like, we're changing behaviours and patterns in this organization."*

4.2.10 Section Conclusion

Overall, there are nine competency clusters and 49 competencies identified in this research, including communication, project management, individual attributes, knowledge management, problem-solving, teamwork and cooperation, team leadership, engagement, and impact and influence.

4.3 Main Competencies – Quantitative Approach

This section summarizes the frequency counts of appearances of each competency that the sustainability managers demonstrated/established having. The results are separated into two tables: multi-stakeholder partnership practitioners who manage community-wide community sustainability plans with multi-stakeholder partnerships (Table 18); and corporate practitioners who manage corporate-level community sustainability plans without a multi-stakeholder partnership (Table 19). The number "1" indicates the sustainability managers demonstrating he/she has the corresponded competency; and "0" indicates the sustainability managers not demonstrating he/she has the corresponded competency.

Table 18. *Frequency Counts of Competency Appearances for Multi-stakeholder Partnership Practitioners*

Sustainability managers / Competencies	1	2	3	4	5	6	7	8	9	10	11	12	Total
Communication cluster													
Active listening	0	1	1	1	1	1	1	1	1	0	1	0	**9 (75%)**
Audience adaptation	0	1	1	0	1	1	0	1	1	0	0	0	**6 (50%)**
Knowledge translation	1	0	1	1	0	1	1	1	1	1	1	0	**9 (75%)**
Knowledge mobilization	1	0	1	1	1	0	1	0	0	1	0	0	**6 (50%)**
Interpersonal communication	1	1	1	1	1	1	1	1	1	1	1	1	**12 (100%)**
Subtotal	3	3	5	4	4	4	4	4	4	3	3	1	
Project management cluster													
Partnership management	0	0	0	0	1	1	0	1	0	0	1	0	**4 (33.33%)**
Financial knowledge and fundraising	1	0	0	0	1	1	0	1	1	1	1	1	**8 (66.67%)**
Political knowledge	0	0	0	0	0	0	1	1	0	0	0	1	**3 (25%)**
Project identification and development	1	0	0	1	1	1	0	1	0	1	0	1	**7 (58.33%)**
Project coordination and implementation	1	1	1	1	0	0	1	0	1	1	1	1	**9 (75%)**
Report preparation	1	0	0	0	0	1	1	1	0	0	0	0	**4 (33.33%)**
Human resources management	0	1	0	1	0	1	0	0	1	0	0	0	**4 (33.33%)**
Time management	1	0	0	0	1	0	0	0	0	1	0	1	**4**

													(33.33%)
Subtotal	5	2	1	3	4	5	3	5	3	4	3	5	
Individual attributes cluster													
Emotional intelligence	0	1	0	0	1	0	1	0	0	1	0	1	**5 (41.67%)**
Empathy	1	1	1	1	1	1	1	1	1	1	0	1	**11 (91.67%)**
Humility	0	1	0	1	0	0	0	1	0	1	1	1	**6 (50%)**
Flexibility and adaptability	0	1	0	1	0	0	0	0	1	0	0	1	**4 (33.33%)**
Open-mindedness	0	1	1	1	0	0	0	0	0	0	1	1	**5 (41.67%)**
Self-reflection	0	1	0	0	1	0	0	0	0	0	1	1	**4 (33.33%)**
Persistence	0	1	0	0	0	0	1	0	1	0	1	0	**4 (33.33%)**
Subtotal	1	7	2	4	3	1	3	2	3	3	4	6	
Knowledge management cluster													
Information seeking	1	1	1	1	1	1	0	0	0	1	1	1	**9 (75%)**
Information integration	1	0	1	1	0	1	1	0	1	0	1	0	**7 (58.33%)**
Consultation	1	1	1	1	1	1	1	1	1	1	1	1	**12 (100%)**
Professional knowledge of subject area	1	1	1	1	1	1	1	1	1	0	1	1	**11 (91.67%)**
Subtotal	4	3	4	4	3	4	3	2	3	2	4	3	
Problem-solving cluster													
Analytic thinking	0	1	1	1	1	1	0	0	0	1	1	1	**8 (66.67%)**
Critical thinking	1	1	1	0	1	0	0	0	0	1	1	1	**7 (58.33%)**

Design thinking	1	1	1	1	0	0	0	0	0	1	0	0	**5 (41.67%)**
Strategic thinking	1	0	0	1	1	1	1	1	0	1	0	1	**8 (66.67%)**
System thinking	1	1	0	1	0	1	0	1	1	1	1	1	**9 (75%)**
Visionary thinking	1	0	0	1	1	0	1	1	0	0	1	1	**7 (58.33%)**
Subtotal	5	4	3	5	4	3	2	3	1	5	4	5	
Teamwork and cooperation cluster													
Cross-sector collaboration	1	1	1	1	1	1	0	1	1	1	1	1	**11 (91.67%)**
Inside sector collaboration	1	1	1	1	1	1	0	0	1	1	0	1	**9 (75%)**
Information sharing	1	0	1	1	1	0	0	1	1	1	1	1	**9 (75%)**
Joint decision-making and consensus building	1	0	0	1	1	1	0	1	1	0	0	0	**6 (42.85%)**
Conflict resolution	0	0	0	1	1	0	0	1	1	0	0	0	**4 (33.33%)**
Facilitation	0	1	1	1	1	1	1	0	0	0	0	0	**6 (50%)**
Inclusive perception on achievement	1	1	1	1	1	1	0	1	1	1	1	1	**11 (91.67%)**
Subtotal	5	4	5	7	8	5	1	6	6	4	3	4	
Team leadership cluster													
Team managing	1	1	1	1	1	1	0	1	0	1	1	1	**10 (83.33%)**
Boundary spanning	1	1	1	1	1	1	0	1	0	0	1	1	**9 (75%)**
Leadership sharing	1	0	1	1	1	0	0	0	0	0	1	0	**5**

													(41.67%)
Coaching and providing guidance	0	1	0	0	0	0	0	1	1	0	1	0	**4 (33.33%)**
Subtotal	3	3	3	3	3	2	0	3	1	1	5	2	
Engagement and relationship management cluster													
Relationship building	1	0	1	1	0	1	0	1	1	1	0	1	**8 (66.67%)**
Trust building	0	0	0	0	0	0	1	0	0	0	0	0	**1 (8.33%)**
Citizen engagement	1	1	1	1	1	0	1	1	1	1	1	1	**11 (91.67%)**
External stakeholder engagement	1	0	1	1	1	0	1	1	0	1	1	0	**8 (66.67%)**
Internal stakeholder engagement	0	0	0	0	0	1	0	1	0	1	1	1	**5 (50%)**
Subtotal	3	1	3	3	2	2	3	4	3	4	3	3	
Impact and influence cluster													
Impact and influence	1	1	1	1	1	0	1	1	1	1	0	0	**9 (75%)**
Subtotal	1	1	1	1	1	0	1	1	1	1	0	0	
Total	**30**	**28**	**27**	**34**	**32**	**26**	**20**	**30**	**25**	**27**	**29**	**29**	

Table 19. *Frequency Counts of Competency Appearances for Corporate Practitioners*

Sustainability managers / Competencies	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Communication cluster															
Active listening	1	0	0	1	1	0	0	0	0	0	1	0	0	0	**4 (28.57%)**
Audience adaptation	1	1	1	1	0	1	1	1	0	1	1	1	1	1	**12 (85.71%)**
Knowledge translation	0	1	1	1	1	1	1	1	0	1	1	1	1	1	**12 (85.71%)**
Knowledge mobilization	1	1	1	1	0	0	1	0	0	0	0	0	0	1	**6 (42.56%)**
Interpersonal communication	1	1	1	1	1	1	1	1	0	1	1	1	1	1	**13 (92.56%)**
Subtotal	4	4	4	5	3	3	4	3	0	3	4	3	3	4	
Project management cluster															
Partnership management	1	0	0	0	0	0	0	1	0	0	1	0	0	0	**3 (21.42%)**
Financial knowledge and fundraising	1	1	1	0	1	1	0	1	1	1	1	1	1	1	**12 (85.71%)**
Political knowledge	0	0	0	0	1	0	0	1	1	0	0	0	1	0	**4 (28.57%)**
Project identification and development	0	0	1	1	1	1	1	1	1	1	1	1	1	1	**12 (85.71%)**
Project coordination and implementation	1	0	0	0	1	1	1	1	0	1	1	1	1	1	**10 (71.43%)**
Report preparation	0	0	0	0	1	0	0	0	0	0	1	0	1	1	**4 (28.57%)**

Human resources management	1	1	1	0	1	1	1	1	0	1	1	1	1	0	**11 (78.57%)**
Time management	0	0	0	0	1	0	1	1	1	1	1	0	1	0	**7 (50%)**
Subtotal	3	2	3	1	7	4	4	6	4	5	6	4	7	4	
Individual attributes cluster															
Emotional intelligence	1	0	0	1	1	1	1	0	0	1	0	1	1	1	**9 (64.29%)**
Empathy	1	0	1	1	1	1	1	0	0	1	1	1	0	1	**10 (71.43%)**
Humility	0	0	1	0	0	1	1	0	0	0	0	0	0	1	**4 (28.57%)**
Flexibility and adaptability	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**1 (7.14%)**
Open-mindedness	0	0	1	0	0	1	0	1	0	0	0	1	1	1	**6 (42.56%)**
Self-reflection	0	0	0	0	1	1	1	1	0	0	0	1	0	1	**6 (42.56%)**
Persistence	0	0	0	0	1	0	0	0	0	1	0	1	1	0	**4 (28.57%)**
Subtotal	3	0	3	2	4	5	4	2	0	3	1	5	3	5	
Knowledge management cluster															
Information seeking	1	0	1	0	1	1	1	0	0	0	0	1	1	1	**8 (57.14)**
Information integration	1	1	1	0	0	1	1	1	0	1	0	1	1	1	**4 (28.57%)**
Consultation	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14 (100%)**
Professional knowledge of subject area	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**14 (100%)**
Subtotal	4	3	4	2	3	4	4	3	2	3	2	4	4	4	

Problem-solving Cluster															
Analytical thinking	1	0	1	1	1	0	1	1	0	1	1	1	1	1	**11 (78.57%)**
Critical thinking	0	1	1	0	1	1	1	1	0	0	1	0	1	1	**9 (64.26%)**
Design thinking	1	0	1	0	1	1	1	1	0	0	0	0	0	0	**6 (42.56%)**
Strategic thinking	0	1	1	1	1	1	1	1	0	1	1	1	1	1	**12 (85.71%)**
System thinking	1	1	0	1	1	0	1	1	1	1	1	1	1	1	**12 (85.71%)**
Visionary thinking	1	1	1	0	1	1	1	0	1	1	1	1	1	1	**12 (85.71%)**
Subtotal	4	4	5	3	6	4	6	5	2	4	5	4	5	5	
Teamwork and cooperation cluster															
Cross-sector collaboration	1	0	0	0	0	1	0	1	0	0	1	0	0	0	**4 (28.57%)**
Inside sector collaboration	1	1	1	0	1	0	1	1	0	1	1	1	1	1	**12 (85.71%)**
Information sharing	0	0	0	0	0	1	1	1	0	1	0	0	1	1	**6 (42.56%)**
Joint decision-making and consensus building	1	0	1	0	1	0	1	0	0	1	0	1	1	1	**8 (66.67%)**
Conflict resolution	0	0	0	1	1	0	1	0	0	1	0	0	0	0	**4 (28.57%)**
Facilitation	1	0	0	1	0	1	0	0	0	0	1	0	1	0	**4 (28.57%)**
Inclusive perception on achievement	1	1	1	1	1	1	1	1	0	1	1	1	1	1	**13 (92.56%)**
Subtotal	5	2	4	3	4	4	6	4	0	5	4	4	5	5	

Team leadership cluster															
Team managing	1	1	0	1	1	1	1	1	1	1	1	1	1	1	**13 (92.56%)**
Boundary spanning	1	1	1	1	0	1	0	1	1	0	1	0	0	0	**8 (57.14%)**
Leadership Sharing	1	1	1	1	0	1	0	0	0	0	1	0	0	1	**7 (50%)**
Coaching and providing guidance	0	1	0	0	1	1	1	0	0	0	0	1	1	0	**6 (42.56%)**
Subtotal	3	4	2	3	2	4	2	2	2	1	3	2	2	2	
Engagement and relationship management cluster															
Relationship building	1	1	1	1	1	1	1	0	1	1	0	1	1	1	**12 (85.71%)**
Trust building	0	1	0	0	0	0	1	0	0	1	0	0	0	1	**4 (28.57%)**
Citizen outreach	1	1	1	1	1	1	1	0	1	0	1	0	0	1	**10 (71.43%)**
External stakeholder engagement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0 (0%)**
Internal stakeholder engagement	1	1	1	1	1	1	1	0	1	1	0	1	1	1	**12 (85.71%)**
Subtotal	3	5	3	3	3	3	4	0	3	3	1	2	2	4	
Impact and influence cluster															
Impact and influence	1	1	1	1	1	1	1	1	0	1	0	1	1	0	**11 (78.57%)**
Subtotal	1	1	1	1	1	1	1	1	0	1	0	1	1	0	
Total	**30**	**25**	**29**	**23**	**33**	**32**	**35**	**26**	**13**	**28**	**26**	**29**	**32**	**34**	

As the two tables show, sustainability managers from the two groups showed they have various competencies. In the next section, appearances of each competency in the two groups will be used to identify whether there is a statistically significant difference between the two groups of sustainability managers.

The following tables summarize the percentages of competency appearances are 75% or higher for both groups. The checkmark indicates the percentage is equal or higher than 75%.

Table 20. *The Percentages of Competency Appearances are Equal or Higher than 75% for Both Groups*

Clusters & Competencies	**Sustainability Managers**	**Multi-stakeholder partnership practitioners**	**Corporate practitioners**
Communication	Active listening	√	
	Audience adaptation		√
	Knowledge translation	√	√
	Knowledge mobilization		
	Interpersonal communication	√	√
Project management	Partnership management		
	Financial knowledge and fundraising		√
	Political knowledge		
	Project identification and development	√	√
	Project coordination and implementation		
	Report preparation		
	Human resources management		√
	Time management		

Individual attributes	Emotional intelligence		
	Empathy	√	
	Humility		
	Flexibility and adaptability		
	Open-mindedness		
	Self-reflection		
	Persistence		
Knowledge management	Information seeking	√	
	Information integration		
	Consultation	√	√
	Professional knowledge of subject area	√	√
Problem-solving	Analytical thinking		√
	Critical thinking		
	Design thinking		
	Strategic thinking		
	System thinking	√	√
	Visionary thinking		√
Teamwork and cooperation	Cross-sector collaboration	√	
	Inside sector collaboration	√	√
	Information sharing		
	Joint decision-making		
	Conflict resolution		
	Facilitation		
	Inclusive perception on achievement	√	√
Team leadership	Team managing	√	√
	Boundary spanning	√	

	Leadership Sharing		
	Coaching and providing guidance		
Engagement and Relationship Management	Relationship building		√
	Trust building		
	Citizen outreach	√	
	External stakeholder engagement		
	Internal stakeholder engagement		√
Impact and influence	Impact and influence	√	√

4.4 Comparison Between the Two Groups

In the statistical analysis, appearances of main competencies in each interview were coded and used to determine if there were any significant differences in competencies between multi-stakeholder partnership practitioners and corporate practitioners that had been discussed/demonstrated by them.

This section is separated into nine subsections based on the competency clusters previously identified. Each subsection includes a table that summarizes the descriptive data and independent sample t-test result of each competency to examine whether there is a statistically significant difference between the two groups of sustainability leaders. For the competencies that did not have a statistical significant difference between the two groups, the effect sizes (practical difference) were calculated to show whether a small-, medium-, or large-sized effect exists. The virtual explanation of effect sizes can be found in Appendix H.

4.4.1 Communication Cluster

Table 21 presents the results of the independent sample t-test between sustainability managers (multi-stakeholder partnership practitioners) who manage the implementations of community-level community sustainability plans with multi-stakeholder partnerships, and sustainability managers (corporate practitioners) who manage the corporate level community sustainability plans without a multi-stakeholder partnership, for each communication competency. The results include the means and standard deviations of each group on every competency as well as the t values and Cohen's d for each competency. The percentages of sustainability practitioners who demonstrated each competency in communication cluster and detailed explanations can be found in Appendix I.

Table 21. *Independent Sample t-test Results for Communication Cluster Between Corporate Practitioners and Multi-stakeholder Partnership Practitioner Groups*

	Corporate practitioners		Multi-stakeholder partnership practitioners			
Competencies	M	SD	M	SD	t	Cohen's d[a]
Active listening	.29	.47	.75	.45	2.59*	.98
Audience adaptation	.79	.43	.50	.52	-1.54	-.68
Knowledge translation	.86	.36	.75	.45	-.67	-.30
Knowledge mobilization	.43	.51	.50	.52	.35	.14
Interpersonal communication	.93	.27	1.00	.00	.92	.26

* $p<0.05$

[a] See Appendix H for interpretation graphs of effect sizes (Cohen's d).

In this competency cluster, the active listening competency indicated a statistically significant difference between the two groups of sustainability practitioners. While the rest of the competencies in this cluster did not show any statistically significant difference, one of the competencies, audience adaptation, did represent a medium-sized effect, and two of the competencies, knowledge translation and interpersonal communication, did indicate there are small-sized effects between the two groups.

Table 21 shows that more multi-stakeholder partnership practitioners demonstrated in their interpretation of workplace scenario(s) active listening ($M = 0.75$, $SD = 0.45$) than did corporate practitioners ($M = 0.29$, $SD = 0.47$). This difference, 0.46, was significant $t(24) = 2.59$, $p < 0.05$. This result indicates that active listening was discussed by multi-stakeholder partnership practitioners more frequently than by corporate practitioners.

More corporate practitioners demonstrated knowledge translation ($M = 0.79$, $SD = 0.43$) than did multi-stakeholder partnership practitioners ($M = 0.50$, $SD = 0.52$). This difference of 0.29, was not statistically significant $t(24) = -1.54$; however, it does represent a medium-sized effect, $d = -0.68$. The negative medium-sized effect indicates that, if a sustainability practitioners manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having the audience adaptation competency will be reduced by 0.68 standard deviations. 76% of the corporate practitioners demonstrated audience adaptation, which is above the number of multi-stakeholder partnership practitioners who demonstrated this competency.

In addition, more corporate practitioners demonstrated knowledge translation ($M = 0.86$, $SD = 0.36$) than did multi-stakeholder partnership practitioners ($M = 0.75$, $SD = 0.45$). This difference, 0.11, was not statistically significant $t(24) = -0.67$; however, it does represent a medium-sized effect, $d = -0.30$. This negative medium-sized effect indicates that, if a sustainability practitioner manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having the knowledge translation

competency will be reduced by 0.30 standard deviations.

More multi-stakeholder partnership practitioners showed they have demonstrated knowledge mobilization competency (M = 0.50, SD= 0.52), than did corporate practitioners (M = 0.43, SD = 0.51). This difference, 0.07, was not statistically significant t (24) = 0.35; however, it did does represent a small-sized effect, d = 0.14. This implies there was a small practical difference between two groups.

Moreover, more multi-stakeholder partnership practitioners demonstrated interpersonal communication (M = 1.00, SD = 0.00) than did corporate practitioners (M = 0.93, SD = 0.27). This difference, 0.07, was not statistically significant t (24) = 0.93; however, it does represent a medium-sized effect, d = 0.26. This medium-sized effect indicates that, if the sustainability managers manage the implementation of the community sustainability plan with a multi-stakeholder partnership, the appearance of having this competency will increase by 0.26 standard deviations. 62% of the multi-stakeholder partnership practitioners demonstrated oral communication, which was above the average number of corporate practitioners who demonstrated this competency.

4.4.2 Project Management Cluster

Table 22 presents the results of independent sample t-tests for all eight project management competencies, between multi-stakeholder partnership practitioners who managed the implementations of community-level community sustainability plans and multi-stakeholder partnerships and the corporate practitioners who managed the corporate level community sustainability plans without a multi-stakeholder partnership. Results include means and standard deviations of each group for every competency, and t values and Cohen's d for each competency. Refer to Appendix J for virtual and detailed explanations.

Table 22. *Independent Sample T-test Results for Project Management Cluster Between Corporate Practitioner and Multi-stakeholder Partnership Practitioner Groups*

	Corporate practitioners		Multi-stakeholder partnership practitioners			
Competencies	M	SD	M	SD	t	Cohen's d[a]
Partnership management	.21	.43	.33	.49	.52	.28
Financial knowledge and fundraising	.86	.36	.67	.49	-1.13	-.52
Political knowledge	.29	.47	.25	.45	-.20	-.11
Project identification and development	.86	.36	.58	.52	-1.58	-.77
Project coordination and implementation	.71	.47	.75	.45	.20	.09
Report preparation	.29	.47	.33	.49	.25	.09
Human resources management	.79	.43	.33	.49	-2.51*	-1.09
Time management	.50	.52	.33	.49	-.84	-.33

* $p<0.05$

[a] See Appendix H for interpretation graphs of effect sizes (Cohen's d).

In this cluster, human resources management showed there was a statistically significant difference between multi-stakeholder partnership practitioners and corporate practitioners. Two competencies did represent two small-sized effects (financial knowledge and fundraising, project identification and development). The rest of the competencies did not show a statistically significant difference or a practical difference.

Table 21 shows more multi-stakeholder partnership practitioners demonstrated partnership management (M = 0.33, SD = 0.49) than did corporate practitioners (M = 0.21, SD = 0.43). This difference, 0.12, was not statistically significant t (24) = 0.52; however, it represented does represent a small-sized effect, d= 0.28. This indicates there is a small practical difference between two groups.

Fewer multi-stakeholder partnership practitioners demonstrated financial knowledge and fundraising competency (M = 0.67, SD = 0.49) than did corporate practitioners (M = 0.86, SD = 0.36). This difference, 0.22, was not statistically significant t (24) = -1.13; however, it does represent a medium-sized effect, d = -0.52. This implies that if a sustainability practitioner manages the community sustainability plans with a multi-stakeholder partnership, the appearance of having financial knowledge and fundraising competency will be reduced by 0.52 standard deviations. 69% of the corporate practitioners demonstrated financial knowledge, which is above the average number of multi-stakeholder partnership practitioners who demonstrated this competency.

In addition, fewer multi-stakeholder partnership practitioners demonstrated political knowledge (M = 0.25, SD = 0.45) than did corporate practitioners (M = 0.29, SD = 0.47). This difference, 0.04, was not statistically significant t (24) = -0.20; however, it represented does represent a very small-sized effect, d = -0.11. This indicates there was a small practical difference between two groups.

More multi-stakeholder partnership practitioners demonstrated project identification and development (M = 0.58, SD = 0.52) than did corporate practitioners (M = 0.86, SD = 0.36). This difference, 0.31, was not statistically significant t (24) = -1.58; however, it does represent a large-sized effect, d = -0.77. 73% of the corporate practitioners demonstrated project identification and development, which is above the average number of multi-stakeholder partnership practitioners who demonstrated this competency.

Similarly, more multi-stakeholder partnership practitioners demonstrated project coordination and implementation (M = 0.75, SD = 0.452) than did corporate practitioners (M = 0.71, SD = 0.469). This difference, 0.04, was not statistically significant t (24) = 0.20; however, it represented does represent a very small-sized effect, d = 0.09, which indicates there was a small practical difference exists.

More multi-stakeholder partnership practitioners demonstrated report preparation (M = 0.33, SD = 0.49) than did corporate practitioners (M = 0.29, SD = 0.47). This difference, 0.04, was not statistically significant t (24) = 0.25; however, it does represent a very small-sized effect, d = 0.09. This indicates there was a small practical difference between two groups.

In contrast, fewer multi-stakeholder partnership practitioners demonstrated human resources management (M = 0.33, SD = 0.49) than did corporate practitioners (M = 0.79, SD = 0.43). This difference, 0.46, was statistically t (24) = -2.51, $p < 0.05$, d = -1.09. This indicates human resources management is more frequently discussed by sustainability practitioners who manage the implementation of community sustainability plans without a multi-stakeholder partnership than practitioners who manage the implementations with multi-stakeholder partnerships.

Fewer multi-stakeholder partnership practitioners demonstrated time management (M = 0.33, SD = 0.49) than did corporate practitioners (M = 0.50, SD = 0.52). This difference, 0.17, was not statistically significant t (24) = -0.84; however, it does represent a small-sized effect, d = -0.33, which indicates there was a small practical difference between two groups.

4.4.3 Individual Attributes Cluster

Table 23 presents the results of independent sample t-tests for all seven individual attributes of the multi-stakeholder partnership practitioners who managed the implementations of community-level community sustainability plans with multi-stakeholder partnerships and of the corporate practitioners who managed the corporate-level community sustainability plans without a multi-stakeholder partnership. The results include means and standard deviations of each group for every competency, and t values and Cohen's d for each competency. The percentages of each competency in individual attributes cluster and detailed explanations can be found in Appendix K.

Table 23. *Independent Sample T-test Results for Individual Attributes Cluster Between Corporate Practitioner and Multi-stakeholder Partnership Practitioner Groups*

	Corporate practitioners		Multi-stakeholder partnership practitioners			
Competencies	M	SD	M	SD	t	Cohen's d[a]
Emotional intelligence	.64	.50	.42	.52	-1.14	-.44
Empathy	.71	.47	.92	.29	1.30	.45
Humility	.29	.47	.50	.52	1.10	.45
Flexibility and adaptability	.14	.36	.33	.49	1.13	.52
Open-mindedness	.43	.51	.42	.52	-.06	-.02
Self-reflection	.50	.52	.33	.49	-.84	-.33
Persistence	.29	.47	.33	.49	.25	.09

[a] See Appendix H for interpretation graphs of effect sizes (Cohen's d).

The independent sample t-test showed there was no statistically significant difference between the two groups of sustainability leaders in this cluster. However, it did represent practical differences, medium-sized effects, between the two groups on emotional intelligence, empathy, humility, and flexibility and adaptability. In addition, self-reflection did show a small-sized effect between the two groups.

Fewer multi-stakeholder partnership practitioners demonstrated emotional intelligence (M = 0.64, SD = 0.50) than did corporate practitioners (M = 0.42, SD = 0.52). This difference, 0.12, was not statistically significant, t (24) = -1.14; however, it does represent a small- to medium-sized effect, d = -0.44. It indicates that if a sustainability leader manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having emotional intelligence will be reduced by 0.44. 66% of the corporate practitioners demonstrated emotional intelligence, which is above the number of multi-stakeholder partnership practitioners who demonstrated this competency.

More multi-stakeholder partnership practitioners demonstrated empathy (M = 0.92, SD = 0.29) than did corporate practitioners (M = 0.71, SD = 0.47). This difference, 0.21, was not statistically significant t (24) = 1.30; however, it does represent a small- to medium-sized effect, d = 0.45. This effect implies that if a sustainability practitioner manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having empathy will be increased by 0.45 standard deviations. 66% of the multi-stakeholder partnership practitioners demonstrated empathy, which is above the number of corporate practitioners who demonstrated this competency.

More multi-stakeholder partnership practitioners demonstrated humility (M = 0.50, SD = 0.52) than did corporate practitioners (M = 0.29, SD = 0.47). This difference, 0.21, was not statistically significant t (24) = 1.10; however, it does represent a small- to medium-sized effect, d = 0.45. This effect implies that if a sustainability practitioner manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having humility will be increased by 0.45 standard deviations. 66% of the multi-stakeholder partnership practitioners demonstrated humility, which is above the number of corporate practitioners who demonstrated this competency.

More multi-stakeholder partnership practitioners demonstrated flexibility and adaptability (M = 0.33, SD = 0.49) than did corporate practitioners (M = 0.14, SD = 0.36). This difference, 0.19, was not significant t (24) = 1.33; however, it does represent a medium-sized effect, d = 0.52. This medium-sized effect indicates that if a sustainability practitioner manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having flexibility and adaptability will be increased by 0.52 standard deviations. 69% of the multi-stakeholder partnership practitioners demonstrated flexibility and adaptability, which is above the number of corporate practitioners who demonstrated this competency.

Fewer multi-stakeholder partnership practitioners demonstrated open-mindedness (M =

0.42, SD = 0.52) than did corporate practitioners (M = 0.43, SD = 0.51). This difference, 0.01, was not statistically significant t (24) = -0.06; however, it does represent a very small-sized effect, d = -0.02. There was a tiny difference between the two groups.

Fewer multi-stakeholder partnership practitioners demonstrated self-reflection (M = 0.33, SD = 0.49) than did corporate practitioners (M = 0.50, SD = 0.52). This difference, 0.17, was not statistically significant t (24) = -0.84; however, it does represent a small-sized effect, d = -0.33. This indicates there was a small practical difference between two groups.

More multi-stakeholder partnership practitioners demonstrated persistence (M = 0.33, SD = 0.49) than did corporate practitioners (M = 0.29, SD = 0.47). This difference, 0.04, was not statistically significant t (24) = 0.25; however, it does represent a very small -sized effect, d = 0.09. This indicates there was a tiny practical difference exists.

4.4.4 Knowledge Management Cluster

Table 24 presents the results of independent sample t-tests for all four knowledge management competencies between the multi-stakeholder partnership practitioners who managed the implementations of community-level community sustainability plans with multi-stakeholder partnerships and the corporate practitioners who managed the corporate-level community sustainability plans without a multi-stakeholder partnership. Results include means and standard deviations of each group for every competency, and t values and Cohen's d for each competency. The percentages of each competency in knowledge management cluster and detailed explanations can be found in Appendix L.

Table 24. *Independent Sample T-test Results for Knowledge Management Cluster Between Corporate Practitioner and Multi-stakeholder Partnership Practitioner Groups*

	Corporate practitioners		Multi-stakeholder partnership practitioners			
Competencies	M	SD	M	SD	t	Cohen's d[a]
Information seeking	.57	.51	.75	.45	.93	.35
Information integration	.71	.47	.58	.52	-.68	.28
Consultation	1.00	.00	1.00	.00	N/A	N/A
Professional knowledge of subject areas	1.00	.00	.92	.29	-1.08	N/A

[a] See Appendix H for interpretation graphs of effect sizes (Cohen's d).

In this cluster, there was no statistically significant difference identified; nonetheless, two competencies, information seeking and information integration, indicated there were small-sized effects between multi-stakeholder partnership practitioners and corporate practitioners. Consultation and professional knowledge of subject areas did not reveal a significant difference (t value and p-value) or a practical difference (Cohen's d).

More multi-stakeholder partnership practitioners demonstrated information seeking (M = 0.75, SD = 0.45) than did corporate practitioners (M = 0.57, SD = 0.51). This difference, 0.22, was not statistically significant t (24) = 0.93; however, it does represent a small-sized effect, d = 0.35, which indicates there was a small practical difference between two.

Moreover, fewer multi-stakeholder partnership practitioners demonstrated information integration (M = 0.58, SD = 0.52) than did corporate practitioners (M = 0.71, SD = 0.47). This difference, 0.13, was not statistically significant t (24) = -0.68; however, it does represent a small-sized effect, d = 0.28. There was a small practical difference between two groups.

All multi-stakeholder partnership practitioners demonstrated consultation (M = 1.00, SD = 0.00), as well as the corporate practitioners (M = 1.00, SD = 0.00). There was no difference between the two groups of sustainability leaders. This implies that this

competency is necessary and essential to both multi-stakeholder partnership practitioners and corporate practitioners.

Fewer multi-stakeholder partnership practitioners demonstrated professional knowledge of the subject area as a competency (M = 0.92, SD = 0.29) than did corporate practitioners (M = 1.00, SD = 0.00). This difference, 0.08, was not statistically significant t (24) = -1.08. This implies all corporate practitioners and most of the multi-stakeholder partnership practitioners showed they have professional knowledge while they were managing the implementation of community sustainability plans. Hence, like the consultation competency, professional knowledge of the subject area is necessary to both groups of sustainability practitioners.

4.4.5 Problem-Solving Cluster

Table 25 presents the results of independent sample t-tests for all six problem-solving competencies between the multi-stakeholder partnership practitioners who managed the implementations of community-wide community sustainability plans with multi-stakeholder partnerships and the corporate practitioners who managed the corporate-level community sustainability plans without a multi-stakeholder partnership. Results include means and standard deviations of each group for every competency and t values, and Cohen's d for each competency. The percentages of each competency in problem-solving cluster and detailed explanations can be found in Appendix M.

Table 25. *Independent Sample T-test Results for Problem-Solving Cluster Between Corporate Practitioner and Multi-stakeholder Partnership Practitioner Groups*

	Corporate practitioners		Multi-stakeholder partnership practitioners			
Competencies	M	SD	M	SD	t	Cohen's d[a]
Analytical thinking	.79	.43	.67	.49	-.66	-.28
Critical thinking	.64	.50	.67	.49	.12	.06
Design thinking	.43	.51	.33	.49	-.48	-.20
Strategic thinking	.86	.36	.58	.52	-1.58	-.77
System thinking	.86	.36	.75	.45	-.67	-.39
Visionary thinking	.86	.36	.58	.52	-1.58	-.77

[a] See Appendix H for interpretation graphs of effect sizes (Cohen's d).

There was no statistically significant difference identified in this cluster. However, strategic thinking and visionary thinking did indicate medium-sized effects between the two groups. In addition, analytical thinking, design thinking, and system thinking showed there were small-sized effects between the two groups.

Fewer multi-stakeholder partnership practitioners demonstrated analytical thinking (M = 0.67, SD = 0.49) than did corporate practitioners (M = 0.79, SD = 0.43). This difference, 0.12, was not statistically significant t (24) = -0.66; however, it does represent a small-sized effect, d = -0.28, which indicates there was a small practical difference between two groups.

In addition, more multi-stakeholder partnership practitioners demonstrated critical thinking (M = 0.67, SD = 0.49) than did corporate practitioners (M = 0.64, SD = 0.50). This difference, 0.03, was not statistically significant t (24) = 0.12: however, it does represent a very small-sized effect, d = 0.06. There was a tiny effect between the two groups of sustainability practitioners on critical thinking.

Fewer multi-stakeholder partnership practitioners demonstrated design thinking (M =

0.33, SD = 0.49) than did corporate practitioners (M = 0.43, SD = 0.51). This difference, 0.12, was not statistically significant t (24) = -0.48; however, it does represent a small-sized effect, d = -0.20.

Moreover, fewer multi-stakeholder partnership practitioners demonstrated strategic thinking (M = 0.58, SD = 0.52) than did corporate practitioners (M = 0.86, SD = 0.36). This difference, 0.28, was not statistically significant t (24) = -1.58; however, it does represent a medium-sized effect, d = -0.77 This effect implies that if a sustainability practitioner manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having the strategic thinking competency will be reduced by 0.77 standard deviations. 79% of the corporate practitioners demonstrated strategic thinking which is, above the number of multi-stakeholder partnership practitioners who demonstrated this competency.

Fewer multi-stakeholder partnership practitioners demonstrated system thinking (M = 0.75, SD = 0.45) than did corporate practitioners (M = 0.86, SD = 0.36). This difference, 0.11, was not statistically significant t (24) = -0.67; however, it does represent a small-sized effect, d = -0.39.

Similarly, fewer multi-stakeholder partnership practitioners demonstrated visionary thinking (M = 0.58, SD = 0.52) than did corporate practitioners (M = 0.86, SD = 0.36). This difference, 0.28, was not statistically significant t (24) = -1.58; however, it does represent a large-sized effect, d = -0.77. This effect implies that if a sustainability practitioner manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having the visionary thinking competency will be increased by 0.77 standard deviations. 79% of the corporate practitioners demonstrated visionary thinking, which is above the number of multi-stakeholder partnership practitioners who demonstrated this competency.

4.4.6 Teamwork and Cooperation Cluster

Table 26 presents the results of independent sample t-tests for all seven teamwork and cooperation competencies between the multi-stakeholder partnership practitioners who managed the implementations of community-level community sustainability plans with multi-stakeholder partnerships, and the corporate practitioners who managed the corporate-level community sustainability plans without a multi-stakeholder partnership. Results include means and standard deviations of each group for every competency, and t values and Cohen's d for each competency. The percentages of each competency in teamwork and cooperation cluster and detailed explanations can be found in Appendix N.

Table 26. *Independent Sample T-test Results for Teamwork and Cooperation Cluster Between Corporate Practitioner and Multi-stakeholder Partnership Practitioner Groups*

	Corporate practitioners		Multi-stakeholder partnership practitioners			
Competencies	M	SD	M	SD	t	Cohen's d[a]
Cross-sector collaboration	.29	.22	.92	.08	4.04*	.51
Inside sector collaboration	.79	.43	.67	.49	-.66	-.28
Information sharing	.43	.51	.75	.45	1.68	.62
Joint decision-making and consensus building	.64	.50	.92	.29	.11	.56
Conflict resolution	.29	.47	.25	.45	-.20	-.09
Facilitation	.36	.50	.50	.52	.71	.28
Inclusive perception on achievement	.93	.27	.83	.39	-.74	-.38

* $p<0.05$

[a] See Appendix H for interpretation graphs of effect sizes (Cohen's d).

The independent t-test did show a statistically difference between two groups of practitioners on cross-sector collaboration. More multi-stakeholder partnership

practitioners demonstrated this competency (M = 0.92, SD = 0.08) than did corporate practitioners (M = 0.29, SD = 0.22).

Although the independent sample t-test did not show statistically significant difference for the rest competencies in this cluster, there were, however, small and medium-sized effects between the two groups. The Cohen's d showed inside sector collaboration, joint decision-making and consensus building, facilitation, and inclusive perception on achievement had small-sized effects between multi-stakeholder partnership practitioners and corporate practitioners. In addition, cross-sector collaboration and information sharing did indicate medium-sized effects between the two groups.

Fewer multi-stakeholder partnership practitioners demonstrated inside sector collaboration (M = 0.67, 0.49) than did corporate practitioners (M = 0.79, 0.43). This difference, 0.12, was not statistically significant t (24) = -0.66; however, it does represent a small-sized effect, d = -0.28, which indicates there was a small practical difference between two groups.

More multi-stakeholder partnership practitioners demonstrated information sharing (M = 0.75, SD = 0.452) than did corporate practitioners (M = 0.43, SD = 0.514). This difference, 0.32, was not statistically significant t (24) = 1.680; however, it does represent a medium-sized effect, d = 0.623. This indicates that if a sustainability practitioner manages the implementation of a community sustainability plan, the appearance of having the information sharing competency will be increased by 0.623 standard deviations. 73% of the multi-stakeholder partnership practitioners demonstrated information sharing, which is above the average number of multi-stakeholder partnership practitioners who demonstrated this competency.

More multi-stakeholder partnership practitioners demonstrated joint decision-making and consensus building (M= 0.92, SD = 0.29) than did corporate practitioners (M = 0.64, SD

= 0.50). This difference, 0.28, was not significant t (24) = 0.11; however, it does represent a medium-sized effect, d = 0.56. This indicates that if a sustainability practitioner manages the implementation of a community sustainability plan, the appearance of having the joint decision-making competency will be increased by 0.56 standard deviations. 69% of the corporate practitioners demonstrated joint decision-making, which is lower the average number of multi-stakeholder partnership practitioners who demonstrated this competency.

Similarly, fewer multi-stakeholder partnership practitioners demonstrated conflict resolution (M = 0.25, SD = 0.452) than did corporate practitioners (M = 0.29, SD = 0.469). This difference, 0.04, was not statistically significant t (24) = -0.197; however, it does represent a very small-sized effect, d = -0.085. There was a small practical difference between two groups.

More multi-stakeholder partnership practitioners demonstrated facilitation (M = 0.50, SD = 0.522) than did corporate practitioners (M = 0.36, SD = 0.497). This difference, 0.14, was not statistically significant t (24) = 0.714; however, it does represent a small-sized effect, d = 0.282. This indicates there was a small practical difference between two groups of sustainability practitioners.

Moreover, fewer multi-stakeholder partnership practitioners demonstrated inclusive perceptions of achievement (M = 0.83, SD = 0.389) than did corporate practitioners (M = 0.93, SD = 0.267). This difference, 0.1, was not statistically significant t (24) = -0.736; however, it does represent a medium-sized effect, d = -0.375. This indicates that if a sustainability practitioner manages the implementation of a community sustainability plan with a multi-stakeholder partnership, the appearance of having this competency will be reduced by 0.375 standard deviations. 66% of the corporate practitioners demonstrated inclusive perceptions of achievement, which is above the average number of multi-stakeholder partnership practitioners who demonstrated this competency.

4.4.7 Team Leadership Cluster

Table 27 presents the results of independent sample t-tests for all four team leadership competencies, between the multi-stakeholder partnership practitioners who managed the implementations of community-wide sustainability plans, and the corporate practitioners who managed the corporate-level community sustainability plans. Results include means and standard deviations of each group for every competency, and t values and Cohen's d for each competency. The percentages of each competency in team leadership cluster and detailed explanations can be found in Appendix O.

Table 27. *Independent Sample T-test Results for Team Leadership Cluster Between Corporate Practitioner and Multi-stakeholder Partnership Practitioner Groups*

	Corporate practitioners		Multi-stakeholder partnership practitioners			
Competencies	M	SD	M	SD	t	Cohen's d[a]
Team managing	.93	.27	.75	.45	-1.25	-.67
Boundary spanning	.57	.51	.67	.49	.48	.20
Leadership sharing	.50	.52	.42	.52	-.41	-.15
Coaching and guidance providing	.43	.51	.33	.49	-.48	-.20

[a] See Appendix H for interpretation graphs of effect sizes (Cohen's d).

In this cluster, there was no statistically significant difference identified by the independent sample t-test. However, there was a medium-sized effect in the team managing competency between the two groups of sustainability managers. In addition, the other three competencies, boundary spanning, leadership sharing, and coaching and guidance providing, indicated there were small-sized effects between the two groups.

Specifically, fewer multi-stakeholder partnership practitioners demonstrated team

managing (M = 0.75, SD = 0.45) than did corporate practitioners (M = 0.93, SD = 0.27). This difference, 0.18, was not statistically significant t (24) = -1.25; however, it does represent a medium-sized effect, d = -0.67. This means that if a sustainability practitioner manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having the team managing competency will be reduced by 0.674 standard deviations. 76% of the corporate practitioners demonstrated team managing, which is above the average number of multi-stakeholder partnership practitioners who demonstrated this competency.

More multi-stakeholder partnership practitioners demonstrated boundary spanning (M = 0.67, SD = 0.49) than did corporate practitioners (M = 0.57, SD = 0.51). This difference, 0.10, was not statistically significant t (24) = 0.48; however, it does represent a small-sized effect, d = 0.20, which indicates there was a small practical difference between two. Moreover, fewer multi-stakeholder partnership practitioners demonstrated leadership sharing (M = 0.42, SD = 0.52) than did corporate practitioners (M = 0.50, SD = 0.52). This difference, 0.08, was not statistically significant t (24) = -0.41; however, it does represent a small-sized effect, d = -0.15. There was a small practical difference between two groups. Fewer multi-stakeholder partnership practitioners demonstrated coaching and guidance providing (M = 0.33, SD = 0.49) than did corporate practitioners (M = 0.43, SD = 0.51). This difference, 0.1, was not statistically significant t (24) = -0.48; however, it does represent a small-sized effect, d = -0.20. These imply there are a small practical difference between two groups on these competencies.

4.4.8 Engagement and Relationship Management Cluster

Table 28 presents the results of independent sample t-tests for all five engagement and relationship management competencies, between the sustainability managers who managed the implementations of community-wide sustainability plans with multi-stakeholder partnerships, and the sustainability managers who managed the corporate-

level sustainability plans without a multi-stakeholder partnership. Results include means and standard deviations of each group for every competency, and t values and Cohen's d for each competency. The percentages of each competency in engagement cluster and detailed explanations can be found in Appendix P.

Table 28. *Independent Sample T-test Results for Engagement and Relationship Management Cluster Between Corporate Practitioner and Multi-stakeholder Partnership Practitioner Groups*

	Corporate practitioners		Multi-stakeholder partnership practitioners			
Competencies	M	SD	M	SD	t	Cohen's d[a]
Trust building	.29	.47	.17	.39	-.70	-.26
Relationship building	.86	.36	.58	.52	-1.58	-.77
Citizen outreach	.71	.47	1.00	.00	2.11*	.62
External stakeholder engagement	0	0	.67	.24	5.08*	N/A
Internal stakeholder - engagement	.86	.36	.75	.45	-.67	-.30

* $p<0.05$

[a] See Appendix H for interpretation graphs of effect sizes (Cohen's d).

The independent t-test indicates there were statistically significant differences between two groups of sustainability practitioners on citizen outreach and external stakeholder engagement. More multi-stakeholder partnership practitioners demonstrated these two competencies (M = 1.00, SD = 0.00; M = 0.67, SD = 0.24) than did corporate practitioners (M = 0.71, SD = 0.47; M = 0, SD = 0). This indicates that citizen outreach and external stakeholder engagement are more frequently discussed by sustainability practitioners who manage the implementation of community sustainability plans with a multi-stakeholder partnership than by practitioners who manage the implementations

without a multi-stakeholder partnership.

Fewer multi-stakeholder partnership practitioners demonstrated trust building (M = 0.17, SD = 0.39) than did corporate practitioners (M = 0.29, SD = 0.47). This difference, 0.12, was not significant t (24) = -0.70; however, it does represent a small-sized effect, d = -0.26. This effect implies that if a sustainability practitioner manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having the trust building competency will be reduced by 0.26 standard deviations. 62% of the multi-stakeholder partnership practitioners demonstrated trust building, which is below the number of corporate practitioners who demonstrated this competency.

Fewer multi-stakeholder partnership practitioners demonstrated relationship building (M = 0.58, SD = 0.52) than did corporate practitioners (M = 0.86, SD = 0.36). This difference, 0.28, was not significant t (24) = -1.58; however, it does represent a large-sized effect, d = -0.77. This effect implies that if a sustainability practitioner manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having the relationship building competency will be reduced by 0.77 standard deviations. 79% of the corporate practitioners demonstrated relationship building, which is above the number of multi-stakeholder partnership practitioners who demonstrated this competency.

Fewer multi-stakeholder partnership practitioners demonstrated internal stakeholder engagement (M = 0.75, SD = 0.45) than did corporate practitioners (M = 0.86, SD = 0.36). This difference, 0.11, was not significant t (24) = -0.76; however, it does represent a small-sized effect, d = 0.30. This effect implies that if a sustainability practitioner manages the community sustainability plan with a multi-stakeholder partnership, the appearance of having the internal stakeholder engagement competency will be increased by 0.30 standard deviations. 62% of the corporate practitioners demonstrated internal stakeholder engagement, which is above the number of multi-stakeholder partnership

practitioners who demonstrated this competency.

4.4.9 Impact and Influence Cluster

Table 28 presents the results of independent sample t-tests for impact and influence cluster, between the multi-stakeholder partnership practitioners and the corporate practitioners. Results include means and standard deviations of each group for every competency, and t values and Cohen's d for each competency. The percentage of the competency in impact and influence cluster and detailed explanation can be found in Appendix Q.

Table 29. *Independent Sample T-test Results for Impact and Influence Cluster Between Corporate Practitioner and Multi-stakeholder Partnership Practitioner Groups*

	Corporate practitioners		Multi-stakeholder partnership practitioners			
Competencies	M	SD	M	SD	t	Cohen's d[a]
Impact and influence	.79	.43	.83	.39	.30	.094

[a] See Appendix H for interpretation graphs of effect sizes (Cohen's d).

The independent sample t-test indicated there was no statistically significant difference in this cluster. More multi-stakeholder partnership practitioners demonstrated impact and influence (M= 0.83, SD = 0.389) than did corporate practitioners (M = 0.79, SD = 0.426). This difference, 0.04, was not statistically significant t (24) = 0.296; however, it does represent a very small-sized effect, d= 0.094. This implies that there is a small practical difference between two groups.

4.4.10 Section Summary

There are significant differences between multi-stakeholder partnership practitioners and corporate practitioners on five competencies, active listening, human resources management, cross-sector collaboration, citizen outreach, and external stakeholder engagement. This indicates that these three competencies are necessary for both groups of sustainability managers. There is no effect between the two groups of sustainability managers on consultation and professional knowledge, which implies that these two competencies are equally critical to both groups. There are effects between the two groups on the rest of the forty-four competencies. This indicates that, although there is no statistically significant difference between the two groups of sustainability managers, but practical significant differences do exist.

4.5 Chapter Summary

The study identified nine competency clusters and forty-nine competencies in the first part of the study. In the second part of the study, there were significant differences identified between multi-stakeholder partnership practitioners and corporate practitioners, including actively listening, human resources management, cross-sector collaboration, citizen outreach, and external stakeholder engagement. The rest of the competencies represented small-, medium-, or large-sized effects. Moreover, consultation and professional knowledge of subject areas showed neither a statistically significant nor a practical significant difference. These results are discussed and interpreted in the next chapter.

Chapter 5: Discussion

This chapter discusses and interprets the study results presented in the previous section. The discussion is separated into two parts based on the research questions and corresponding results. The first part discusses the outcomes from the qualitative analysis, the leadership competencies that were identified in the study, answering the first set of research questions. The second part of this chapter discusses the outcomes from the independent sample t-tests answering the second set of research questions, and whether there were any differences in competencies of multi-stakeholder partnership practitioners and corporate practitioners in managing the implementation of their sustainability plans.

5.1 Research Question 1

Part 1: What are the essential competencies that help practitioners effectively manage sustainability plan implementation?

In this research, competencies include both of soft skills (characteristics) that are hard to train, but important to work performance, and hard skills that are easy to train and learn (Hay Group, 2003; Spencer & Spencer, 1993). In this study, competency clusters are comprised of several relevant competencies. Participants were separated into two groups: 1) multi-stakeholder practitioners who are sustainability managers who implement their sustainability plans through multi-stakeholder partnerships; and 2) corporate practitioners who do not implement their plans through multi-stakeholder partnerships.

The table below summarizes the competency clusters and relevant competencies that were identified in the study, including competencies identified in the literature and new competencies that were identified by the researcher. The symbol “Y” (Yes) indicates the competencies identified in the existing literature or were new findings that were identified through the research process. Citations are the sources that discussed the

associated competency. A Competency Dictionary by Spencer and Spencer (1993) elaborates on the twenty-one most often used competencies in the workplace. It has been used as the main reference in this study.

Table 30. *Summary of Competencies Found in the Literature and This Research.*

Competency clusters	**Competencies**	**New findings**	**Spencer & Spencer (1993)**	**Collaboration Literature**	**Sustainability Literature**
Communication	Active listening		Y	Y	
	Audience adaptation			Y	Y
	Knowledge translation			Y	Y
	Knowledge mobilization	Y			
	Interpersonal communication		Y	Y	Y
Project management	Partnership management	Y			
	Financial knowledge and fundraising	Y			
	Political knowledge	Y			
	Project identification and development	Y			
	Project coordination and implementation	Y			
	Report preparation	Y			
	Human resources management	Y			
	Time			Y	

	management				
Individual attributes	Emotional intelligence			Y	
	Empathy		Y		
	Humility	Y			
	Flexibility and adaptability		Y		
	Open-mindedness		Y	Y	Y
	Self-reflection	Y			
	Persistence			Y	
Knowledge management	Information seeking		Y		
	Information integration		Y		
	Consultation	Y			
	Professional knowledge of subject areas		Y		
Problem-solving	Analytical thinking		Y		
	Critical thinking			Y	Y
	Design thinking	Y			
	Strategic thinking			Y	Y
	System thinking				Y
	Visionary thinking				Y
Teamwork and cooperation	Cross-sector collaboration			Y	
	Inside sector collaboration		Y		
	Information sharing			Y	
	Joint decision-making and consensus building			Y	

	Conflict resolution			Y	
	Facilitation			Y	
	Inclusive perception on achievement		Y		
Team leadership	Team managing		Y		
	Boundary spanning			Y	
	Leadership sharing	Y			
	Coaching and guidance providing	Y			
Engagement and relationship management	Relationship building		Y		Y
	Trust building				Y
	Citizen outreach				Y
	External stakeholder engagement			Y	
	Internal stakeholder engagement	Y			
Impact and influence	Impact and influence		Y		

As Table 30 shows, nine competency clusters and 49 competencies were identified in the study. Moreover, 15 out of the 49 competencies are new findings in this research; 14 competencies were identified in Spencer and Spencer (1993); 18 competencies were identified in the cross-sector partnership literature; and 11 competencies were identified in the sustainability literature. Figure 3 presents the percentage of numbers of sustainability managers who demonstrated the competencies for each competency cluster.

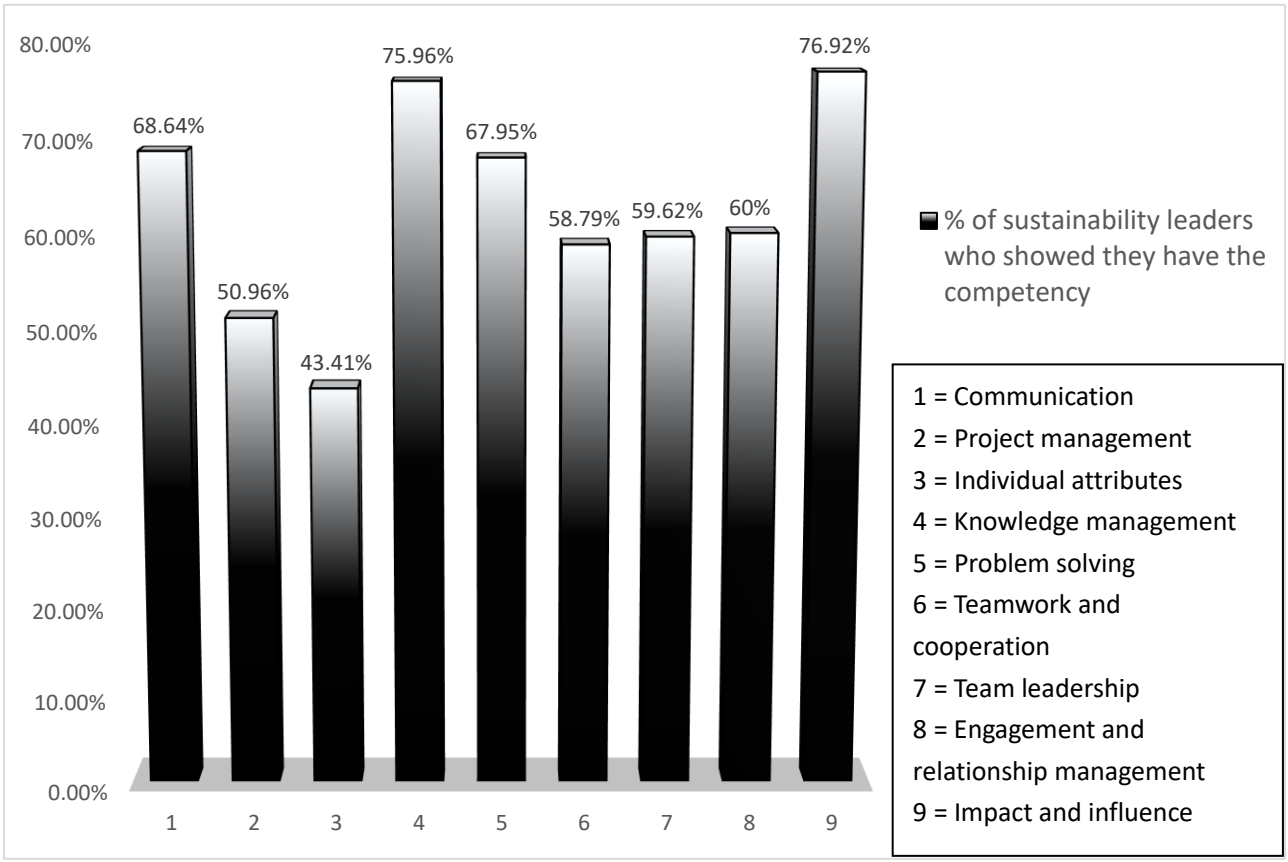

Figure 3. Percentages of Sustainability Managers Who Demonstrated the Competencies of Each Competency Cluster

The percentages show in the Figure 3 were calculated by the number of sustainability practitioners in both groups demonstrated the competencies of each competency cluster divided the total number of sustainability practitioners who participated the study (26 sustainability practitioners). The knowledge management and impact and influence are the most common competency clusters for both groups of sustainability managers. Communication and problem-solving clusters are the second most common competencies for managing sustainability plans. This implies that both groups of sustainability practitioners discussed and showed they have these competencies when they were managing the implementation of their sustainability plans. By contrast, the competencies that were least discussed by the sustainability managers were individual attributes, project management, and teamwork and cooperation. In other words, these competencies were

only discussed by some of the sustainability practitioners. This result implies that these competencies might create the differences between multi-stakeholder partnership practitioners and corporate practitioners.

5.1.1 Communication Cluster

Communication has been identified as one of the most important clusters in the literature (Emerson & Smutko, 2011; Getha-Taylor, 2008; Huxham & Vangen, 2000; Williams, 2002). In the collaboration literature, effective communication is believed to be a two-way process that aligns and coordinates partners' actions, builds consensus, and solves problems (Crosby & Bryson, 2005; Williams, 2002). This requires practitioners have the ability to listen actively, to translate technical language into common language, and to present information accurately and clearly (Crosby & Bryson, 2005; Emerson & Smutko, 2011; Linden, 2010; Williams, 2002). In the sustainability literature, effective communication is a way to introduce the meaning and benefits of sustainability and to incorporate sustainability into companies' visions and missions. This requires practitioners have the ability to use positive words and to translate complex ideas into easily understood ideas (Quinn & Dalton, 2009).

Most of the literature identify the communication as one competency without further classification. In this research, the communication cluster is comprised of five competencies: active listening, audience adaptation, knowledge mobilization, knowledge translation, and interpersonal communication. There are some similarities and overlap among audience adaptation, knowledge translation, and knowledge mobilization. All of the three competencies are aim to communicate message with other; however, the emphasis is a little different. Specifically, audience adaptation emphasizes the audiences' needs and interests, knowledge translation emphasizes the translation from complex and technical language into easy understand and common language, and the knowledge

mobilization emphasize a broader and more complete communication strategy.

The interpersonal communication competency was identified as the most necessary competency in the communication cluster; 25 out of 26 sustainability managers showed they verbally communicated with people accurately. Effective and accurate interpersonal communication helps the partnership and work to be more effective (Bingham et al., 2008; Crosby & Bryson, 2005). Accurate interpersonal communication not only helps these managers to work effectively, but also helps them to introduce and present their plans effectively through different channels, such as through media and interviews. Moreover, knowledge translation and audience adaptation were identified as the second and third most necessary competencies for sustainability managers to manage the implementations of their sustainability plans. One of the major tasks of sustainability managers is to present sustainability plans in various situations and with various type of audiences. To effectively present their sustainability plans and projects with people of different backgrounds, these managers must be able to deliver information that corresponds to audience interests and to translate technical and professional language into common and easily understood language.

5.1.2 Project Management Cluster

The project management cluster "enables organizations to integrate, plan, and control schedule-intensive and one-of-a-kind endeavours to improve overall organizational performance" (Pant & Baroudi, 2008). This cluster emerged from the coding process based on the contents of the interviews. The major reason that the project management competency cluster surfaced was due to the nature of the sustainability plan implementations and the interview questions asked in the interview. Firstly, most of the sustainability plans are implemented by various projects which require sustainability practitioners have project management competencies. The other reason is when the

interviewees were asked to describe the successful/challenging situations, they often described the specific projects which have good outcome or have challenges in the implementations.

One of the major components of the community-wide sustainability plan implementation process is managing and implementing diverse projects that are affiliated with their sustainability plans. These projects include: energy saving, LED lighting, and water treatment. For this reason, the project management cluster is identified as one of the most critical competency clusters for managing and implementing sustainability plans.

The most common competency identified in competency cluster is financial knowledge and fundraising, followed by project identification and project implementation. Both types of sustainability plans have limited funding; therefore, sustainability managers must search and apply for funding and grants. Also, sustainability managers need to know how to manage project budgets to be cost-effective. Another concern that people have are the economic benefits the projects can generate; hence, sustainability managers need to have the financial knowledge to explain this information to their major stakeholders and colleagues. Project identification and implementation are two major concerns of project management, and not surprisingly, these two competencies were identified as the most common ones.

5.1.3 Individual Attributes Cluster

During the interview, the researcher noticed that individual attributes also play a vital role in the sustainability plans' implementation. Individual attributes are, namely, the individual characteristics managers possess (O'Leary, Gerard, & Choi, 2012). There are seven traits/competencies that comprise individual attributes, including emotional intelligence, empathy, humility, flexibility and adaptability, open-mindedness, self-reflection, and persistence. Flexibility and adaptability and open-mindedness were

identified in the literature as the main leadership competencies for both general managers and cross-sector partnership leaders (O'Leary et al., 2012; Spencer & Spencer, 1993).

In the research presented here, the most common competency identified under individual attributes is empathy, which allows sustainability manager to put themselves in others' shoes. In the implementation of sustainability plans, the practitioners often worked with groups of people who had different interests. Being empathetic allows practitioners to understand other people's perspectives and reduce the boundaries among members and stakeholders, creating a friendly workplace atmosphere and boosting work efficiency. The least common competency is flexibility and adaptability, a competency that necessitates sustainability practitioners have the ability to adapt to various changes. Few managers did demonstrate this competency in the study, which might be due to their being at their same job for a long time. In literature, flexibility and adaptability competency is considered as the ability to be flexible and adaptable with regard to people and relationship. However, in this study, while interviewees were talking about flexibility and adaptability, they were more focus on the ability to be flexible and adaptable in various situations and positions. The meanings of the flexibility and adaptability in literature and in practices are different, which also might be the reason of this unexpected results.

5.1.4 Knowledge Management Cluster

"Knowledge Management is the process of capturing, distributing, and using knowledge" (Davenport & Prusak, 1998, p. 107). Sustainability leaders tend to have knowledge management cluster, which include searching for information, integrating information, consulting with experts and community members, and having occupational knowledge. This knowledge could be sustainability-related knowledge, project management and implementation knowledge, or professional and technical knowledge on the environment.

The most common competencies identified under the knowledge management cluster are

consultation and professional knowledge of subject areas. sustainability plans often cover multiple types of projects, such as water treatment, energy saving, and green buildings. The implementations of these projects require sustainability practitioners have professional knowledge of at least one field. Sustainability managers in this study showed that their professional background, such as engineering background, planning background, or environmental science, helped them start their work. However, it is hard for sustainability practitioners to have professional knowledge in all fields; therefore, these managers often consulted experts to help them analyze problems, identify issues, and find optimal solutions. In this way, most of the sustainability managers demonstrated this competency and that they had professional knowledge of the subject areas.

5.1.5 Problem-Solving Cluster

Problem-solving is "the act of defining a problem; determining the cause of the problem, and identifying, prioritizing, selecting alternatives for and implementing a solution" (Boutros & Cardella, 2016, p. 122)**.** Most of the problem-solving competencies are identified in cross-sector partnership literature and sustainability literature. Nevertheless, design thinking is the new finding identified in this research.

Sustainability practitioners have various problem-solving competencies, including using analytical thinking to break down complex problems, using critical thinking to evaluate potential solutions, using design thinking to test their decisions, using strategic thinking to develop strategic implementation plans, using system thinking to understand LED light projects, and using visionary thinking to set short-term and long-term goals.

With the exception of design thinking, the problem-solving competencies which are necessary for sustainability leaders in the management of sustainability plan implementation. Sustainability leaders are always faced with problems and challenges in the implementation of sustainability plans, such as limited time and a limited budget for

project implementation, technical difficulties on plant placements, or inefficient work. When sustainability leaders are faced with such challenges, they need to have the ability to break down these complex issues into pieces, identify the critical components of the problems, create strategic solutions, evaluate and test potential solutions, and choose the best solution in helping them achieve their long-term goals. Therefore, most of these problem-solving competencies are critical and important.

5.1.6 Teamwork and Cooperation Cluster

"Teamwork and Cooperation implies a genuine intention to work cooperatively with others, to be part of a team, to work together as opposed to working separately or competitively" (Spencer & Spencer, 1993, p. 61). It is one of the most important competencies in the workplace. The researcher found that the Spencer and Spencer's (1993) dictionary only provides a broad and general classification of this competency. The individual can play any role in the team; he/she does not have to be the leader in the team; he/she also can be a team member or as a facilitator to facilitate the team, etc. (Spencer & Spencer, 1993).

In cross-sector social leadership competency literature, collaborative awareness is recognized as the main competency (Crosby & Bryson, 2005; Emerson & Smutko, 2011; Williams, 2002). Leaders need to be familiar with and be ready to work with people from other organizations. Hence, the researcher believes teamwork and cooperation plays an important role in the sustainability plan implementation process. Wanting to have a more detailed understanding of the competence, the researcher broke this competency down into eight sub-competencies, which include: cross-sector collaboration, inside sector collaboration, consensus building, information sharing, joint decision-making, conflict resolution, facilitation, and inclusive perception on achievement.

The research findings in this thesis indicate that the most common competency that the

sustainability leaders demonstrated is an inclusive perception of achievement, which implies that most of the sustainability leaders saw their work as teamwork outcomes. They often "involve(d) others in extraordinary efforts" (Spencer & Spencer, 1993, p. 62). This is due to the nature of the implementation of a sustainability plan, which involves a group of people working together. The next two of the most common competencies are cross-sector and inside sector collaborations. In the implementation of both types of sustainability plans, sustainability leaders did collaborate with colleagues from municipalities, but also collaborated with people from other sectors for consulting or cooperating purposes. Surprisingly, conflict resolution is identified as the least common competency in the teamwork and corporation competency cluster. This might be due to the friendly collaboration environment and that most of the team members had similar interests.

5.1.7 Team Leadership Cluster

As the previous section shows, most of the sustainability plans and projects are implemented by teams, and most of the sustainability practitioners in this research are the team leaders. The researcher separated this team leadership cluster into five sections: traditional team leader, boundary spanner, sharing of leadership, team building competency, and coaching and guidance providing. The team managing competency is identified in the general leadership competencies literature. Furthermore, boundary spanner and sharing of leadership are identified in the cross-sector partnership literature as two types of the leadership competencies.

Team managing is the most common competency identified in the team leadership competency cluster. Both multi-stakeholder practitioners and corporate practitioners worked as traditional leaders and demonstrated the ability to manage the team's dynamics, and to oversee the team and project performance. The second most common competency is boundary spanning. Sustainability leaders demonstrated they worked as

boundary spanners to bring together people with the same interests. For example, these leaders think of themselves as the bridge between people who have the same interests on sustainability plans. This could be to connect people from the same sector or to connect people from different sectors. Surprisingly, the least common competency that sustainability leaders have is coaching and guidance providing. This might be part of the plan that implementations are done by a group of people and that leaders do not want to dominate the team, so they tend to work as collaborative team members.

5.1.8 Engagement and Relationship Management Cluster

Engagement is "the interaction between employers, vocational rehabilitation (VR), and other workforce development and education organizations that results in measurable improvement in desired outcomes for both parties" (Waugh & Miller, n.d., p. 1). Engagement requires creating potential long-term opportunities for problem-solving and project development for all parties involved in the engagement (Waugh & Miller, n.d.). In sustainability plan implementations, sustainability leaders often engage with communities and stakeholders to share information on sustainability and get help from stakeholders. To effectively engage with others, sustainability leaders also need to be able to build the relation and trust with others.

Citizen outreach the most common competency identified in this study. Sustainability leaders from both groups demonstrated they had engaged with communities while implementing the plans. The aims of citizen outreach include introducing sustainability and sustainability plans to the community, attracting community's participation on plan implementations, consulting community's ideas and opinions on their sustainability plan related projects, and gathering community feedback. Relationship building and internal stakeholder engagement are also common competencies in the engagement competency cluster. The sustainability in this study believed both formal and informal networks could benefit their work. For example, such relationships can help sustainability leaders gather

information on their community's needs, obtain advices for their sustainability plans and strategies, and ask help in solving critical problems. Internal stakeholder engagement often occurs in municipalities. Engagement can help sustainability leaders better understand the effects of political issues of their plan's implementation, and to identify the departments that can support plan implementation.

In this study, relationship building includes build relationships at both individual and organization level due to the limited information on the competency details. It could be separated into two competencies based on the types of objects, includes relationship building with individuals and relationship building with organizations. At the same time, it also can be separated into two competencies based on the way of the relationship building, including relationship building through formal ways and relationship building through informal ways.

5.1.9 Impact and Influence Cluster

Impact and influence "expresses an intention to persuade, convince, influence, or impress others, in order to get them to support the speaker's agenda; or the desire to have a specific impact or effect on others" (Spencer & Spencer, 1993, p. 44). This competency was also identified by the Spencer & Spencer's (1993) work while they were identifying the leadership competencies for high performance leaders. As a relatively new idea, one of the main purposes of sustainability and sustainability plans is to change people's behaviors and encourage them towards a more sustainable and environment-friendly lifestyle. This behavior change goal can be achieved by "actions taken to influence others" and through "breadth of influence, understanding, or network" (Spencer & Spencer, 1993, p. 45). There were 20 sustainability managers demonstrated this competency.

5.1.10 Summary

This research identified 49 competencies based on existing literature and data analysis. There were 14 new competencies that were identified from this research, including knowledge mobilization, financial knowledge and fundraising, political knowledge, humility, self-reflection, persistence, consultation, design thinking, system thinking, coaching and guidance providing, trust building, etc.

5.2 Research Question 2

Part 2: Are there any different competencies required to manage the implementation of sustainability plans with and without partners?

Five competencies were identified, presenting a significant difference between multi-stakeholder partnership practitioners and corporate practitioners: active listening, human resources management, cross-sector collaboration, citizen outreach, and external stakeholder engagement.

The independent sample t-test showed that active listening is needed more for multi-stakeholder partnership practitioners than for corporate practitioners, which matches the large difference in the percentages between the two groups shown in the bar graph. Active listening is one of the critical factors required in having effective communication in a partnership (Emerson & Smutko, 2011; Williams, 2002). It involves several abilities, such as the ability to paraphrase others' ideas and to ask open-ended questions (Bingham, Sandfort, & O'Leary, 2008; Linden, 2010; Spencer & Spencer, 1993). There is a significant difference between multi-stakeholder partnership practitioners and corporate practitioners on the active listening competency, which suggests active listening is more important for multi-stakeholder partnership practitioners than for corporate practitioners. Sustainability managers who manage community-wide community sustainability plans

discussed the necessity of this competency to understand communities' needs, thoughts, and suggestions on projects and plans. Similarly, there are statistically significant difference between two groups on cross-sector collaboration and external stakeholder engagement. Multi-stakeholder partnership practitioners showed these two competencies are more important than the other group did. These differences can on account to the multi-stakeholder partnership in the community-wide plan implementation. The cross-sector partnership requires engage and collaborate with other two sectors. At the same time, corporate practitioners demonstrated human resources management is needed in the project management cluster than multi-stakeholder partnership practitioners did.

There was a significant difference between the two groups of sustainability managers regarding human resources management. The number of corporate practitioners who demonstrated human resources management was more than the number of multi-stakeholder partnership practitioners. This finding implies that human resource management is more important for corporate practitioners than for multi-stakeholder partnership practitioners. Human resources management involves the ability to manage the project and group dynamics, including the hiring of contractors to help finish the work and assigning contracts. Local municipalities tend to have limited resources for implementing a sustainability plan; therefore, they need to hire outside contractors to help them, which is one of the reasons that human resource management is more important for corporate practitioners than for multi-stakeholder partnership practitioners. Another reason is that some of the corporate practitioners worked as department managers responsible for the personnel working in the department as well. This also increased the number of corporate practitioners who demonstrated this competency.

The third competency showing a statistically significant difference was cross-sector collaboration. One of the major competency identified in the literature for the multi-stakeholder partnership practitioners is cross-sector collaboration competencies. This

difference happens by reason of the different plan implementation structures of two types of plans. Based on the definitions of community sustainability plans and corporate sustainability plans, community-wide plans need to be implemented through partnerships while corporate plans are implemented without a partnership. Therefore, this competency was not expected to appear for corporate practitioners. Meanwhile, the number of corporate practitioners who demonstrated this cross-sector collaboration was supposed to be zero. However, the qualitative and quantitative show a different result. This is because, in the interviews, some corporate practitioners demonstrated this competency while they are working with local utility companies. This explains why there are few numbers of the corporate practitioners who demonstrated cross-sector collaboration competency. Also, this shows the difference between theoretical expectation and practical performances.

The fourth competency showing a significant difference between the two groups of sustainability practitioners was citizen outreach. Some sustainability practitioners in this study thought that a community-wide plan is for the entire community and that it belongs to the community. Their ability to outreach with community members helped them listen and understand the interests, needs, and thoughts of the community members are necessary. For this reason, the sustainability practitioners believed citizen outreach to be one of the major components of the plan implementation process, and an essential competency for managing community-wide sustainability plans. Likewise, corporate practitioners also demonstrated citizen outreach ability but the number of practitioners demonstrated this competency is less than multi-stakeholder partnership practitioners. This is because of corporate practitioners were more focus on moving the municipality toward sustainability than moving the whole community. Citizen outreach is aiming to explain their actions, such as changing street lights into LED lights.

The fifth competency showing a statistically significant difference between two groups of practitioners was external stakeholder engagement. The cross-sector partnership literature

has mentioned that stakeholder engagement is important for cross-sector partnerships, however, it does not separate it into external stakeholder engagement and internal stakeholder engagement. In the sustainability plans implementation, multi-stakeholder partnership practitioners tend to engage with various stakeholder in private and civil society sectors. By comparison, the corporate practitioners work without cross-sector partnership did not show the intention to engage with external stakeholders. Unlike the cross-sector collaboration competency, the result of external stakeholder engagement was same as expected. As previous sections show, by definition, multi-stakeholder partnership practitioners demonstrated external stakeholder engagement in order to partner with other sectors to implement community sustainability plan. Similarly, corporate practitioners were not expected to demonstrate this competency. Nevertheless, a challenge on the needs of comparing the difference between two groups of sustainability leaders on this competency came out while the researcher doing the quantitative analysis. In this research, the researcher did compare the two groups on this competency to prove and support the findings in the literature which conclude stakeholder engagement is one of the major competencies in the cross-sector partnership (Crews, 2010; Egri & Herman, 2000; Hind et al., 2009; Lacy, Haines, & Hayward, 2012; Quinn & Dalton, 2009; Sheppard et al., 2011).

Chapter 6: Conclusion

6.1 Implications for Researchers

This research provides two implications for researchers. First, it provides a general identification and brief summary of competencies that sustainability practitioners have for managing and implementing community sustainability plans, including both community-level and corporate-level plans. This research provides a foundation for researchers who are studying leadership competencies in the sustainability field. This study highlights, in particular, how these competencies helped sustainability managers implement their community sustainability plans.

Second, this research identifies different competencies that sustainability managers have in two groups of sustainability managers: managers who manage community-level community sustainability plans with multi-stakeholder partnerships, and managers who manage corporate-level community sustainability plans without a multi-stakeholder partnership. Furthermore, this study highlights the need for studies and comparisons between two groups of sustainability managers. These implications should enable a more systematic study of leadership competencies in the development of sustainability field, especially in sustainable community and /or cross-sector partnerships.

6.2 Implications for Practitioners

This research provides three implications for practitioners. First, it provides insights for training programs to develop training courses. One of the main goals of this research is to provide insights for training originations and programs of identifying the main competencies that sustainability managers might want to gain from related training courses. Although these competencies are hard to develop in the workplaces (Spencer & Spencer, 1993), the hope is that such training programs can provide some insights and

guidance for sustainability practitioners.

Second, this research provides insights for human resource staff to look for specific competencies when they are hiring new employees and can be used as a reference or guide for HR when they are hiring new employees for sustainability-related positions. Some of these competencies are hard to develop in the workplace (Spencer & Spencer, 1993), but some people do have these competencies when they are entering the job market or entering sustainability fields. Also, this research can be used as a reference when local governments are preparing their job descriptions.

Third, this research provides insights for managers while they are assigning work to their employees. Company or project managers could use this research as a reference when they are assigning work to more effectively achieve their project goals. For example, managers could assign personnel who are skilled at audience adaptation, knowledge translation, and verbal communication to do public speaking and share new information with people from various backgrounds.

6.3 Limitations

This research has several limitations, such as limited literature, limited number of participants, limited diversity of participants, limited time, and a limited number of coders.

The first limitation is the gap in the literature which create difficulties and confounding in the qualitative coding stage. The first difficulty is about the distinctions on collaboration competency. In the cross-sector partnership literature, the literature do mention the collaboration competency as one of the major competencies, however, there is no identification and distinction between internal collaboration and external collaboration. The second difficulty is on the distinction on engagement competency cluster. The

researcher believes there is a difference among citizen engagement, internal stakeholder engagement, and external stakeholder engagement. But it is hard for the researcher to find the explicit definition and distinction for the three competency. The last difficulty is the various ways of the naming and defining the same competency by different people. Specifically, the same competency could be named in different ways by different people in different research filed or the same name could mean different competencies. This also create confounding and difficulties in the coding process.

The second limitation is the number of participants. 26 sustainability managers who participated in the research, including 12 who manage and implement community sustainability plans with multi-stakeholder partnerships, and 14 who manage and implement corporate-level community sustainability plans without a multi-stakeholder partnership, across Canada. Had more sustainability practitioners participated in the research, this could have broadened the generalization of the study. The next limitation is the limited diversity of participants. Most of the interviewees are from local municipalities; one sustainability leader is from a local NGO. A higher diversity of participants could also have broadened the generalization of the study.

The fourth limitation is time. Each interview took about 45 minutes, allowing the sustainability managers to describe two events that were successful or challenging. Had the sustainability managers more time to do the interview, they might have covered more details or more events demonstrating perhaps more competencies.

The last limitation is the coder. Although the research used Spencer and Spencer (1993) as the reference and coding guide, the coding is a subjective analysis method. The coder's knowledge and personal background may have affected the coding process and coding results. Multi-coders might increase the validity of the coding.

6.4 Future Research

There are several potential areas for future research. The first direction of future research could be build a comprehensive and detail oriented analysis of differences and overlaps of the competencies between cross-sector partnership practitioners and inside sector partnership practitioners. This could reduce the confounding in the research and remove the vague distinction among similar competencies.

Second, future research is necessary to build a comprehensive analysis of competencies for managing and implementing community sustainability plans with and without a multi-stakeholder partnership. This qualitative research interviewed 26 sustainability managers and provided a basis for quantitative research. One of the future research areas could increase the number of participants in the study and use quantitative research and statistical analyses to test and support the findings. At the same time, most of these 26 sustainability managers are from local municipalities in Canada; the other future research area could build a comprehensive analysis of these competencies involving sustainability managers from private sectors and civil society as well. The other option could be to use the same methodology to do the research in other countries.

As mentioned in the previous section, future research could improve the research results by increasing the interview time and the number of events that sustainability practitioners describe in the interview. A longer interview time and a greater number of events that sustainability managers describe could result in more detailed information the researcher can collect and analyze.

A last point regarding future research is involving multi-coders in the qualitative analysis step which would reduce coder's bias and increase the validity of the results.

6.5 Concluding Summary

This research involved the interviews of 26 sustainability practitioners who manage and implement community sustainability plans in Canada. The first part of this research found 49 leadership competencies that are needed for managing and implementing both community-level and corporate-level community sustainability plans. Whereas 35 competencies are found in existing literature, 14 more competencies were found during this research. The second part of this research focused on comparing the differences in the identified competencies between sustainability managers who manage community-level community sustainability plans with multi-stakeholder partnerships, and sustainability managers who manage corporate-level community sustainability plans without a multi-stakeholder partnership. The aim of this research is to help communities attract and develop the human resources necessary to meet their climate action, energy conservation, and sustainable development goals.

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Appendix A: Ethics Approval Certificate

UNIVERSITY OF WATERLOO

OFFICE OF RESEARCH ETHICS

Notification of Ethics Clearance of Application to Conduct Research with Human Participants

Faculty Supervisor: Adriane MacDonald **Department:** University of Lethbridge
Faculty Supervisor: Amelia Clarke **Department:** Environment and Business
Student Investigator: Ziqi Chai **Department:** Environment & Resource Studies

ORE File #: 22511

Project Title: Leadership Skillsets and Competencies for Managing and Implementing Sustainability Plans in Canada

☑ *Human Research Ethics Committee (HREC)* ☐ *Clinical Research Ethics Committee (CREC) is pleased to inform you the above named study has been reviewed and given ethics clearance.*

Approval to start this research is effective on the ethics clearance date which is: 10/30/2017 *(m/d/y)*

University of Waterloo Research Ethics Committees are composed in accordance with, and carry out their functions and operate in a manner consistent with, the institution's guidelines for research with human participants, the Tri-Council Policy Statement for the Ethical Conduct for Research Involving Humans (TCPS, 2nd edition), International Conference on Harmonization: Good Clinical Practice (ICH-GCP), the Ontario Personal Health Information Protection Act (PHIPA), the applicable laws and regulations of the province of Ontario. Both Committees are registered with the U.S. Department of Health and Human Services under the Federal Wide Assurance, FWA00021410, and IRB registration number IRB00002419 (HREC) and IRB00007409 (CREC).

The above named study is to be conducted in accordance with the submitted application (Form 101/101A) and the most recent approved versions of all supporting materials.

Ethics clearance for this study is valid until: 10/30/2018 *(m/d/y). Multi-year research must be renewed at least once every 12 months unless a more frequent review has otherwise been specified by the Research Ethics Committee (Form 105). Studies will only be renewed if the renewal report is received and approved before the expiry date. Failure to submit renewal reports by the expiry date will result in the investigators being notified ethics clearance has been suspended and Research Finance being notified the ethics clearance is no longer valid.*

Level of review:
☐ *Delegated review*
☐ *Full committee review meeting date:* _____ *(m/d/y)*

Signed on behalf of: ☑ *HREC Chair* ☐ *HREC Vice-Chair* ☐ *CREC Chair* ☐ *CREC Vice-Chair*

Erin Van Der Meulen

Julie Joza, Acting Chief Ethics Officer, jajoza@uwaterloo.ca, ext. 38535
Heather Root, Senior Manager, heather.root@uwaterloo.ca, ext. 30469
Karen Pieters, Manager, kpieters@uwaterloo.ca, ext. 30495
Joanna Eidse, Research Ethics Advisor, jeidse@uwaterloo.ca, ext. 37163
Laura Strathdee, Research Ethics Advisor, lstrathd@uwaterloo.ca, ext. 30321
Erin Van Der Meulen, Research Ethics Advisor, ervandermeulen@uwaterloo.ca, ext. 37046

This is an official document. Retain for your files.
You are responsible for obtaining any additional institutional approvals that might be required to complete this study.

Appendix B: Recruitment Letter

September 11th, 2017

Dear,

My name is Emma Chai and I am a Master student working under the supervision of Dr. Adriane MacDonald and Dr. Amelia Clarke in the School of Environment, Enterprise and Development at the University of Waterloo. My research project is entitled "Leadership Skillsets and Competencies for Managing and Implementing Sustainability Plans in Canada". The purpose of this research is to provide insight into the skillsets and competencies required for facilitators and leaders to implement community sustainability plans. The aim of this research is to help communities attract and develop the human resources necessary to meet their climate action and sustainable development goals.

I came across your information listed on FCM's website and your LinkedIn account, and I am contacting you because in your role as (insert interviewee title) you have a leadership role in implementing (name of plan) and thus, you are excellent fit to participate in this research project. I would like to seek your participation which entails an interview over the phone or in-person. The interview will take approximately 45 mins to complete. You will be asked to describe what you did, thought, said, and felt in successful and challenging situations during the implementation of (insert name of plan).

I would like to assure you that the study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. However, the final decision about participation is yours.

If you are interested in participating, please contact me at z5chai@uwaterloo.ca. I will provide you with further information and schedule an interview at your convenience.

Thank you for taking time to read this information and for your consideration.

Sincerely,
Emma Chai

Masters of Environmental Studies Candidate
School of Environment, Enterprise and Development
Faculty of Environment
University of Waterloo
Phone: (519)721-2134

E-mail: z5chai@uwaterloo.ca

Under the supervision of Dr. Adriane MacDonald and Dr. Amelia Clarke.

Adriane MacDonald
Faculty of Management,
University of Lethbridge
Phone: (403)317-2885
Email: adriane.macdonald@uleth.ca

Amelia Clarke
School of Environment, Enterprise and Development
University of Waterloo
Phone: (519)888-4567 ext. 38910
Email: amelia.clarke@uwaterloo.ca

Appendix C: Information Letter and Consent Forms

Information Letter

September 11th,2017

Dear (participant's name)

This letter is an invitation to consider participating in the study titled, "Leadership Skillsets and Competencies for Managing and Implementing Sustainability Plans in Canada" which I am conducting for my Master's degree in the School of Environment, Enterprise and Development at the University of Waterloo under the supervision of Professors Adriane MacDonald and Amelia Clarke. In this letter, I outline the details of this research project and what your involvement would entail should you decide to participate.

Currently, there is a gap in the research regarding the leadership competencies for implementing local sustainability plans, both with and without multi-stakeholder partnerships. The objective of this study is to address this gap and better understand requisite leadership/managerial skillsets and competencies for implementing sustainability plans, such as Climate Action Plans and Integrated Community Sustainability Plans in Canada.

Your participation in this study will involve an interview of approximately 45 minutes in length that will take place in a mutually agreed upon location or over the telephone. With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for analysis. Shortly after the interview has been completed, I will send you a copy of the transcript to give you an opportunity to confirm the accuracy of our conversation and to add or clarify any points that you wish.

Participation in this study is completely voluntary. At any time, you may decline to answer any question(s) you prefer not to answer by requesting to skip the question. . Further, you may decide to end the interview at any time without any negative consequences by advising the researcher that you would like to withdraw your participation from this study. There are no anticipated risks from participating in this study. Participation in this study may not provide any personal benefit to you, however data collected from interviews will contribute to fill the current gap in the leadership competencies and sustainable development literature.

Your participation in this study will remain confidential. Your name will not appear in any thesis or report resulting from this study, however, with your permission anonymous quotations may be used. All information that could identify you will be removed from

the data that is collected within 2 months and stored separately. We will keep identifying information for a minimum of 5 years and our study records for a minimum of 5 years. You can withdraw consent to participate and have your data destroyed by contacting us within this time period. Please note that it is not possible to withdraw consent once papers and publications have been submitted to publishers. Only those associated with this study will have access to these records which are password protected. All records will be destroyed according to University of Waterloo policy.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE #22511). If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions or if you would like additional information to assist you in reaching a decision about participation, please contact me at 519-721-2134 or by email at z5chai@uwaterloo.ca. You can also contact my supervisors, Adriane MacDonald at 403-317-2885 or email adriane.macdonald@uleth.ca and Amelia Clarke at 519-888-4567 ext. 38910 or email amelia.clarke@uwaterloo.ca.

I hope that the results of my study will provide human resources insights to those organizations and participants directly involved in the study, other organizations or individuals who are implementing sustainable community plans but not directly involved in the study, as well as to the broader research community.

I very much look forward to speaking with you and thank you in advance for your assistance in this project.

Sincerely,

Emma Chai
Masters of Environmental Studies Candidate
School of Environment, Enterprise and Development
Faculty of Environment
University of Waterloo
Phone: (519)721-2134
E-mail: z5chai@uwaterloo.ca

Under the supervision of Dr. Adriane MacDonald and Dr. Amelia Clarke.

Adriane MacDonald
Faculty of Management,

University of Lethbridge
Phone: (403)317-2885
Email: adriane.macdonald@uleth.ca

Amelia Clarke
School of Environment, Enterprise and Development
University of Waterloo
Phone: (519)888-4567 ext. 38910
Email: amelia.clarke@uwaterloo.ca

Consent Form

By signing this consent form, you are not waiving your legal rights or releasing the investigator(s) or involved situations(s) from their legal and professional responsibilities.

_____

I have read the information presented in the information letter about a study being conducted by Emma Chai of the School of Environment, Enterprise and Development at University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses.

I am also aware that excerpts from the interview may be included in the thesis and/or publications to come from this research, with the understanding that the quotations will be anonymous.

I was informed that I may withdraw my consent by advising the researcher.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#22511). If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions contact me at 519-721-2134 or by email at z5chai@uwaterloo.ca. You can also contact my supervisors, Adriane MacDonald at 403-317-2885 or email adriane.macdonald@uleth.ca and Amelia Clarke at 519-888-4567 ext. 38910 or email amelia.clarke@uwaterloo.ca. .

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

☐YES ☐NO

I agree to have my interview audio recorded.

☐YES ☐NO

I agree to the use of anonymous quotations in any thesis or publication that comes of this research.

☐YES ☐NO

Participant Name: _____ (Please print)

Participant Signature: _____

Date: _____

Oral Consent Script

Introduction:
Hello. I'm Emma Chai. I am conducting interviews about Leadership Skillsets and Competencies for Managing and Implementing Sustainability Plans in Canada. I am conducting for my Master's degree in the School of Environment, Enterprise and Development at the University of Waterloo under the supervision of Professors Adriane MacDonald and Amelia Clarke.

Study Procedures:
Currently, there is a gap in the research regarding the leadership competencies for implementing local sustainability plans, both with and without multi-stakeholder partnerships. The objective of this study is to address this gap and better understand the requisite leadership/managerial skillsets and competencies for implementing sustainability plans, such as Climate Action Plans and Integrated Community Sustainability Plans in Canada.

Your participation in this study will involve an interview of approximately 45 minutes in length that will take place in a mutually agreed upon location or over the telephone. With your permission, the interview will be audio recorded to facilitate collection of information, and later transcribed for analysis. Shortly after the interview has been completed, I will send you a copy of the transcript to give you an opportunity to confirm the accuracy of our conversation and to add or clarify any points that you wish.

Risks and Benefits
Participation in this study is completely voluntary. At any time, you may decline to answer any question(s) you prefer not to answer by requesting to skip the question. Further, you may decide to end the interview at any time without any negative consequences by advising the researcher that you would like to withdraw your participation from this study. There are no anticipated risks from participating in this study. Participation in this study may not provide any personal benefit to you, however data collected from interviews will contribute to fill the current gap in the leadership competencies and sustainable development literature.

Your participation in this study will remain confidential. Your name will not appear in any thesis or report resulting from this study, however, with your permission anonymous quotations may be used. All information that could identify you will be removed from the data that is collected within 2 months and stored separately. We will keep identifying information for a minimum of 5 years and our study records for a minimum of 5 years. You can withdraw consent to participate and have your data destroyed by contacting us within this time period. Please note that it is not possible to withdraw consent once papers and publications have been submitted to publishers. Only those associated with this study will

have access to these records which are password protected. All records will be destroyed according to University of Waterloo policy.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE #22511). If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

For all other questions or if you would like additional information to assist you in reaching a decision about participation, please contact me at 519-721-2134 or by email at z5chai@uwaterloo.ca. You can also contact my supervisors, Adriane MacDonald at 403-317-2885 or email adriane.macdonald@uleth.ca and Amelia Clarke at 519-888-4567 ext. 38910 or email amelia.clarke@uwaterloo.ca.

Consent questions:
Do you agree to participate in this research?

Do you agree to have your interview audio-recorded?

Do you agree to the use of anonymous quotations in any thesis or publication that comes of this research?
[If yes, begin the interview.]
[If no, thank the participant for his/her time.]

Appendix D: Interview questions for participants who implement plans through partnerships

Due to the focus of this research, interviewees' descriptions will be about their experiences implementing a sustainability plans. For each interviewee, the following questions will be asked, and the answers will be audio recorded by the interviewer:

1. Introduction and explanation

The aim of this interview is to find out what it takes to implement (insert name of the plan), or works well when implementing a sustainability plan. The best way to do this is by asking experts like you- the ones who are actually implementing plans -how you do it. In this interview, I would like to learn about the most important experiences you have had while implementing (insert name of plan). During this interview I will ask you to describe (a) a successful implementation experience and (b) difficult implementation experience. Please note that your participation in this study will be kept strictly confidential.

2. Introductory questions career and job responsibility

To get started, I would like to learn more about the plan, please briefly describe the plan and the implementation process.

I would like to learn more about your past work experience and current position as (insert job title).

-How many years have you been working in the sustainability field?
-Have you managed cross-sector (e.g., business-non-profit, government-business, etc.) partnerships in the past?
-How long have you been working in your current role?
-What are your major tasks or responsibilities in your current role?
-How much of your time is devoted to managing the partnership each week?
-How much of your time is devoted to other plan implementation activities each week?

3. Behavioral events – High point

Please recall a specific plan implementation experiences that went particularly well for you (a high point). I'm interested in learning from the best experience you have had while implementing your plan through the partnership. Please walk me through it from beginning to end.

- What was the situation?
- Who was involved?
- What did you think, feel or want to do in this situation?

4. Characteristics needed to do the job

What did you want to do at that time?
How did you achieve your goal(s)? What did you do?

5. Behavioral events – Low point

Please recall one or two specific plan implementation experiences, in which you felt you weren't as effective as you could be, when things didn't go well, or when you were particularly frustrated (a low point). I'm interested in learning from the toughest partnership implementation experiences you have had to face. Please walk me through it from beginning to end.

- What was the situation?
- Who was involved?

- What did you think, feel or want to do in this situation?

6. Characteristics needed to do the job

What did you want to do? What did you actually do?

7. Personal practices for skill development

Do you engage in any personal practices that you feel support you in your current role (e.g., journaling, meditation, yoga, retreats, other reflection practices, volunteering, seeking advice from mentors etc.)? If yes, what practices? Do you think these practices help you to develop skills for your job? If yes, what skills?

8. Conclusion and summary

Do you have any questions? Thank you for your time and insights. We will be in-touch with the transcripts from this interview for your review in approximately 2 months.

Appendix E: Interview questions for participants who implement plan without partnerships

Due to the focus of this research, interviewees' descriptions will be about their experiences implementing a sustainability plans. For each interviewee, the following questions will be asked, and the answers will be audio recorded by the interviewer:

1. Introduction and explanation

The aim of this interview is to find out what it takes to implement (insert name of the plan), or works well when implementing a sustainability plan. The best way to do this is by asking experts like you- the ones who are actually implementing these plans-how you do it. In this interview, I would like to learn about the most important experiences you have had while implementing (insert name of plan). During this interview I will ask you to describe (a) a successful plan implementation experience and (b) a difficult plan implementation experience. Please note that your participation in this study will be kept strictly confidential. With your permission, I would like to record the interview so I can pay more attention to you and not have to take so many notes. But if there is anything you want to say off the record or don't want me to record, just let me know and I'll turn off the recorder. Again, everything you say will be kept confidential.

2. Introductory questions career and job responsibility

To get started, I would like to learn more about your past work experience and current position as (insert job title).

-How many years have you been working in the sustainability field?
-How long have you been working in your current role?
-What are your major tasks or responsibilities in your current role?
-How much of your time is devoted to plan implementation activities each week?

3. Behavioral events – Positive Experience

Please recall a specific plan implementation experience that went particularly well for you. I'm interested in learning from the best experience you have had while implementing your plan. Please walk me through it from beginning to end.

4. Characteristics needed to do the job

What did you want to do at that time? What did you actually do?

5. Behavioral events – Challenging Experience

Please recall a specific plan implementation experience, in which you felt you weren't as effective as you could be, when things didn't go well, or when you were particularly frustrated (a low point). I'm interested in learning from the toughest plan implementation experience you have had to face. Please walk me through it from beginning to end.

6. Characteristics needed to do the job

What did you want to do? What did you actually do?

7. Personal practices for skill development

Do you engage in any personal practices that you feel support you in your current role (e.g., journaling, meditation, yoga, retreats, other reflection practices, volunteering, seeking advice from mentors etc.)? If yes, what practices? Do you think these practices

help you to develop skills for your job? If yes, what skills?

8. Conclusion and summary

Do you have any questions? Thank you for your time and insights. We will be in-touch with the transcripts from this interview for your review in approximately 2 months.

Appendix F: Confidentiality Statement

I understand that as a transcriber for a study being conducted by Emma Chai of the School of Environment, Enterprise and Development, University of Waterloo under the supervision of Professors Adriane MacDonald and Amelia Clarke, I am privy to confidential information. I agree to keep all data collected during this study confidential and will not reveal it to anyone outside the research team. I promise to delete all data after the research complete.

Name: _____ Signature: _____

Date: _____ Witness Signature: _____

Appendix G: Feedback Letter

September 11th, 2017

Dear (insert name of participant),

I would like to thank you for your participation in the study titled "Leadership Skillsets and Competencies for Managing and Implementing Sustainability Plans in Canada". As the reminder, the purpose of this study is to identify key leadership skillsets and competencies for implementing sustainability plans in Canada.

This study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#22511). If you have questions for the Committee contact the Chief Ethics Officer, Office of Research Ethics, at 1-519-888-4567 ext. 36005 or ore-ceo@uwaterloo.ca.

Please remember that any data pertaining to you as an individual participant will be kept confidential. Once all the data are collected and analyzed for this project, I plan on sharing this information with the research community through seminars, conferences, presentations, and journal articles.

If you are interested in receiving more information regarding the results of this study, or would like a summary of the results, please provide your email address, and when the study is completed, (anticipated by May 2018), I will send you the information. In the meantime, if you have any questions about the study, please do not hesitate to contact me by email or telephone as noted below.

Sincerely,
Emma Chai

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Appendix H: Effect Size (Cohen's d) Categories and Interpretations

Small-sized effect (d = 0.2)

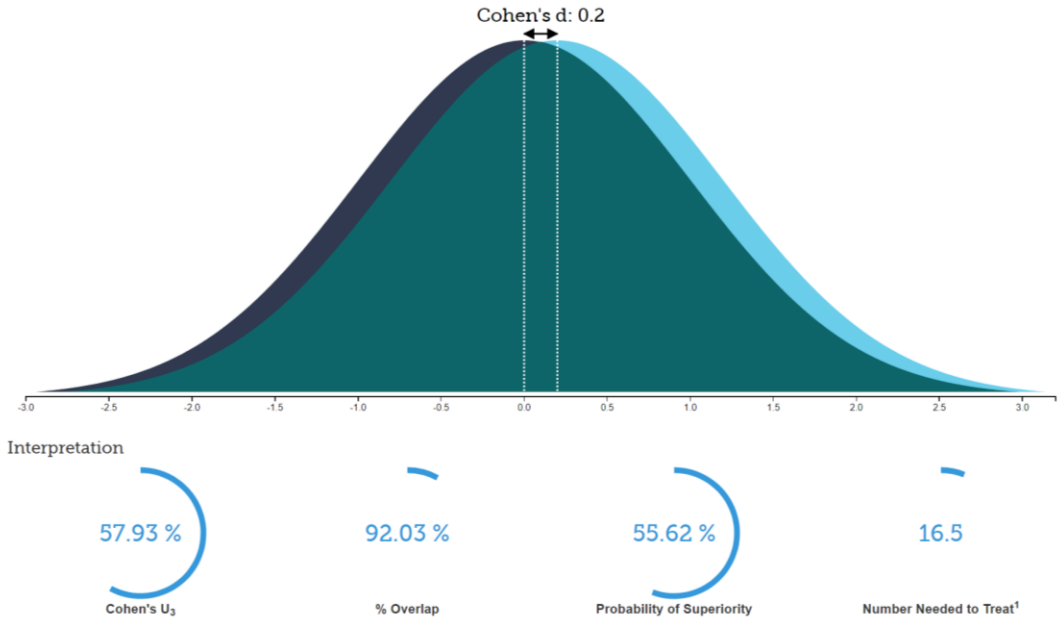

Figure 4. Comparison Graph of Small-Sized Effect (d = 0.2)

Medium-sized effect (d = 0.5)

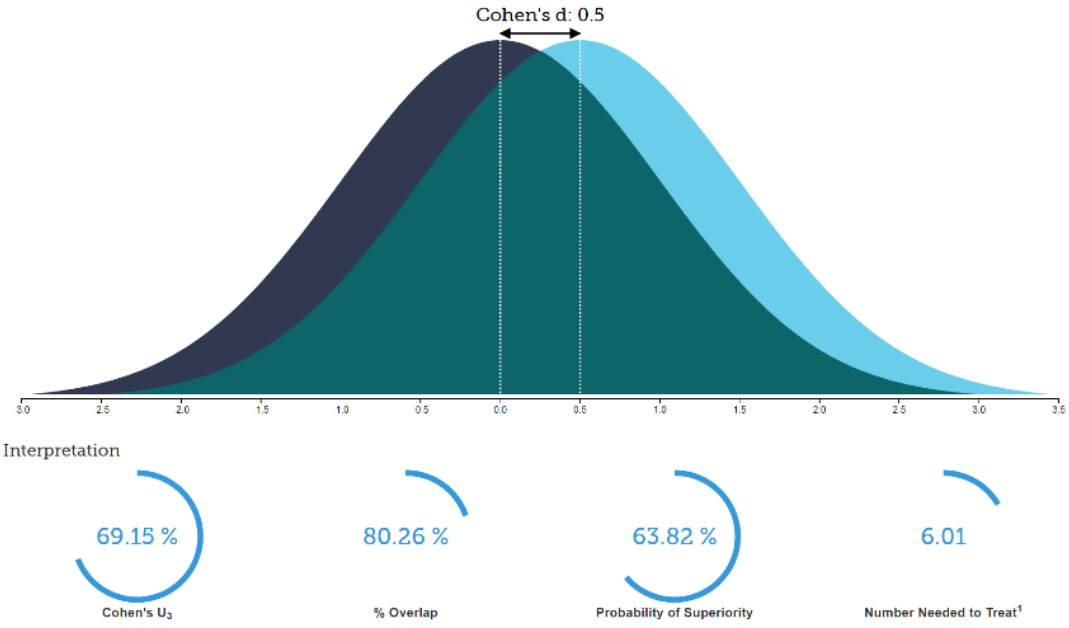

Figure 5. Comparison Graph of Medium-Sized Effect (d = 0.2)

Large-sized effect (d = 0.8)

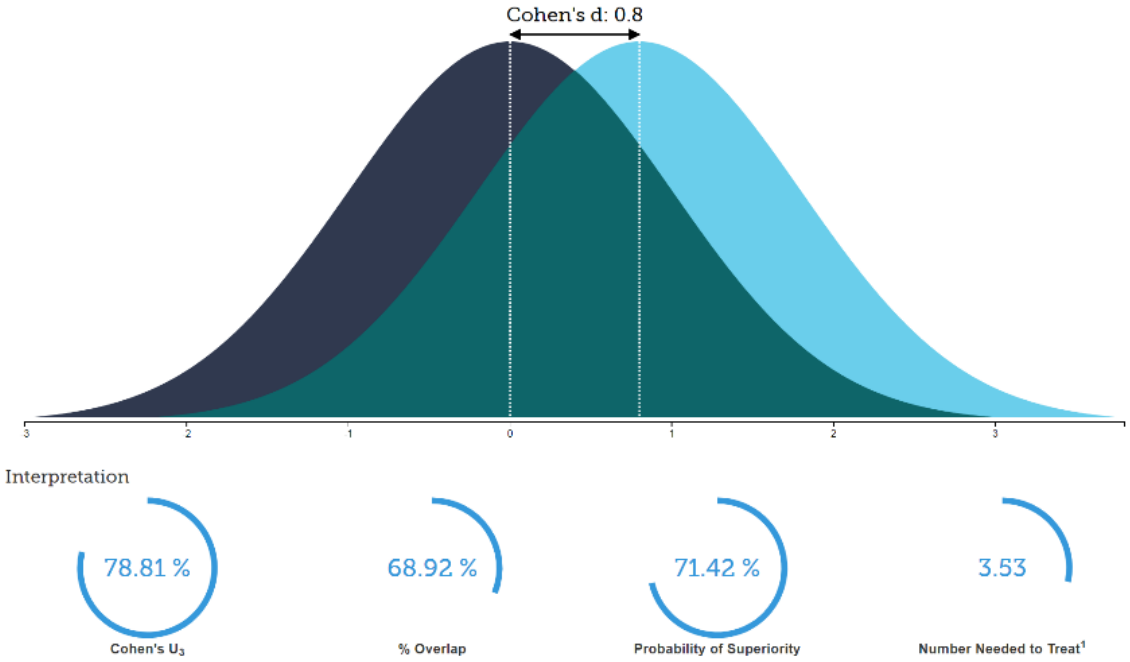

Figure 6. Comparison Graph of Large-Sized Effect (d = 0.2)

(Magnusson, 2014)

Appendix I: Detailed Explanations of Communication Cluster

Figure 7 presents the number of sustainability managers who demonstrated communication competencies.

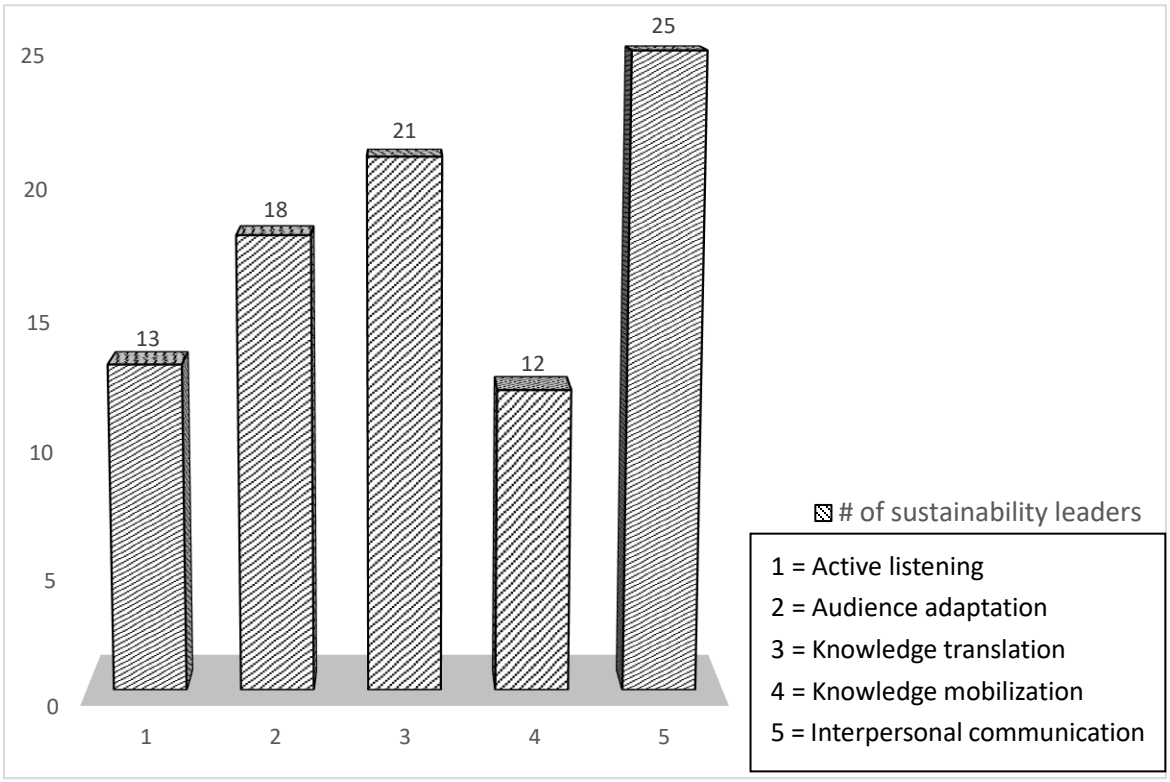

Figure 7. Numbers of Sustainability Managers Who Demonstrated Communication Cluster

Figure 8 presents a bar graph of the percentage of multi-stakeholder partnership practitioners and corporate practitioners who demonstrated having communication competencies.

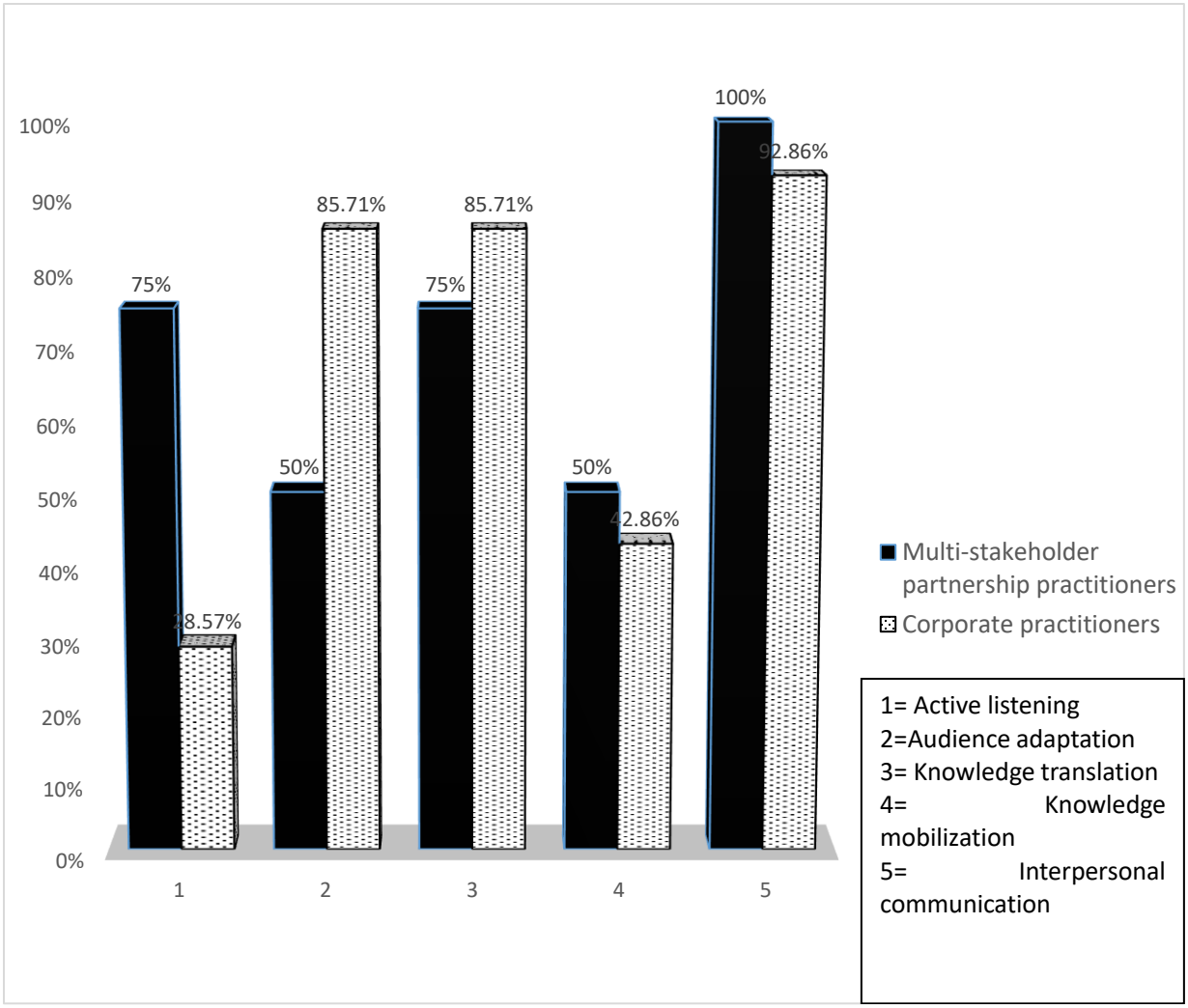

Figure 8. Percentages of Communication Cluster Appearances of Multi-stakeholder Partnership Practitioners and Corporate Practitioners

Active Listening

Active listening is a competency essential to effective communication. It is not only about listening to other people, but also about the willingness to understand and accept the views of others (Williams, 2002). "Active listening has been described as a multistep process, including making empathetic comments, asking appropriate questions, and paraphrasing and summarizing for the purposes of verification" (McNaughton, Hamlin, McCarthy, Head-Reeves, & Schreiner, 2008, p. 224). When sustainability managers fully understand their communities' and stakeholders' voices, they are actively listening. As the quotations below show, 13 sustainability practitioners demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner:

> *"We go into a situation knowing we are always going to hear different opinions,*

and we listen to everyone."

A representative quotation from a corporate practitioner:

> *"... during that same time, we are working with residents, that any complaints and issues of any lines ... we are defining that."*

Audience Adaptation

"Speakers make inferences about addressee characteristics a social category membership, interests, and areas of expertise, and these inferences help determine such aspects of the message as the degree of its specificity and the manager of its presentation"(Fussell & Krauss, 1989, p. 510). Audience adaptation is different from other communication competencies because it emphasizes the content of a speech or talk based on audiences' preferences and interests, and the language used in the speech can be technical. Sustainability managers often talk about their sustainability plans with various audiences, including community members, upper-level management people, their colleagues, and their stakeholders. These audiences have various interests and levels of understanding of sustainability, requiring sustainability practitioners to be able to vary the content of their dialogues and presentations. When they are talking with community members, sustainability practitioners tend to focus more on the benefits that the plans and projects can bring to the community. While talking with businesses and with people who are interested in the economics of sustainability, these practitioners tend to focus on the costs and profits of the plans. The following quotations illustrate how sustainability managers can change their way of imparting information. There were 18 sustainability managers demonstrated this competency.

A representative quotation from a sustainability practitioner who manages a community-wide sustainability plan with multi-stakeholder partnerships:

> *"No matter whom you are talking to, you need to make sure that, you know, if you are going to try to work with them, you need to understand what's important for them. And, to always sort of say, you know, we recognize these ... these things are important for you. And, this is where, you know, this environmental stuff we're doing aligns with those things that are important for you."*

A representative quotation from a sustainability practitioner who manages a corporate-level sustainability plan without a multi-stakeholder partnership:

> *"So, [I] really tried to drive the conversation about like, well, what does this mean, how will this benefit you, how will this make you look good?"*

Knowledge Translation

Knowledge translation is defined as "the collaborative and systematic review, assessment, identification, aggregation and practical application of high-quality disability and rehabilitation research by key stakeholders (i.e., consumers, researchers, practitioners, policymakers) for the purpose of improving the lives of individuals with disabilities" (Levin, 2008, p. 12). This competency is focused on finding the right way to convert the technical knowledge and language into common and easily-understood language. The content of the speech does not have to meet the needs and interests of the audiences, which is different from audience adaptation. Sustainability managers must be able to translate professional and technical knowledge into common language. This includes translating professional sustainability, engineering, and other related technical languages into a generalized language for communities and people from other fields. There were 21 sustainability managers demonstrated this knowledge translation competency. The following are representative quotations that show how sustainability managers put this competency to work when communicating with others.

A representative quotation from a sustainability practitioner who manages a community-wide sustainability plan:

> *"I could take that engineering information and boil it down to a focused message that made sense to the stakeholders that I was speaking with."*

Representative quotation from a sustainability practitioner who manages the corporate level sustainability plan:

> *"... act as a translator because people don't really ... like, people you're talking to don't really understand the technical aspect as much, right? Like, that's not their strength."*

Knowledge Mobilization

Knowledge mobilization is "getting the right information to the right people in the right format at the right time, to influence decision-making. Knowledge mobilization includes dissemination, knowledge transfer and knowledge translation" (Levin, 2008, p. 12). Compared with audience adaptation and knowledge translation, knowledge mobilization requires a more comprehensive and strategic plan for presenting information. Sustainability practitioners tend to have the ability to translate and introduce their sustainability plans at different times through different ways to various audiences, such as presenting their sustainability plan to their colleagues and upper-level management in formal reports and introducing sustainability to their communities in public events. There were 12 sustainability managers demonstrated the ability to mobilize knowledge, as presented in the following quotations.

A representative quotation from a multi-stakeholder practitioner:

> *"... trying to get the education process in place so [the community] understands where we're coming from and the implications of, you know, here's the finance part, here's the social implications, here's all those things; and explaining all that because now they're listening"*

A representative quotation from a corporate practitioner:

> *"First thing we need to identify - who the stakeholders are and how do we want to inform them, right? So, there could, we need to inform them with different ways too, depending on who the stakeholder is."*

Interpersonal Communication

The last competency in the effective communication cluster is interpersonal communication. This refers to using different ways to communicate with various people effectively and accurately. This involves communicating through face-to-face conversations, e-mails, presentations, phone calls, etc. Interpersonal communication is "the process by which information, meanings, and feelings are shared by persons through the exchange of verbal and non-verbal messages"(Brooks & Heath, 1993, p. 7). Different from the other communication competencies, this is a competency that emphasizing the ability of managers to communicate accurately and clearly through all mediums. The content and the language used in their dialogues are not quite as critical as in the previous competencies. In the implementation of a sustainability plan, sustainability managers always speak with local community members to share sustainability-related knowledge with them and to collect the community's opinions through public presentations and daily conversations. Furthermore, sustainability practitioners keep the stakeholders and upper-level management groups informed of their plan and project performance through face-to-face conversations. 25 sustainability managers demonstrated effective interpersonal communication, as shown from the examples below.

A representative quotation from a sustainability practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"... repeatedly talking with elected officials both in our region and outside of our region, presenting at conferences, basically sharing knowledge and acting as an ambassador for our community."*

A representative quotation from a sustainability practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"I prepared a presentation talking about my understanding of the pros and cons of LED street lighting and speaking to some of the benefits as well as the concerns"*

As one of the major competency clusters for managing and implementing sustainability plans, the communication cluster helps sustainability practitioners communicate their plans, ideas, and projects with their stakeholders, colleagues, and communities effectively and accurately.

Appendix J: Detailed Explanations of Project Management Cluster

The figure below includes general competencies for project management and the number of sustainability leaders who demonstrated these competencies.

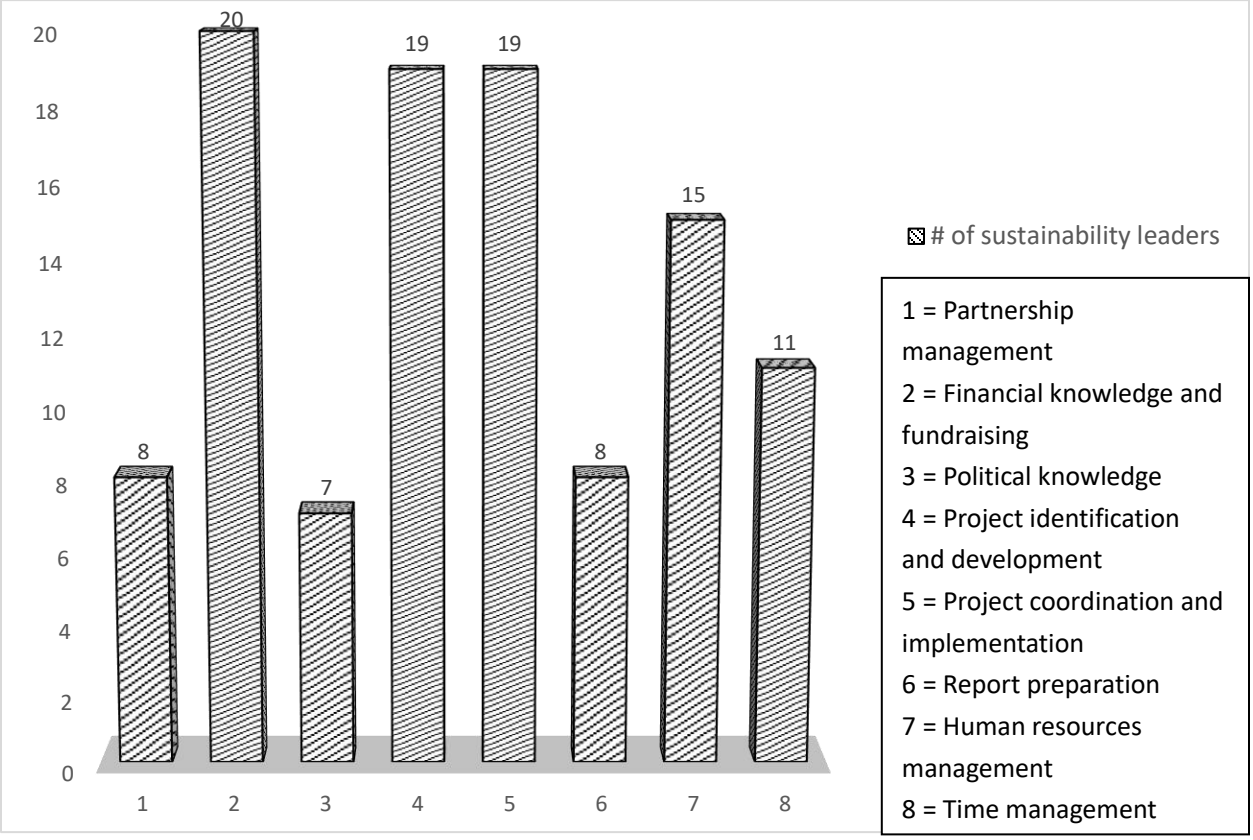

Figure 9. Numbers of Sustainability Managers Who Demonstrated Project Management Cluster

Figure 10 presents a bar graph of the percentage of multi-stakeholder partnership practitioners and corporate practitioners who demonstrated having project management competencies.

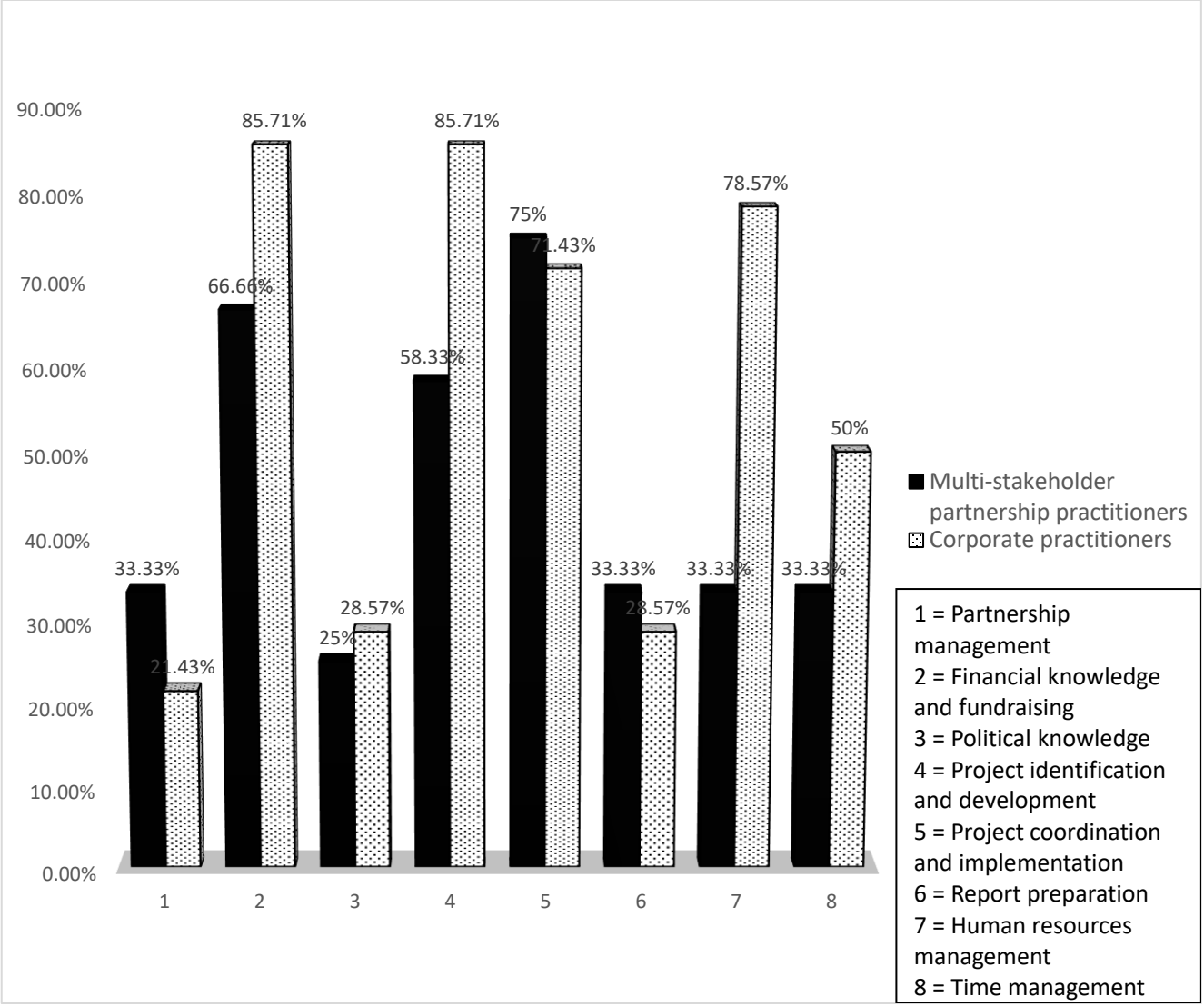

Figure 10. Percentages of Project Management Cluster Appearances of Multi-stakeholder Partnership Practitioners and Corporate Practitioners

Partnership Management

For some implementation processes of sustainability plan related projects, the partnership is needed. Thus, under project management competencies, partnership management includes finding the partner, creating the partnership, and maintaining the partnership. A partnership can be translated as: the relationship between local municipalities and private companies; the relationship between the local municipality and upper-level government; the relationship among different departments in the same municipality; and the relationship among public, private, and civil society. Eight sustainability practitioner demonstrated this competency, as presented below.

A representative from a multi-stakeholder partnership practitioner who manages a community-wide sustainability plan with multi-stakeholder partnerships:

"I think creating a successful partnership with a private company was a major challenge that we continue to work on it, but it's large, well, now in a good place."

A representative quotation from a corporate practitioner who manages a corporate-level sustainability plan without a multi-stakeholder partnership:

"So, just kind of bringing [contractors] along the way; make sure they're involved and they understand it. And, they see how it's going to work and what it's going to do for them in the future."

Financial Knowledge and Fundraising

One of the major components of project management is the financial component. As the project managers, sustainability managers need to have some financial knowledge, such as: how to read a balance sheet; how to allocate the project's budget; how to estimate the costs of the projects; and how to prepare grant applications. There were 20 sustainability managers demonstrated the need to have financial knowledge.

A representative quotation from a multi-stakeholder partnership practitioner:

"I think specifically we, although we got the funding to do the district energy study and it showed that it was technically feasible, we've kind of hit a wall; because to actually implement a district energy management system would take a lot of funding, capital dollars. And, the city only has so much capital dollars to go around; and we have a lot of aging infrastructure. We have a transit system, so we're sort of competing for dollars across the different departments that need money."

A representative quotation from a corporate practitioner:

"And as part of that, you're identifying, okay, well, this particular item in the budget that was something that was identified in the corporate energy plan; and, you know, we want to implement this thing now, so we need how much money. And typically, you need to develop a bit of a business case in order to do that, so you're trying to convince [founders] that, yeah, by giving us this money, you're going to save more money on utility costs, or some other benefit is going to happen to our organization"

Political Knowledge

Since most of the sustainability plans are created and led by local governments, and most of the sustainability practitioners in this research are from local municipalities, having an understanding of the politics tends to advance the plan's implementation performance. Having political views helps sustainability practitioners understand sustainability-related

policies, the priorities of municipalities, and the effects of politics on projects' and sustainability plans' implementations. Seven sustainability managers demonstrated political knowledge.

A representative quotation from a multi-stakeholder partnership practitioner:

> *"But, you know, when [the project gets] political, it's hard to describe if you don't know what it's like, but basically, you know, anything you're working on becomes a second priority; and when it's a political issue that's your priority and you have to resolve it responsibly and quickly so that that political concern goes away."*

A representative quotation from a corporate practitioner:

> *"I think you need to generate political support for a plan like this, so that it's not just the municipal government that's supporting it"*

Project Identification and Development

Besides having financial and political knowledge, as the project managers, sustainability leaders are able to identify and develop projects that fit the scopes and strategies of their sustainability plans. The sustainability practitioners in this study showed they can develop new projects that serve the objectives and scopes of their sustainability plans. Furthermore, these managers also showed they have the ability to identify the proposed projects and to choose the optimal projects that meet their plans' strategies. There were 19 sustainability managers demonstrated they had identified and developed projects for their sustainability plans' implementations.

A representative quotation from a sustainability practitioner who manages a community-wide sustainability plan:

> *"I'm involved with, like, the official plan development from the environmental perspective."*

A representative quotation from a sustainability practitioner who manages a corporate-level sustainability plan:

> *"So, we're educating the other business units at the management level right now, and then we're trying to identify projects and resources and in terms of just general awareness."*

Project Coordination and Implementation

As project managers, sustainability managers need to have the ability to coordinate

projects to implement them effectively. This includes coordinating people from different departments or sectors, implementing the project, and monitoring project progress. There were 19 sustainability managers demonstrated this competency.

A representative quotation from a sustainability practitioner who manages a community-wide sustainability plan:

> *"But then a lot of the work I've been doing is to implement some of the projects coming into [our integrated community sustainability plan]."*

A representative quotation from a sustainability practitioner who manages a corporate-level sustainability plan:

> *"The majority of implementation actions were kept within the planning department and put on – which is where I work – and put on my plate to coordinate; and a number of actions, especially those having to do with municipal infrastructure, were assigned to our engineering department, and a few actions were also assigned to our parks recreation and culture department and our finance and administration departments."*

Report Preparation

Most of the sustainability managers demonstrated that one of their many competencies is the ability to prepare reports on their sustainability plans and related projects. The report is one of the major channels through which these managers share their plan outcomes with communities. Also, it is the main channel used to inform stakeholders and upper-level government of all updates. This requires managers to write the report accurately and precisely. Eight sustainability practitioners demonstrated they had prepared reports.

A representative quotation from a sustainability practitioner who manages a community-wide sustainability plan with multi-stakeholder partnerships:

> *"I need to be able to log and report what different actions we are taking across the GPA and how they are reducing our greenhouse gases"*

A representative quotation from a sustainability practitioner who manages a corporate-level sustainability plan without a multi-stakeholder partnership:

> *"When I say communications now is emails, but also communication, like where you have to write reports to council members of executive committee. You should be able to write a good report that's concise and comprehensive."*

Human Resources Management
Sustainability managers tend to oversee the project management and implementation process and steward the project and related team. This could be identifying and finding the contractors, signing the contracts, overseeing the team, etc. There were 15 sustainability leaders demonstrated this competency.

A representative quotation from a sustainability practitioner who manages a community-wide sustainability plan with multi-stakeholder partnerships:

> *"My role was kind of overseeing – it wasn't – it was my – one of my staff who was leading [the conversation with our partners], and so it was just overseeing that staff person."*

A representative quotation from a sustainability practitioner who manages a corporate-level sustainability plan without a multi-stakeholder partnership:

> *"I look in on projects and how we write our council reports, and make sure that staff members are using our sustainability framework, applying our sustainability framework when they're writing reports or developing plans or doing projects."*

Time Management
Since time and funding are limited for all projects, sustainability managers need to manage their time. These practitioners develop the project agenda, ensure that the project's progress follows the agenda, and complete the project within the timeframe. There were 11 sustainability practitioners demonstrated this time management competency.

A representative quotation from a sustainability practitioner who manages a community-wide sustainability plan with multi-stakeholder partnerships:

> *"... ensuring that the overall project was moving forward on the timelines it needed to."*

A representative quotation from a sustainability practitioner who manages a corporate-level sustainability plan without a multi-stakeholder partnership:

> *"You obviously need people that are organized and have good time management skills 'cause that helps free up their time to focus on your project or our project."*

As one of the main competency clusters, sustainability managers need to have project management related competencies, which include partnership management, financial

knowledge and fundraising, political knowledge, project identification and development, project coordination and implementation, report preparation, human resources management, and time management.

Appendix K: Detailed Explanations of Individual Attributes Cluster

Figure 11 presents the numbers of sustainability managers who demonstrated these individual attributes.

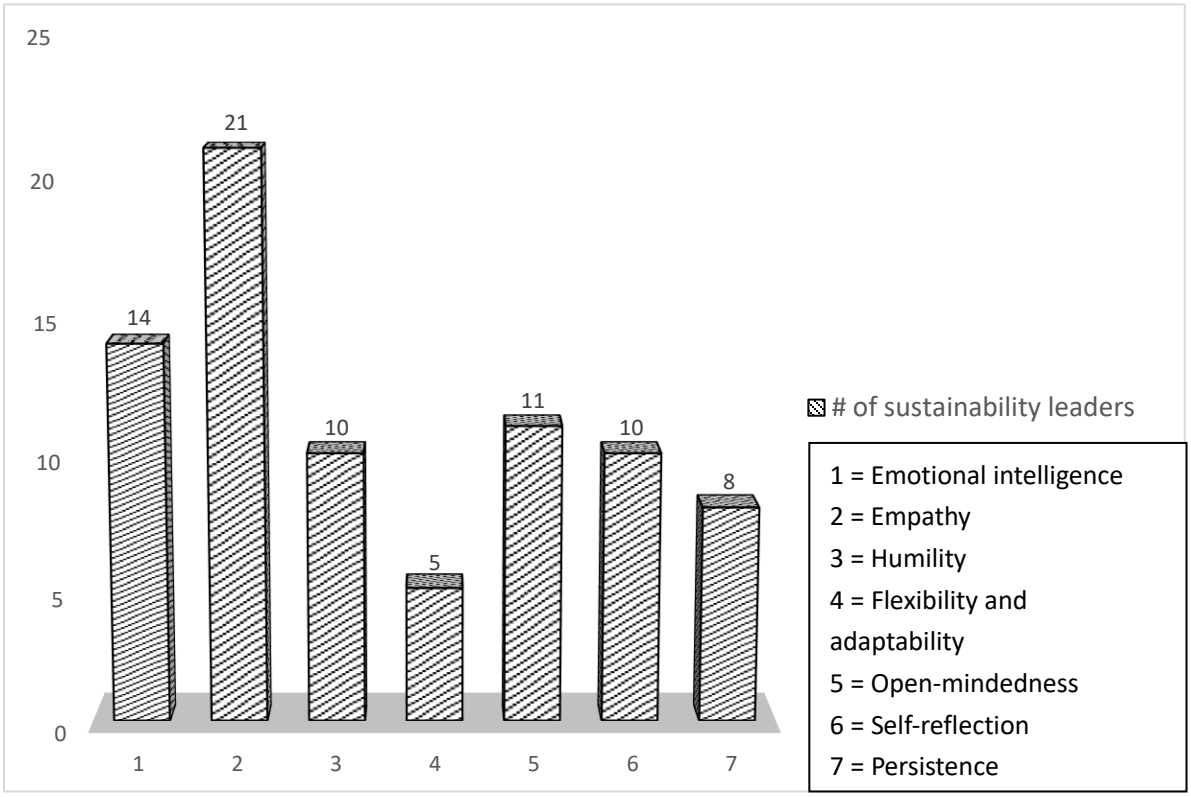

Figure 11. Numbers of Sustainability Managers Who Demonstrated Individual Attributes Cluster

Figure 12 shows that one of the individual attributes, empathy, is the most common competency for both groups of sustainability managers.

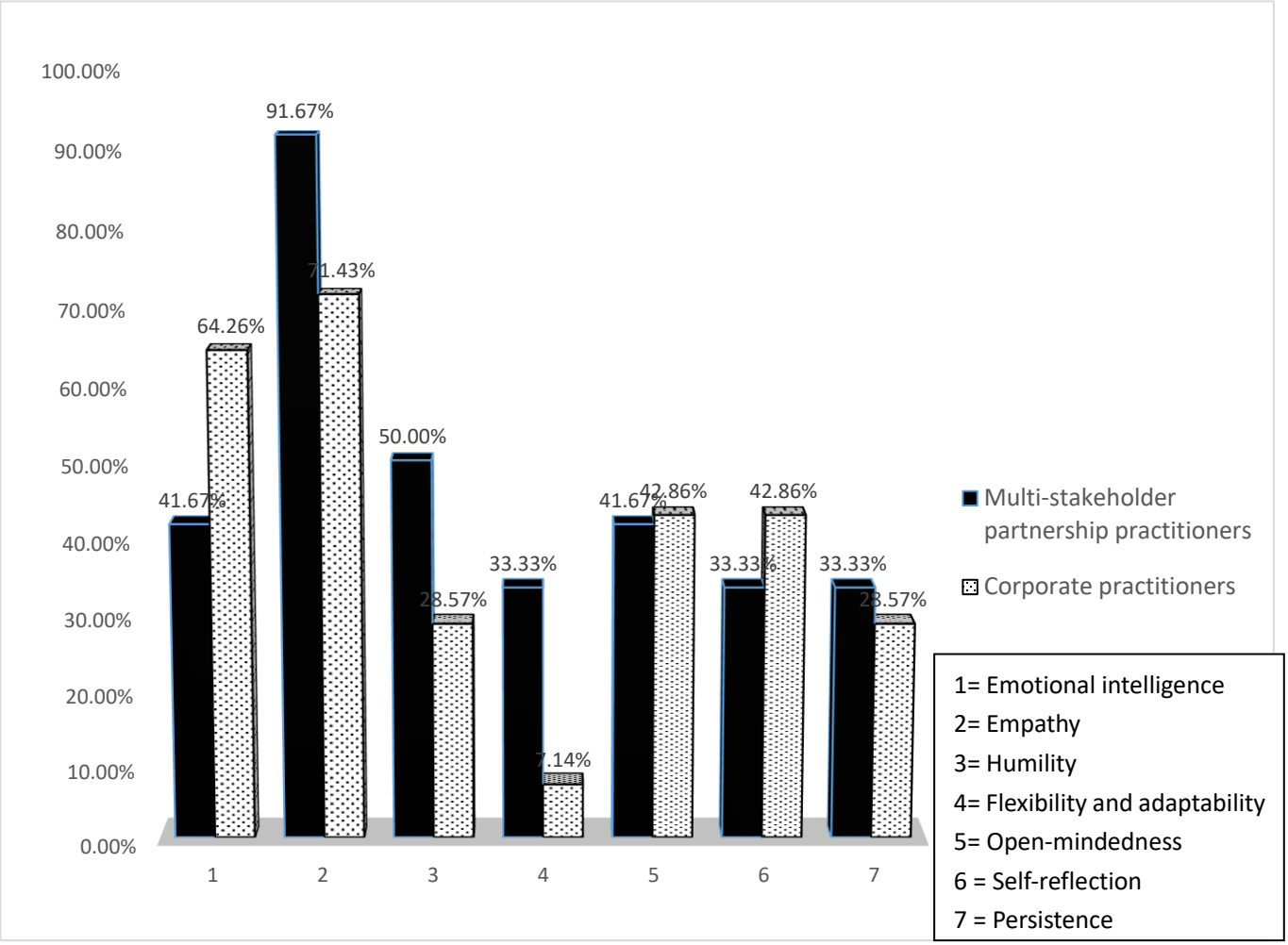

Figure 12. Percentages of Individual Attribute Cluster Appearances of Multi-stakeholder Partnership Practitioners and Corporate Practitioners

Emotional Intelligence

Emotional intelligence "involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (Salovey & Mayer, 1990, p. 189). Most sustainability plans' implementations are project driven. Having emotional intelligence provides sustainability managers with the ability to work well with people, such as their treatment of, and communication with, other people. There were 14 sustainability practitioners demonstrated emotional intelligence.

A representative quotation from a multi-stakeholder partnership practitioner:

"Again, it gets back in part to your character, to who you are, and how you treat

other people, that you're not being seen as someone who's saying this is the way it's going to be."

A representative quotation from a corporate practitioner:

"Instead we changed the tone of the conversation to: 'We all know that we can do better in this area'. These are the strategies that are working. Here's some areas that we don't understand how we could make this best work for you. Please help us."

Empathy

In Spencer and Spencer's (1993) Competency Dictionary, interpersonal understanding is defined as "wanting to understand other people. It is the ability to hear accurately and understand the unspoken or partly expressed thoughts, feelings, and concerns of others" (Spencer & Spencer, 1993, p. 37). Cross-cultural sensitivity is identified as interpersonal understanding in Spencer and Spencer (1993) and is one of the increasingly important competencies. It is important for sustainability managers to understand various people's perspectives and views, especially when they are trying to earn the support of others. In this way, empathy is similar to audience adaptation, but empathy is not only about understanding audiences' needs, it is also about understanding the needs and perspectives of colleagues and stakeholders. There were 21 sustainability practitioners demonstrated empathy when working with others.

A representative quotation a multi-stakeholder partnership practitioner:

"I know especially in the countryside, people are very shy, and they don't like to express their opinions in front of a room of people. So, to have a physical map at a table, with markers, and having conversations with four or five people around a table, I always assume – I felt pretty confident that it would work, and we continue to consult that way."

A representative quotation from a corporate practitioner:

"And, you have to have empathy for the people that work in all positions and understand that everyone's experience at work, it means a lot to them, even if they are doing something maybe that may seem menial to you. That's what they come to work for, so you have to be respectful."

Humility

Humility is one of the essential leadership competencies, which emphasizes "a sense of unworthiness and low self-regard" (Tangney, 2000, p. 73). Humility includes assessment of one's abilities and limitations, maintaining one's abilities, and having an appreciation

of the value of everything (Tangney, 2000, pp. 73–74). Sustainability managers tend to know their limitations, such as not being able to do everything on their own, and not knowing everything. Hence, they often ask experts for help in working with other people as well as help with work on their projects and plan implementation. There were 10 sustainability practitioners demonstrated humility.

A representative quotation from a multi-stakeholder partnership practitioner:

> *"You can't be out there in the public asking [the community] to do certain things when you don't at least try to do those things yourself or do something comparable."*

A representative quotation from a corporate practitioner:

> *"I mean, the thing is, is when you get sent away and the answer is no, it gives the opportunity to go back and do more work."*

Flexibility and Adaptability

Flexibility and adaptability is "the ability to adapt to and work effectively with a variety of situations, individuals, or groups. It is the ability to understand and appreciate different and opposing perspectives on an issue, to adopt an approach as requirements of a situation change, and to change or easily accept changes in one's organization or job requirement" (Spencer & Spencer, 1993, p. 83). Common behaviors include "adapts easily to changes at work, flexibly applies rules or procedures, or changes own behavior or approach to suit the situations" (Spencer & Spencer, 1993, p. 84). Five sustainability managers demonstrated the need to be flexible in different work situations and in dealing with various people.

A representative quotation from a multi-stakeholder partnership practitioner:

> *"I also need to leave gaps for projects that may come through last minute because sometimes new opportunities come up that were not planned for, and you need to be ready to take that on as well."*

A representative quotation from a corporate practitioner:

> *"One, you have to be willing to do everything, the dirtiest job to the best job. And you have to be willing to pitch in at any level."*

Open-Mindedness

Open-mindedness is one of the big five personality traits as well as being one of the major individual attributes that sustainability practitioners need to have. It "characterizes

someone who is intellectually curious and tends to seek new experiences and explore novel ideas" (Zhao & Seibert, 2006, p. 261). In terms of a sustainability plan's implementation, sustainability managers must be open to new ideas and to new ways to help them implement the plan and achieve plan strategies. These managers must be open to different views and solutions from people from different fields and levels and to different possibilities as well. There were 11 sustainability managers demonstrated their open-mindedness to new ideas, views, and solutions.

A representative quotation from a multi-stakeholder partnership practitioner:

> *"If someone approaches the city and he or she contacts me and they want to figure out how to do something, I will help them stick-handle through some of the challenges that might occur through the bureaucracy at City Hall. So, I help to open the doors that way."*

A representative quotation from a corporate practitioner:

> *"… be open-minded, right, to make suggestions, right? There might be something in your head, but you should be willing to listen to other people, so there's all this personal development throughout to help you with your job."*

Self-Reflection

Self-reflection is "reassessing the way we have posed problems and reassessing our own orientation to perceiving, knowing, believing, feeling and acting" (Mezirow, 1990, p. 12). Some of the sustainability managers demonstrated that they have the ability to learn from the past, which can be considered as having self-reflection. This includes learning from their mistakes, reviewing previous projects, and learning from others' feedback. Ten sustainability managers demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner:

> *"I feel that it, we could have made the Plan a little bit more effective in terms of the long-term and looking at how we report out on the success and implementation of the Sustainability Plan."*

A representative quotation from a corporate practitioner:

> *"I'm very interested to hear for the one that marked [evaluation] low, like a two or a three. I [would] then read their comments and see what I can learn, so that when I continue the program, you know, in 2018, if I created a new energy partnership program, which is my intention, I'll be able to make improvements to the program*

because that's what it's about. It's about continuously learning and improving what we're doing."

Persistence

Sustainability managers demonstrated that working in the field of sustainability is challenging, especially while implementing a sustainability plan. The ideas of sustainability and sustainability plans are relatively new to the public, and require people to change their behaviors and beliefs. There are many challenges throughout the implementation process; therefore, managers need to be persistence. Hence, this requires them to face these challenges, be patient, and to be persistent and never give up. Eight sustainability managers demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner:

> "… a bit of a perseverance that I think … that I have had over the years in ensuring that [the environment perspective] is there."

A representative quotation from a corporate practitioner:

> "I realized that change is sometimes slow in coming, that sometimes you need to let people see things for themselves. You need to have those senior managers or those elected officials come to you after they've seen others doing it and asking you to do it. So, I've learned to be patient"

This research found that individual attributes is comprised of seven competencies which are necessary for sustainability practitioners to manage and implement sustainability plans.

Appendix L: Detailed Explanations of Knowledge Management Cluster

The figure below presents the numbers of sustainability managers who demonstrated knowledge management competencies.

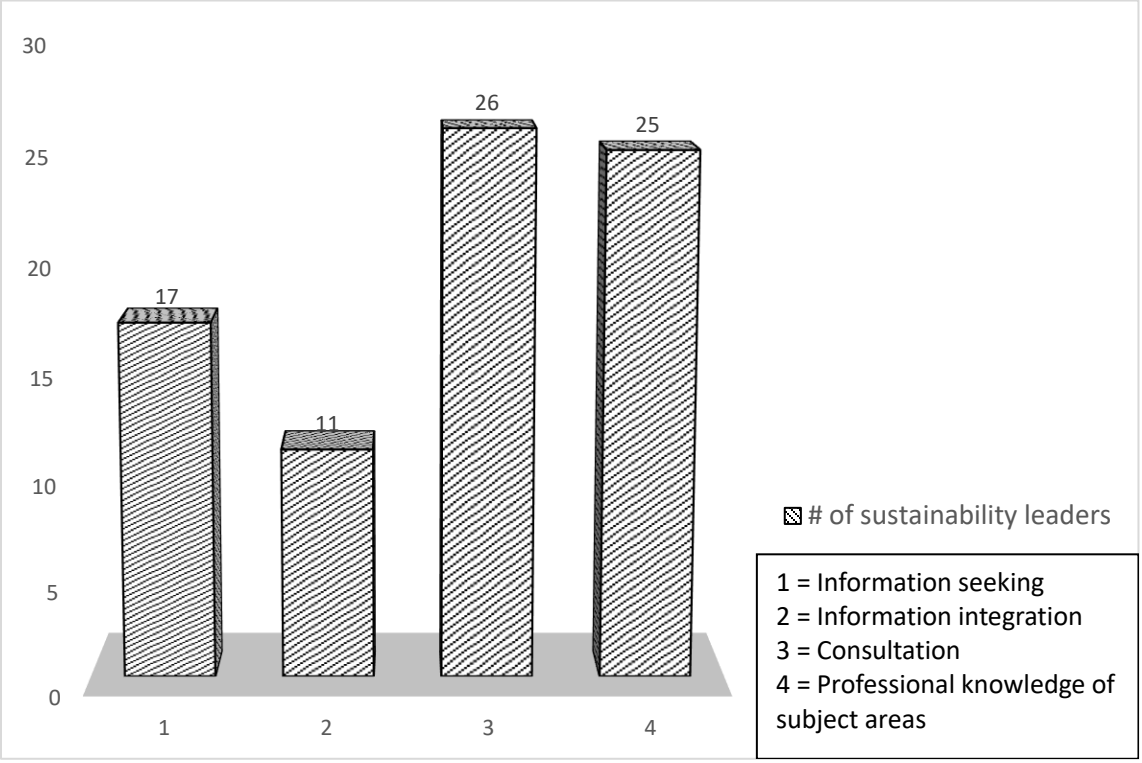

Figure 13. Numbers of Sustainability Managers Who Demonstrated Knowledge Management Cluster

The bar group in Figure 14 shows consultation is the most common competency for both groups of sustainability practitioners, as well as professional knowledge on subject areas.

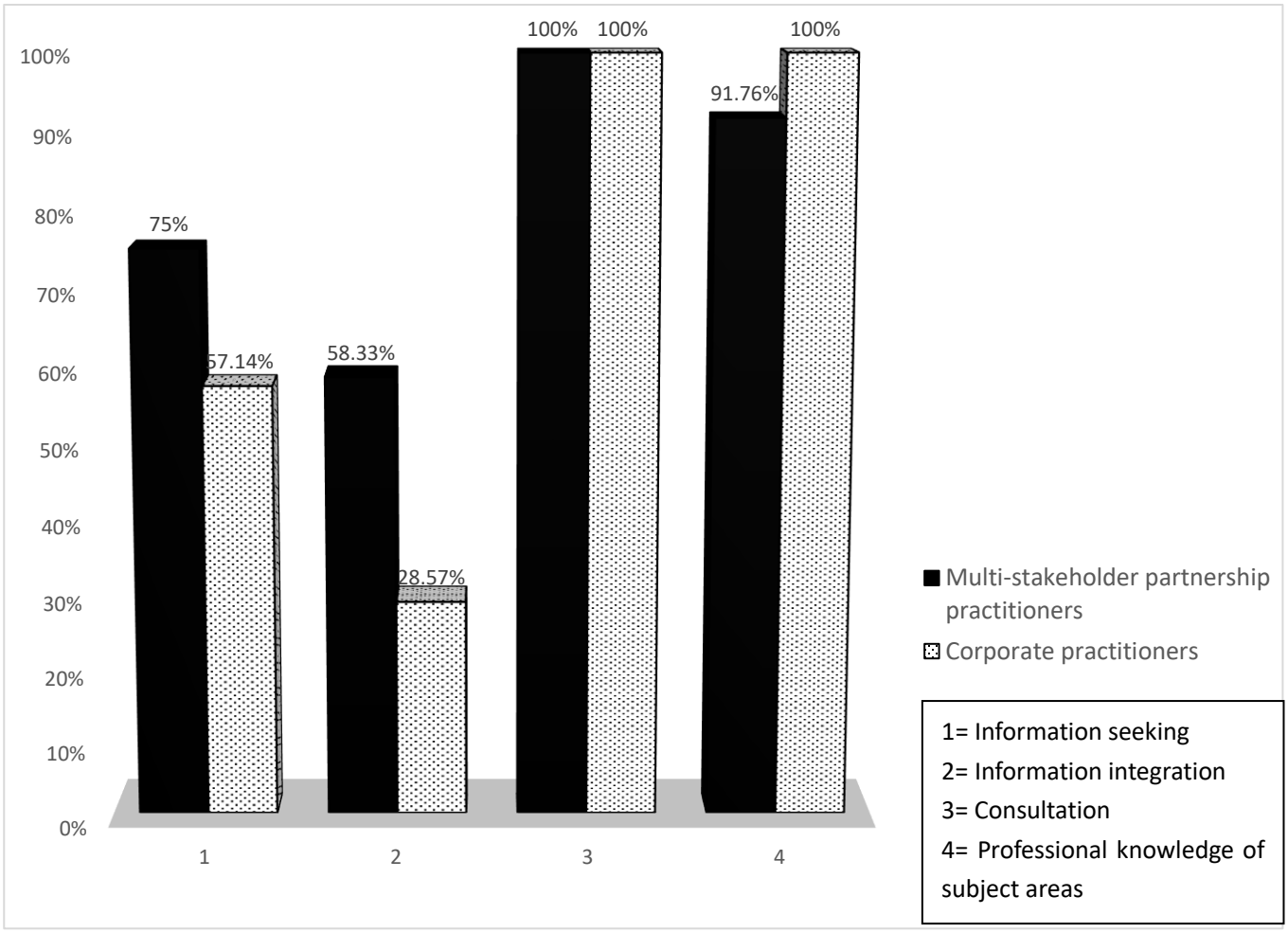

Figure 14. Percentages of Knowledge Management Cluster Appearances of Multi-stakeholder Partnership Practitioners and Corporate Practitioners

Information Seeking

Information Seeking is "an underlying curiosity, a desire to know more about things, people, or issues" (Spencer & Spencer, 1993, p. 34); it "implies making an effort to get more information, not accepting situations at face value" (Spencer & Spencer, 1993, p. 35). Sustainability managers tend to be motivated to search for new information on sustainability and related fields. Such managers often seek out new information through various ways, such as searching online, asking other experts, participating in conferences and other related activities, taking training sessions, etc. There were 17 sustainability managers demonstrated the ability to, and the willingness to, search for new information.

A representative quotation from a multi-stakeholder partnership practitioner who manages a community-wide sustainability plan with multi-stakeholder partnerships:

"Have a good knowledge of what's going on around you in a variety of different fields is something that I feel is beneficial."

A representative quotation from a corporate practitioner who manages a corporate-level sustainability plan without a multi-stakeholder partnership:

"I also read exhaustively, and I am a seeker of knowledge on a variety of topics from transformational change and change management to personal leadership development and organizational development. [The] kinds of topics in order to help advance the work that I find myself doing."

Information Integration

In addition to seeking out information, sustainability managers also showed they have the ability to integrate, mix, and combine separate pieces of information to help them solve problems. "Information integration represents a complex activity in which already encoded information is reformulated in order to meet some conceptual, judgmental or decision-making needs of the individual" (J. B. Cohen, Miniard, & Dickson, 1980, p. 3). Other than search for new information, sustainability managers also need to have the ability to integrate collected information with their knowledge, experiences, and thoughts. This helps these managers to come up with solutions or plans which suit their municipalities and communities' situations. There were 11 sustainability practitioners demonstrated this competency.

A representative quotation from a sustainability practitioner who manages a sustainability plan with multi-stakeholder partnerships:

"I'm trying to roll out a similar project on climate change under the same philosophy as the success of the Blue Box Program."

A representative quotation from a sustainability practitioner who manages a sustainability plan without a multi-stakeholder partnership:

"We did a very large review of community energy plans that had been produced in Canada up to 2015, which was when we designed our program, and we – having done that review, we identified three or four innovations that we were going to build into our process for this new plan."

Consultation

During most plan implementation stages, sustainability practitioners tend to consult with various people on different topics that are necessary and critical to plan implementation.

Sustainability managers tend to consult with water treatment or energy experts on technical knowledge. Their colleagues often give them advices to help them find the best solutions in answer to their challenges. These managers also consult with their community members on sustainability-related topics, such as how they want their community to be and what they want to have in their communities. There were 26 sustainability managers demonstrated they had consulted with other people.

A representative quotation from a sustainability practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"... stakeholder and public consultation on [sustainability plans and climate plans] as we would have liked or been even able to do, I think some of those initial steps were ... and plans were probably the stepping stones to get to where we were at."*

A representative quotation from a sustainability practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"I will also consult internally with different departments. So, for example, you know, if there are wastewater or water issues that may come up, or climate change issues that relate to our infrastructure, I may consult with the engineering department on those issues."*

Professional Knowledge of Subject Areas

"Technical/Professional/Managerial Expertise includes both the mastery of a body of job-related knowledge (which can be technical, professional, or managerial), and also the motivation to expand, use, and distribute work-related knowledge to others" (Spencer & Spencer, 1993, p. 73). Typical behaviors include "keeping skills and knowledge current, showing curiosity in related fields, helping others resolve problems, taking training sessions, etc." (Spencer & Spencer, 1993, p. 73). Professional knowledge in sustainability, environmental science, or in other related fields was identified and is a concern of sustainability managers as one of the main competencies that benefit their job and work performance. There were 25 sustainability practitioners demonstrated having professional knowledge in the sustainability field.

A representative quotation from a sustainability practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"I think having a background in planning can be helpful because a lot of the work that we're dealing with involves urban planning."*

A representative quotation from a sustainability practitioner who manages a sustainability

plan without a multi-stakeholder partnership:

> *"I think that knowledge of sustainability issues is important. At the very minimum, you need to have some basic understanding of sustainability issues; and I have that in my – for my background as a scientist."*

This research finds that the knowledge management cluster is comprised of five competencies. These competencies were demonstrated by both groups of sustainability managers as the foremost competencies to have for managing and implementing sustainability plans.

Appendix M: Detailed Explanations of Problem-Solving Cluster

The figure below presents the numbers of sustainability managers who demonstrated problem-solving competencies.

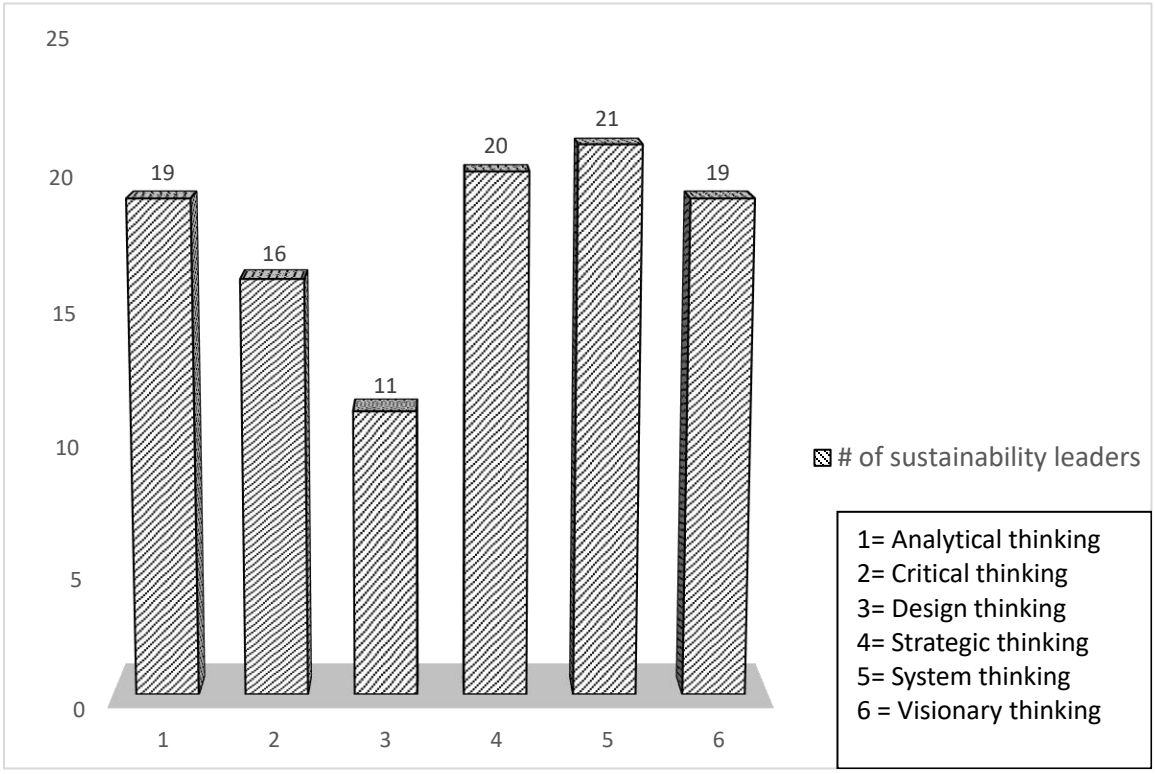

Figure 15. Numbers of Sustainability Managers Who Demonstrated Problem-Solving Cluster

Figure 16 indicates that strategic thinking, system thinking, and visionary thinking are the most common competencies for corporate practitioners. Moreover, system thinking is the most common competency for multi-stakeholder partnership practitioners.

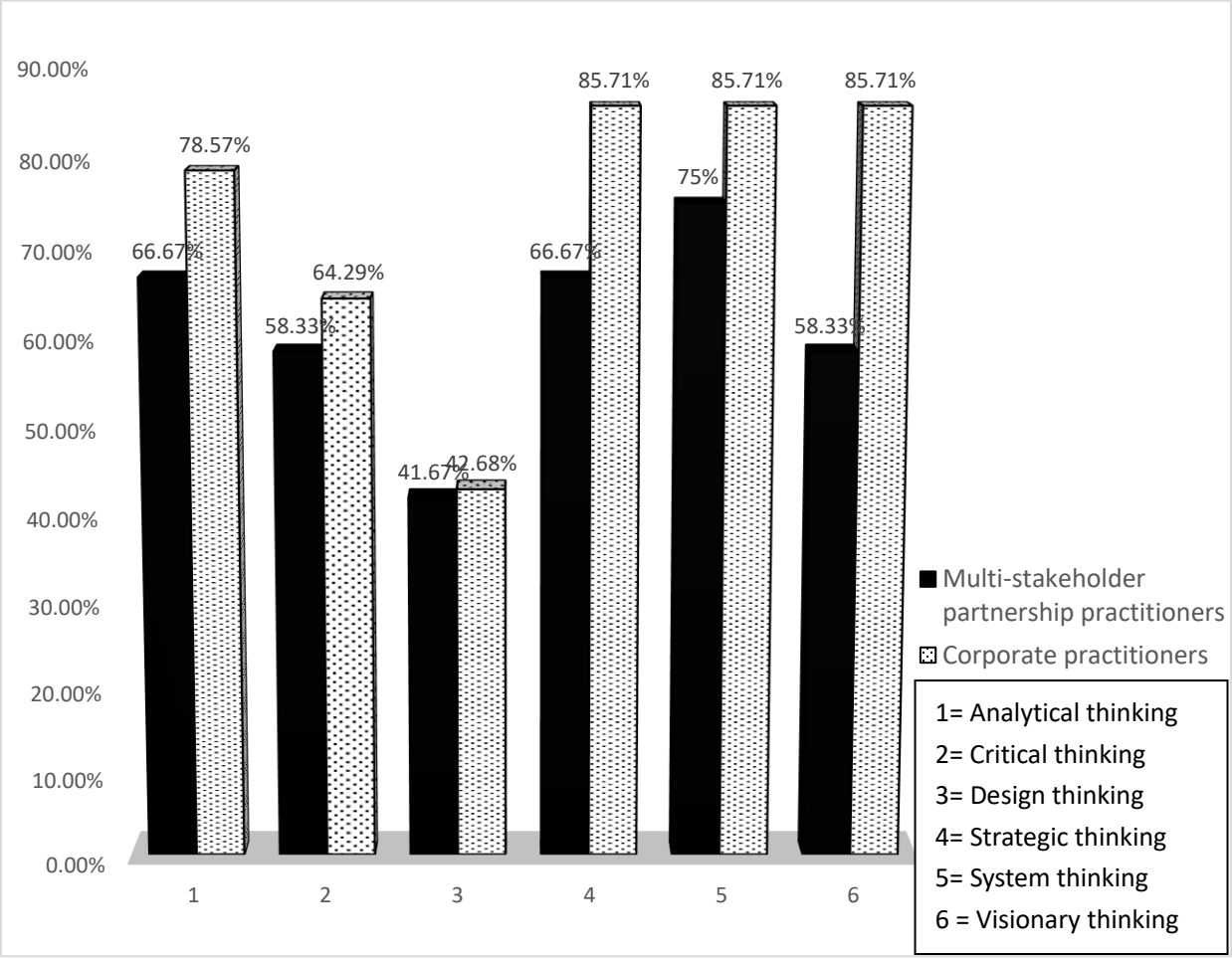

Figure 16. Percentages of Problem-Solving Cluster Appearances of Multi-stakeholder Partnership Practitioners and Corporate Practitioners

Analytical Thinking

Analytical thinking "is understanding a situation by breaking it apart into smaller pieces or tracing the implications of a situation in a step-by-step causal way. It includes organizing the parts of a problem or situation systematically; making systematic comparisons of different features or aspects; setting priorities on a rational basis; identifying time sequences, causal relationships" (Spencer & Spencer, 1993, p. 68). Sustainability managers always use analytical thinking to break down complex issues into pieces and to find optimal solutions. There were 19 sustainability managers demonstrated analytical thinking.

A representative quotation from a sustainability practitioner who manages a sustainability plan with multi-stakeholder partnerships:

"And then something will trigger in your brain, right? 'Oh, that is how we could do

that. I can out that forward if I – if we do this then this will happen'; and so I'm just – you're just thinking through the project management."

A representative quotation from a sustainability practitioner who manages a sustainability plan without a multi-stakeholder partnership:

"So, you have to go through a process to understand what the actual necessary steps are to make this happen, to, you know, pursue this recommendation."

Critical Thinking

Critical thinking is "the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action" (Foundation for Critical Thinking, n.d.). Sustainability managers tend to use critical thinking to evaluate any new information they have gathered from various sources, to identify their priorities, and to identify costs and benefits of their solutions. There were 16 sustainability managers demonstrated this competency.

A representative quotation from a sustainability practitioner who manages a sustainability plan with multi-stakeholder partnerships:

"If [the decision] is something easy to do and it is low risk, it can be done instantly. If there's typically risk to the municipality, either health and safety risks, financial risks, reputation risks, it takes more time. And then we bring together and we assess these things either as a team, or we seek senior leadership advice."

A representative quotation from a sustainability practitioner who manages a sustainability plan without a multi-stakeholder partnership:

"And then for those [identified opportunities] that we as a team, we estimated a savings, and then we did the technical evaluation in terms of whether those emissions were valuable, whether it was worth implementing."

Design Thinking

Design thinking is a creative way to solve challenges. It "incorporates constituent or consumer insights in-depth and rapid prototyping, all aimed at getting beyond the assumptions that block effective solutions" (Brown & Wyatt, 2010, p. 32). Some of the sustainability managers often did a pilot program before implementing the project or program on a larger scale or in the community. Design thinking helps sustainability managers test their ideas and track unknown problems or effects of their project; it also

helps sustainability managers refine their projects. There were 11 sustainability managers discussed having done pilot programs while they were implementing sustainability plans.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"We actually went in and piloted one of the day's training."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"it is a bit of a hard hitting for us because we were hoping to just pilot [greenhouse gas emission reduction program] to see. We didn't want it to just be this big implemented thing because we didn't know if it was going to be worth it; we wanted to test it outright."*

Strategic Thinking

Strategic thinking helps sustainability managers analyse stakeholders, develop group visions, set benchmarks, and integrate new information (Crosby & Bryson, 2005; Emerson & Smutko, 2011; Morse, 2008). In sustainability plan implementation, sustainability managers not only use strategic thinking to analyse their stakeholders' preferences and needs, but also use it to develop the strategic plan for projects and plan implementation, such as identifying strategies for implementing sustainability plans and develop strategic plans which also fit their sustainability plan goals. There were 20 sustainability leaders demonstrated strategic thinking in their work.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"I think being strategic, so being able to offer kind of the city's perspective, and think about other ways that it can help to meet – the program can help to meet the city's needs."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"So, kind of understanding, like, our timeline between now and the end of the program, what we need to get done, when and how and how much it costs, and who we need to work with, and that kind of thing."*

System Thinking

System thinking is "a set of synergistic analytical skills used to improve the capability of identifying and understanding systems, predicting their behaviors, and devising modifications to them to produce desired effects. These skills work together as a system" (Arnold & Wade, 2015, p. 679). System thinking helps sustainability managers understand the governmental system and project implementation system to effectively implement their sustainability plans. For example, the sustainability managers in this study tried to understand how the election would affect their plan implementation process and how the important pieces related to and affected the outcome of the project. There were 21 sustainability managers demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"... what are those linkages [between food and energy] and what are the important pieces and that type of thing that are ... that's going on out there."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"So, you have to go through a process to understand what the actual necessary steps are to make [the project] happen, to, you know, pursue this recommendation."*

Visionary Thinking

As sustainability managers, the ability to define and draw the larger picture of their sustainability plan implementation can be identified as the visionary thinking competency. Visionary thinking "works to integrate a strategic direction of an organization to a long-term destination, which then sets into motion various key elements and processes that work together to effect necessary changes" (Bednarz, 2014, para. 4). These practitioners often have their long-term goals in mind and link these long-term goals with their sustainability plans and projects. Specifically, sustainability managers who have visionary thinking always have their long-term goals in mind while they are identifying prospective projects and finding the best ways of achieving their projects' implementations. There were 19 sustainability practitioners showed they see the big picture and have long-term goals.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"And again, you don't have the human resources to do [too many projects at once] anyway, but – so strategic planning skills, and the ability planners have is the ability*

to think long-term, 20, 30, 40, 50 years."

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"In management, it's important to be able to think the really big picture and to think about consequences from different perspectives: So, what's a counsellor going to care about? What's my man care about it? What's my staff care about? What does the lawyer on the file care about?"*

There were six competencies were identified in problem-solving competency cluster, system thinking, strategic thinking, and visionary thinking were the top three competencies that were competencies discussed by the sustainability practitioners most.

Appendix N: Detailed Explanations of Teamwork and Cooperation Cluster

The figure below presents the numbers of sustainability managers who demonstrated teamwork and cooperation competencies.

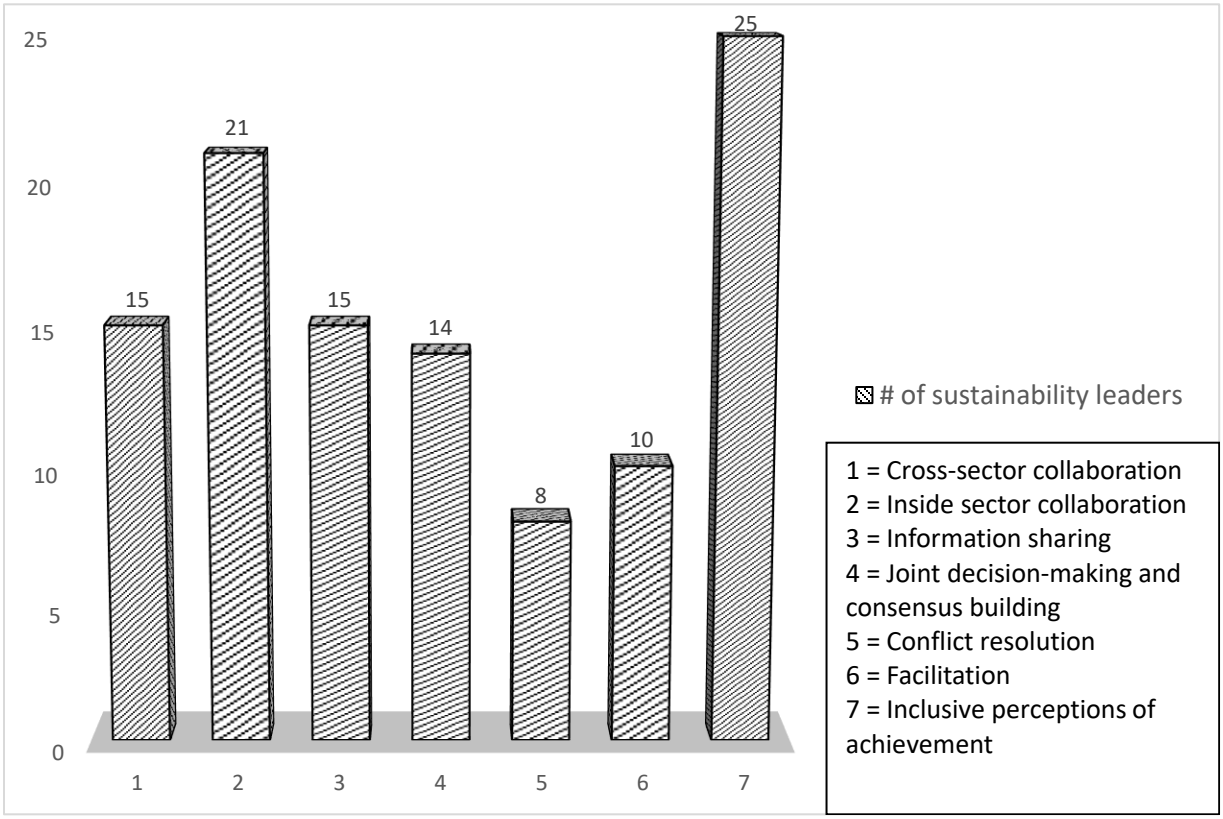

Figure 17. Numbers of Sustainability Managers Who Demonstrated Teamwork and Cooperation Cluster

Figure 18 shows that inclusive perception of achievement is the most common teamwork and cooperation competency for corporate practitioners, cross-sector collaboration and inclusive perception of achievement are the most common competencies in multi-stakeholder partnerships.

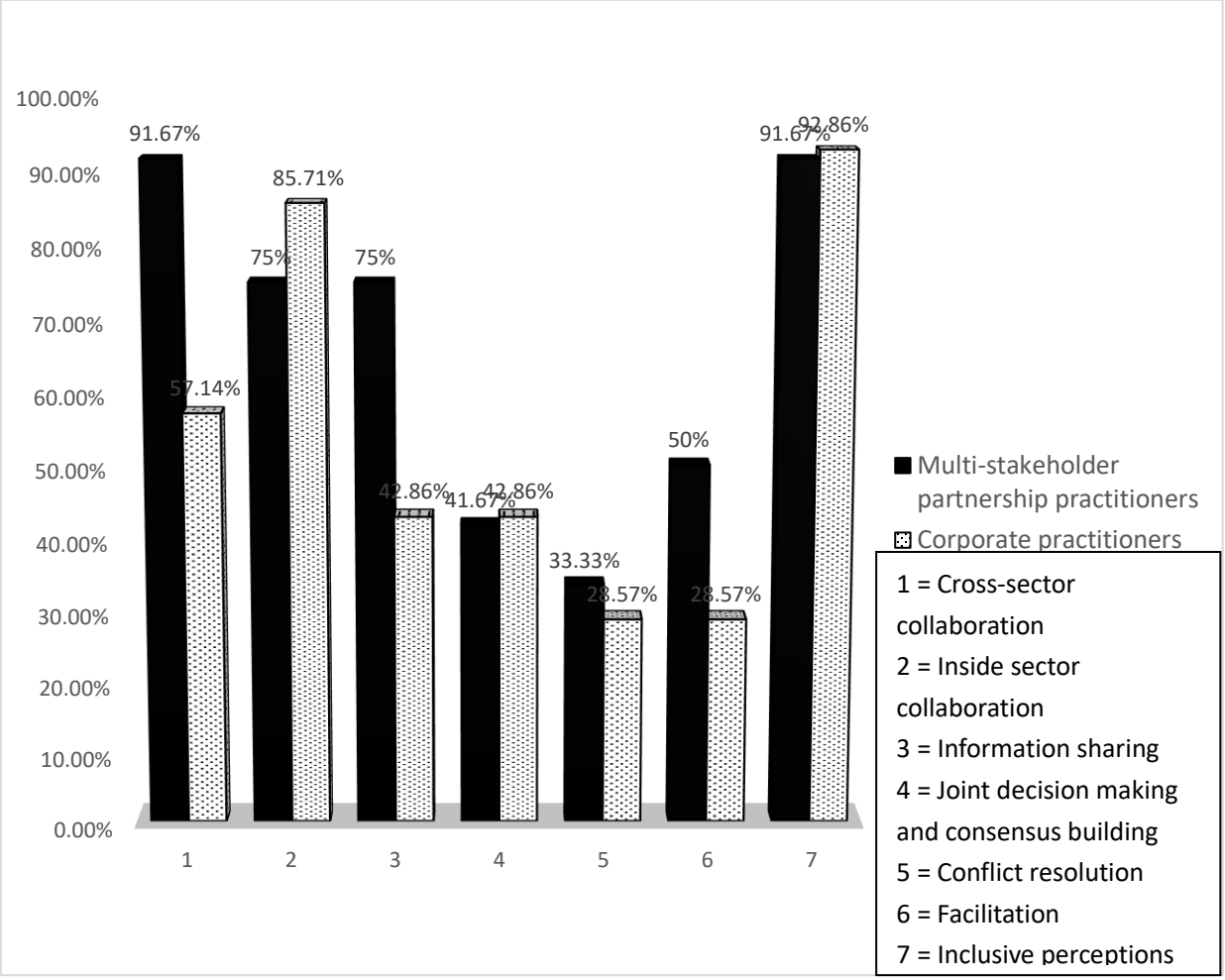

Figure 18. Percentages of Teamwork and Cooperation Cluster Appearances of Multi-stakeholder Partnership Practitioners and Corporate Practitioners

Cross-Sector Collaboration

Sustainability plans can be implemented with a multi-stakeholder partnership, which involves collaboration among three sectors, including the public sector, the private sector, and civil society. Therefore, sustainability managers need to have the ability to collaborate with people from other sectors. There were 19 sustainability managers demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"I was leading for the twelve partners. My comment was, 'We're going to push or we're going to pull, but all together, we're going to move forward'."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"So, it was a partnership between [private company], a company who already had a utility company and [the other utility company]; so it's a partnership between us three, and - so if the City asked, like, what we did is [we] just rented our roof space so we didn't really pay any capital costs."*

Inside Sector Collaboration

Sustainability plans can be implemented with a multi-stakeholder partnership or without a multi-stakeholder partnership. This inside sector collaboration refers to collaborating with people from the same sector. Specifically, this could be the collaboration among different departments in the same municipality, and the collaboration among different municipalities or different levels of governments. There were 21 sustainability managers demonstrated they had collaborated with other municipalities while implementing the sustainability plans.

Representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"I also work closely with our forestry team to look at ways we can increase our urban forest canopy, knowing that urban forest is one of our largest things for carbon dioxide. Within the community, this providing a number of other benefits."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"I do have a staff that works as part of the sustainability office and primarily responsible for those areas. And then in a lot of supporting areas, I work with other departments on the work that they do in order to ensure the aligning with sustainability."*

Information Sharing

The teamwork and cooperation cluster also includes the information sharing competency. The emphasis of this competency is on sharing information within the team. Although It seems that information sharing is similar to other communication competencies, there are, however, some differences. While the purpose of information is necessary in the implementation of the sustainability plan, the purposes of other communication competencies is to introduce sustainability and sustainability plans, to inform and update the progress of the plan, and to exchange ideas. Sustainability practitioners need to have

the ability to accurately and effectively share their knowledge and information with the team. This information can be shared through formal presentations, meetings and reports, or through face-to-face dialogues. There were 15 sustainability managers demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"We have a blog, takeactionburlington.ca blog. So, it's for the community and staff to sort of raise awareness of environmental sustainability issues and also profile other things that are going on in the community that we think, you know, people should know about."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"So, we've been doing a lot of work with finance officers. We're producing a new guide for them, and it's telling the story of how to incorporate natural capital considerations into your financial planning."*

Joint Decision-Making and Consensus Building

Like consensus building, sustainability managers also need to be able to make joint decisions. Sustainability managers need to have the ability to work with other team members to make decisions either as a team member or leader. They need to present their interests while at the same time listening and understanding others' interests. Sustainability practitioners acting as facilitative leaders need to have the ability to guide the team to make joint decisions (Emerson & Smutko, 2011). There were 11 sustainability managers demonstrated joint decision-making.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"Where we would get ourselves together for, you know, two or three days, and we would go and start developing outcomes and goals and mission, align our implementation and thinking processes on how we got from where we are now to where we wanted to be, that was a really good work experience with, you know, a not-for-profit."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

"So, we finish the work as a team in collaboration, so [operators and staffs from all divisions] feel okay, [with] what's going on. So, they will think they're apart, they're whatever about the process, the equipment, and we could just as a team just, okay, what if we do it this, can we do this way, that way. Then eventually whatever decision we make is a joint decision, right? And, that works."

Conflict Resolution

Due to interdependency between team members, conflicts happen all the time (Mohr & Spekman, 1994). Conflicts among team members (Emerson & Smutko, 2011), but also among stakeholders (Williams, 2002) can take place. Hence, conflict resolution plays a necessary role for successful collaboration and teamwork. Conflict resolution involves "taking the interests of the different parties into consideration when an agreement is made" (Rousseau, Aubé, & Savoie, 2006, p. 558). To create and maintain a collaborative and harmonious environment, sustainability managers need to have the ability to resolve conflicts in the team. Eight sustainability managers demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

"Sometimes there was relationship management issues, so sometimes, you know, your staff will become, you work closely with, like a partner or with another group, staff members. It's almost like, you know, they just work so closely that the personality issues come out, right? They get annoyed, they get pissed off, they get angry. So, it's just, you know, coming in as a different voice that says, you know, like, "How can we work better together?"

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

"We're hearing this from all members of the action team that I don't feel supported, I don't feel supported. And so, what we did is, we actually just brought the steering team in with the action team, and said, 'Okay, we just had a frank conversation that we need you to go out, and we need you to talk to people, and here's what you need to say'. And we gave them material to work with, so we gave them a presentation, and we gave them notes, and we gave them things that they could hand out to their staff, and that did help."

Facilitation

Different from facilitative leadership, these sustainability managers act as the facilitators in meetings and workshops. "Group facilitation is a process in which a person who is acceptable to all members of the group, substantively neutral, and who has no decision-

making authority, intervenes to help a group improve the way it identifies and solves problems and makes decisions, in order to increase the group's effectiveness" (Schwarz, 1994). Sustainability managers tend to set the meeting, bring the right people to the meeting, create the meeting agenda, and host the meeting. Ten sustainability practitioners demonstrated that they have the ability to work as facilitators.

Representative quotations from the multi-stakeholder partnership practitioners who manage sustainability plans with multi-stakeholder partnerships:

> *"If in fact someone at a meeting is dominating, whether it's positive or negative, we will eventually, if it's our meeting, we will slow them down and ask them basically to allow others to get involved. They cannot dominate the agenda."*

> *"The role that municipal governments would have in this, it really is on this idea of, you know, acting as the facilitator, so that, to try to, you know, help guide people through the process."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"if there's any problem that came up similar to the LED project, we address it right away; not let prolong too long. And, that was part of my duties to bring up these issues immediately and bring everyone to the table and not necessarily find the solution but facilitating an environment where we can find the solution."*

Inclusive Perception on Achievement

Getha-Taylor (2008) and Spencer and Spencer (1993) identified that one of the teamwork and cooperation competencies is having an inclusive perception of achievement. This implies that sustainability leaders always see their project outcomes as a team collaboration outcome, and always use "we did this" while they are describing the events that are memorable. 25 sustainability leaders demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"I was doing what council wanted, I was doing what chambers wanted, I was doing what came out of those things, right? So, to me it's a we thing, it's not me even though I know me did it."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"My job was to, you know, find the resources to make sure that when Council directed us to incorporate nature services into our operations and decisions, there was no guide for it; there was nowhere you could find. So, we created that from scratch, but we worked as a team."*

The research found that the teamwork and cooperation cluster is essential for sustainability practitioners to manage and implement their sustainability plans. It is comprised of eight competencies, such as cross-sector collaboration, information sharing, facilitation, etc.

Appendix O: Detailed Explanations of Team Leadership Cluster

The figure below presents the numbers of sustainability managers who demonstrated team leadership competencies.

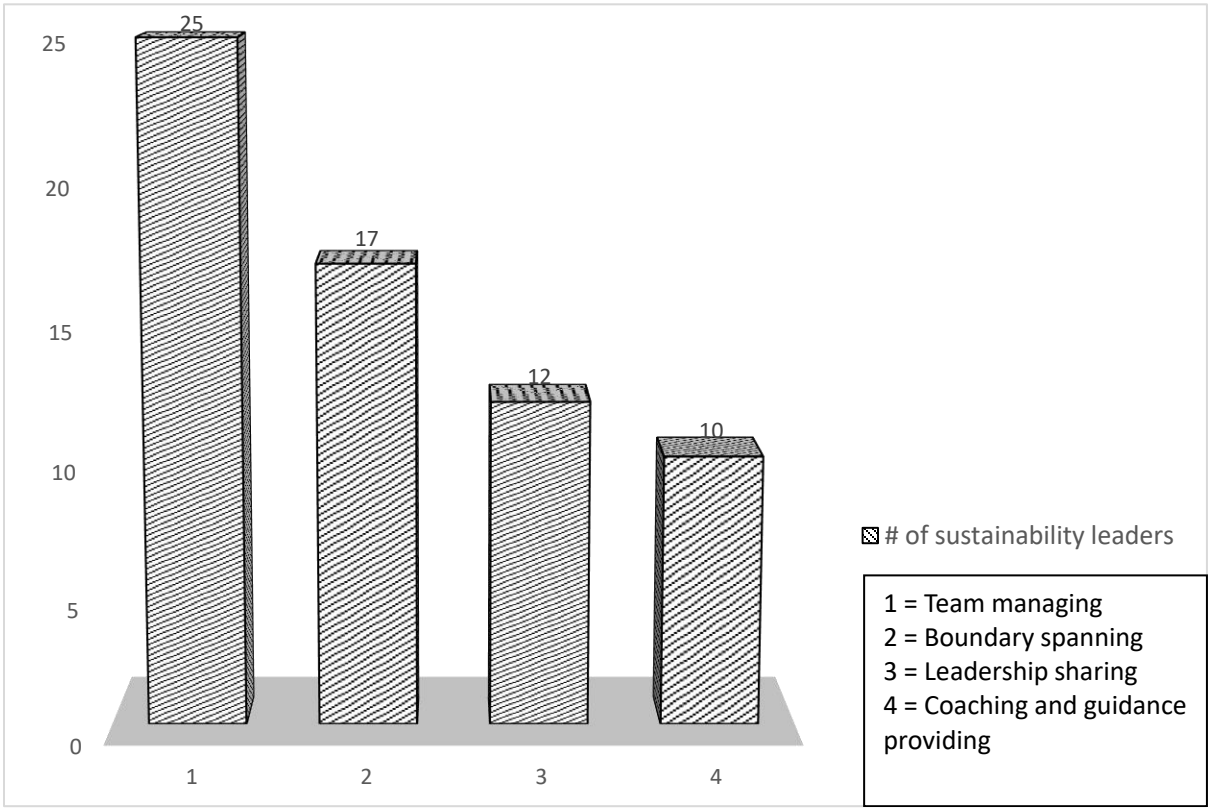

Figure 19. Numbers of Sustainability Managers Who Demonstrated Team Leadership Cluster

Figure 20 shows that team managing is the most common team leadership competency for corporate practitioners as well as for multi-stakeholder practitioners.

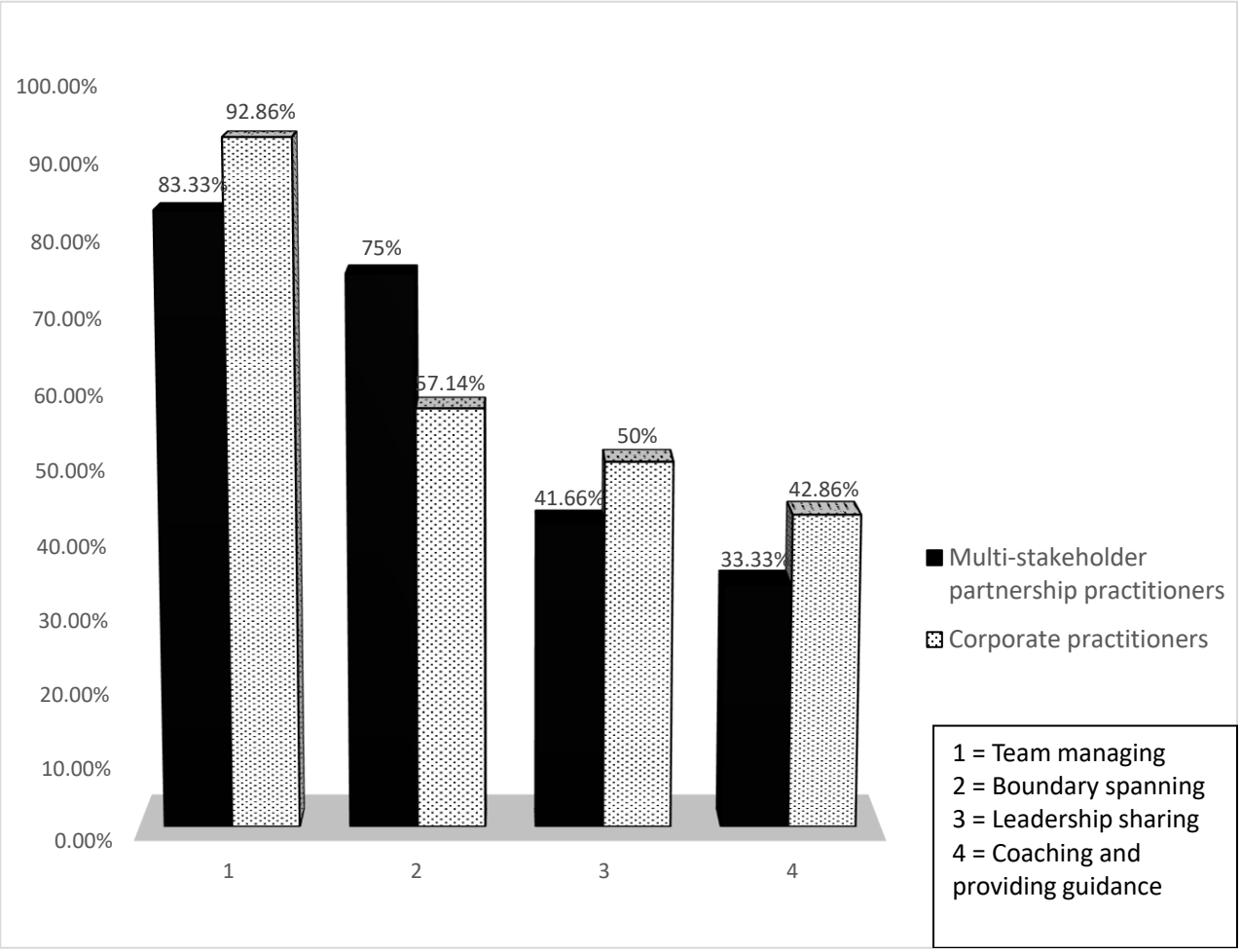

Figure 20. Percentages of Team Leadership Cluster Appearances of Multi-stakeholder Partnership Practitioners and Corporate Practitioners

Team Managing

The team leader has "the intention to take a role of a team or other group. It implies a desire to lead others; which is generally shown from a position of formal authority" (Spencer & Spencer, 1993, p. 64). This can be shown as various behaviors; for example, informing the team, using leadership competencies to promote team productivity, making sure the team meets their needs, and ensuring team members buy into leaders' missions and agenda, etc. (Spencer & Spencer, 1993). Sustainability managers who work as traditional leaders, often having majority rule over the team, always lead and oversee team performance. 25 sustainability leaders showed they played the team leader role while implementing sustainability plans.

A representative quotation from a multi-stakeholder partnership practitioner who

manages a sustainability plan with multi-stakeholder partnerships:

> *"I manage 13 people or 15, 15 people in three different departments. Four, sorry, four different areas, let's call them units, four different units. There's the environment team, the district energy team, the corporate energy manager, and the community energy management team."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"I guess my role is, one, identifying that it needed to be done and assigning the tasks to our staff."*

Boundary Spanning

In this paper, boundary spanners are considered to be "individuals who have a dedicated job role or responsibility to work in collaborative environments who co-ordinate facilitate and service the processes of collaboration between a diverse set of interests and agencies" (Williams, 2013, p. 18). Sustainability leaders who work as boundary spanners tend to act as a bridge or channel to bring people together, such as bringing together people with similar interests. 17 sustainability practitioners demonstrated they had worked as boundary spanners.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"I guess the other questions regarding stakeholders and either sectors and across the city is also making those linkages and understanding where opportunities might be in … like, whether it's with private sectors or NGOs and that type of thing to advance this work."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"… find the resources to make sure that when Council directed us to incorporate nature services into our operations and decisions …"*

Leadership Sharing

Leaders who work in teams often share their leadership, power, credits, and goals, and is identified as the center of collaboration (O'Leary et al., 2012). Sustainability managers share leadership with other team members when it is necessary. Such managers let other experts lead the team when they consider them to be more qualified. At the same time,

these managers work as team members while they hand over their leadership. 12 sustainability practitioners demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"You're not expected to carry the burden on yourself. We've got a lot of people who are very keen, are very supportive, and there's a lot of agendas out there, but a lot of people have a lot of good ideas"*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"... then it's about giving the freedom and coaching other people on the team to take ownership and to run with, you know, bring ideas forward, bring new ideas forward."*

Coaching and Guidance Providing

As the project manager and/or team leader, the sustainability practitioners in this research often coach and guide their colleagues. This could be by providing potential solutions and guiding colleagues in the right direction to solve problems. 10 sustainability leaders demonstrated they had coached and provided guidance to their team.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"My role is to keep people focused on the prize; keep people focused on what we're trying to achieve, and kind of push through the challenges to get to the outcome. Find a way to get through, find solutions to challenges that we're facing."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"My role was to advise my department on, you know, the recommended options that we can pursue to make the project still feasible, compromise with some other costs."*

Working as team leaders, sustainability practitioners need to have some team leadership competencies, such as the ability to manage the team, work as the boundary spanner, share leadership, and coach and provide guidance.

Appendix P: Detailed Explanations of Engagement and Relationship Management Cluster

The figure below presents the numbers of sustainability managers who demonstrated engagement and relationship management competencies.

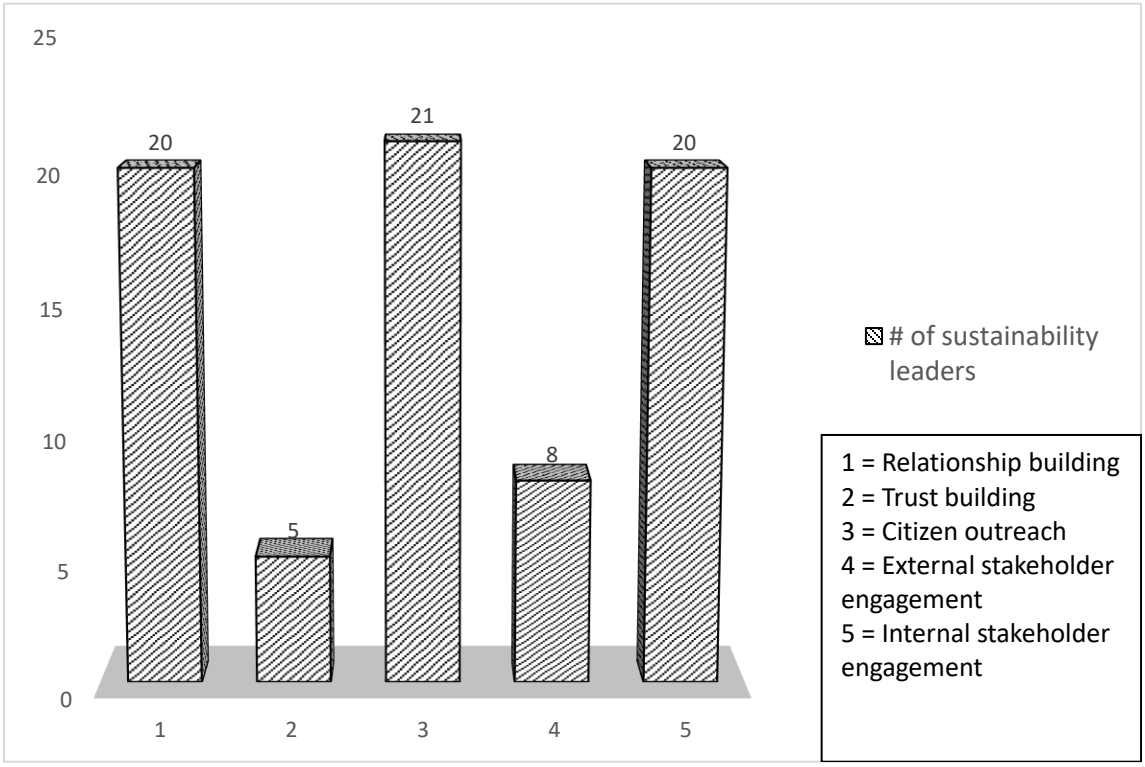

Figure 21. Numbers of Sustainability Managers Who Demonstrated Engagement and Relationship Management Cluster

Figure 22 presents a bar graph of the percentages of multi-stakeholder partnership practitioners and corporate practitioners who demonstrated having engagement and relationship management competencies.

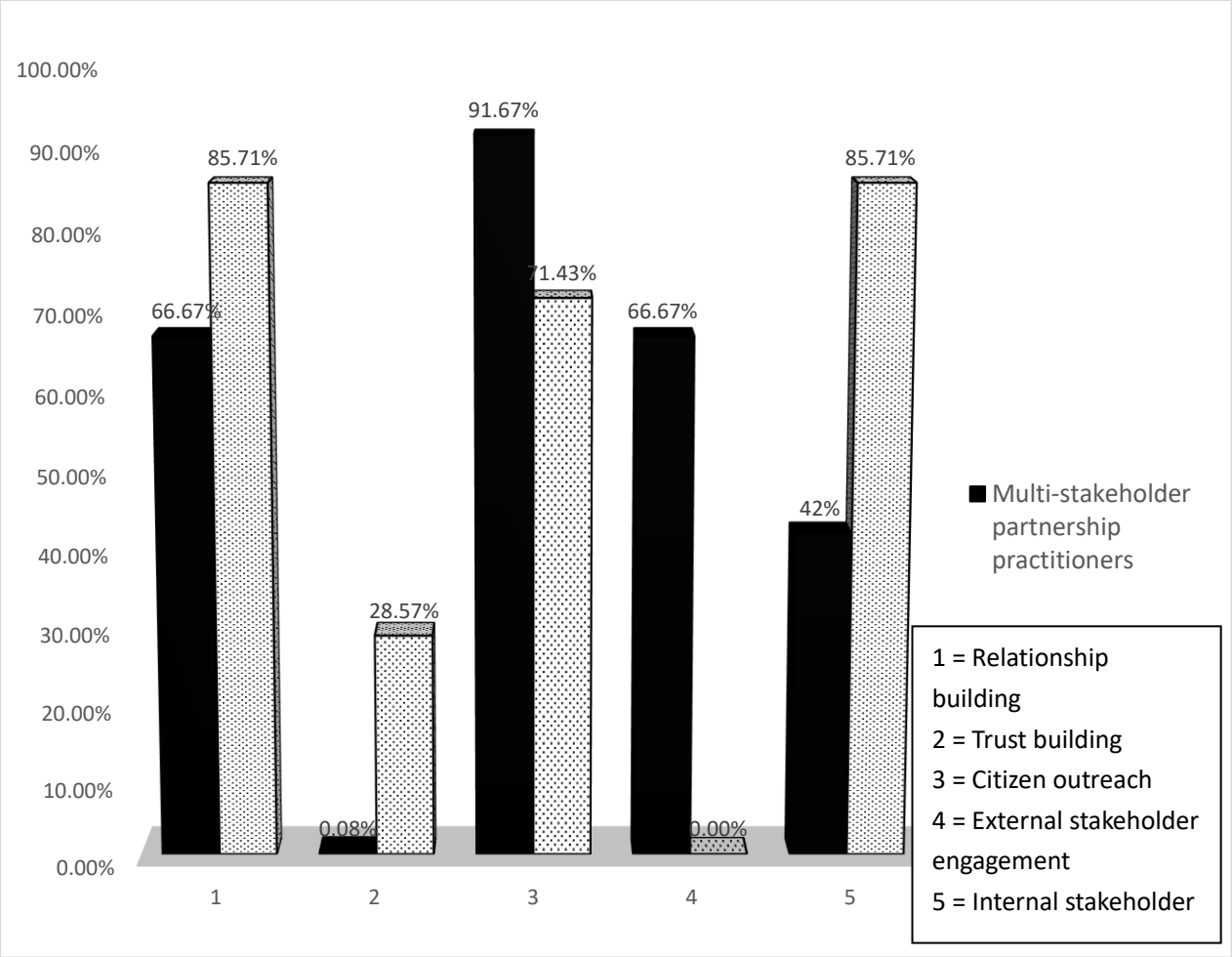

Figure 22. Percentages of Engagement and Relationship Management Cluster Appearances of Multi-stakeholder Partnership Practitioners and Corporate Practitioners

Relationship Building

Relationship building "is working to build or maintain friendly, warm relationships or networks of contacts with people who are, or might someday be, useful in achieving work-related goals" (Spencer & Spencer, 1993, p. 50). This networking building process can happen within individuals' own organization, with people from the same sector, with people from other sectors, or with people from the community (Spencer & Spencer, 1993). These relationships can be formal relationships or personal relationships. Sustainability practitioners regard relationship building as an important competency for engaging stakeholders and implementing sustainability plans. 20 sustainability practitioners demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

"So, a lot of [projects] started with relationships. You know, some people know people, maybe that's their specialty, and so, we made a lot of, we had a lot of acquaintances that we turned into relationships. We just built those relationships up, built them more."

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

"I think probably the rate of relationship building with the other facilities, like a lot of them were fire departments, so, you know, myself going out and meeting with the staff at those facilities, like the fire chiefs, and make sure they were on board."

Trust Building

Some of the sustainability managers mentioned that it is important to build trust in the engagement process. Trust building is defined as "the process of establishing respect and instilling faith into followers based on leader integrity, honesty, and openness" (Sosik & Dionne, 1997, p. 450). If there is trust in the relationship between all parties, they can enjoy effective communication and productive interdependency (Sosik & Dionne, 1997). This trust building competency helps sustainability managers create and maintain the relationship they have built before, which is important for them in their engagement with various people during sustainability implementations. Sustainability managers need to gain trust from the community and stakeholders to engage and attract them to participate in the sustainability plan implementations. At the same time, this trust building process can help practitioners manage their teams. Five sustainability practitioners demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

"The famous saying, speak truth to power, is very, very true because you have to continually earn the trust of the politicians, and so political acuity is important. So is respect for citizens."

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

"So, if you're trying to gain the trust of somebody in the recreation facility, well, you should probably understand what their facility does and how it works and the equipment they have in it, and be able to express to them how the project you're doing fits with their systems and processes and technology."

Citizen Outreach

The lack of public involvement in climate change practices is due to the lack of effective action on climate change at the local level (Sheppard et al., 2011). The lack of public awareness and the capacity to support and participate in solving climate change issues tend to stem from the complexity of the scientific research, limited information on the socio-economic perspective, insufficient salient information to the community, and ineffective citizen outreach processes (Sheppard et al., 2011). Sustainability plans involve community participation; hence, sustainability practitioners need to know and be able to outreach with communities through various ways effectively. Sustainability managers tend to engage with community members through formal public outreach activities such as workshops and presentations. Some of the managers of this study also engaged with community members in informal ways, such as talking with them while participating in community events. Community outreach activities aim to inform the community about sustainability to attract the community, to consult with community members on sustainability projects, and to get feedback from them on existing sustainability projects. There were 21 sustainability managers demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"Getting the community engaged in that perspective is very much about being on the frontline working with the residents directly, attending events, providing resources that are free for community residents to take away and implement."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"The work was to really do some positive and through community engagement to understand the nature of the anxiety and how we could develop a program that would allow the community to move forward because they certainly wanted more convenient recycling and they wanted to have greater waste diversion."*

External Stakeholder Engagement

Stakeholders are the main components of sustainability plan implementation. As the sustainability leadership literature describes, stakeholder engagement not only helps sustainability managers in implementing their sustainability plans, but also affect and help these stakeholders toward sustainability (Crews, 2010; Lacy et al., 2009; Quinn & Dalton, 2009). Sustainability practitioners need to know how to engage with their main stakeholders as well. Different from community engagement, stakeholder engagement aims to create collaborative partnership. More specifically, stakeholders, such as local utility companies, local consulting companies, and local NGOs, are those who will really

help and collaborate with sustainability leaders to do the implementation. There were 12 sustainability leaders demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"I think you sort of have to keep the conversations going. You have to, you know, profile your stakeholders. You have to let them know that they're important to the plan and the future of the community."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"It's people actually getting engaged in the process and helping to make the decisions of what types of things we tackle, and what types of things we could do, and, you know, really get people involved in the conversation."*

Internal Stakeholder Engagement

As mentioned in previous sections of this study, sustainability plan implementation involves various levels of engagement. Stakeholder engagement, in particular, involves internal stakeholder engagement due to the type and the focus of the plan. If the plan is implemented without a multi-stakeholder partnership, the sustainability leader who is involved in the process needs to be able to know how to engage with colleagues from different departments. To integrate environmental policy into the government sector, it involves "the extent to which it has merged environmental objectives with its characteristic sectoral objectives to establish an environmentally prudent basis for its decision-making and implementation" (Lafferty, 2004, p. 205). Similarly, if the sustainability leader wants to implement a corporate-level sustainability plan into their municipality, it is necessary for these leaders to know how to engage with their colleagues. 20 sustainability leaders demonstrated this competency.

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"I said we wrote a couple of reports to Council, so our staff would see those reports. I did a couple of presentations at our staff meetings to bring people up to speed. You know, had other experts come and talk about it, too. So, you know, it's just, it was an ongoing process."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

"The next thing was to identify all of those areas that the City was involved with that - where we could influence sustainability, so we again worked with our Steering Committee to define in that case 10 different policy areas; and then it was a very, it wasn't that long, but it was a very comprehensive process working with individual departments having workshops."

Most of the sustainability leaders in the study mentioned that the engagement cluster is important for implementing sustainability plans. This research found that it is comprised of five competencies such as relationship building and community engagement, etc.

Appendix Q: Detailed Explanation of Impact and Influence Cluster

The figure below presents the numbers of sustainability managers who demonstrated impact and influence competency.

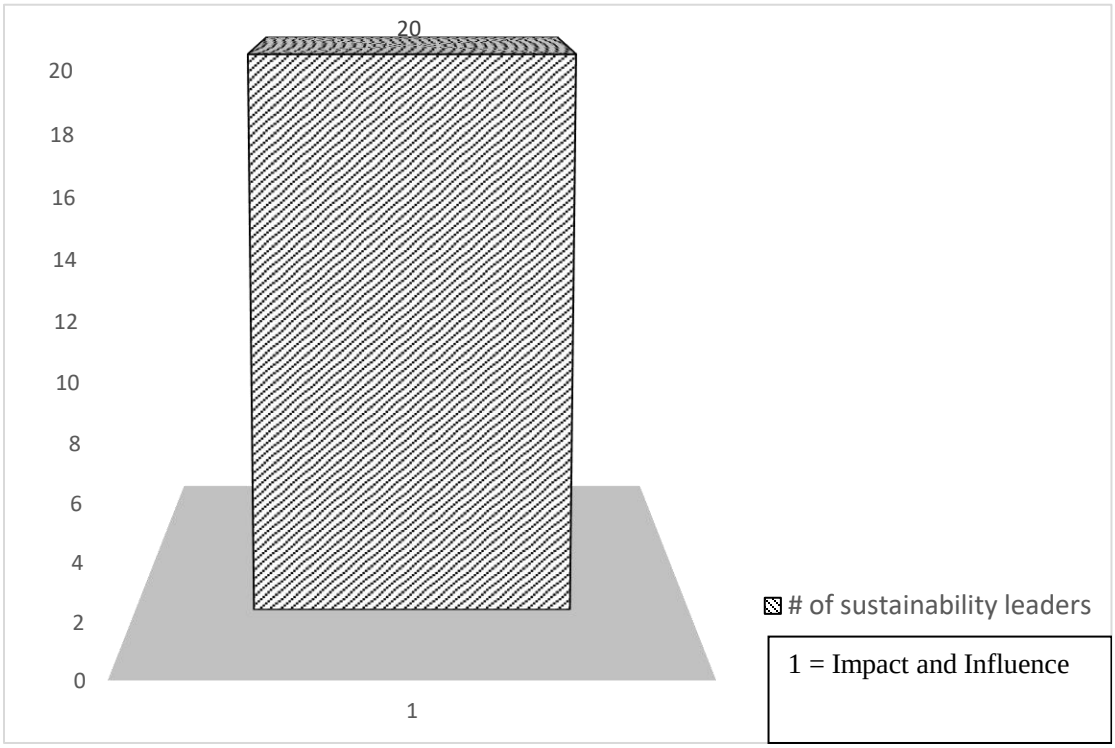

Figure 23. Number of Sustainability Managers Who Demonstrated Impact and Influence Cluster

Figure 24 presents a bar graph of the percentage of multi-stakeholder partnership practitioners and corporate practitioners who demonstrated having impact and influence competency.

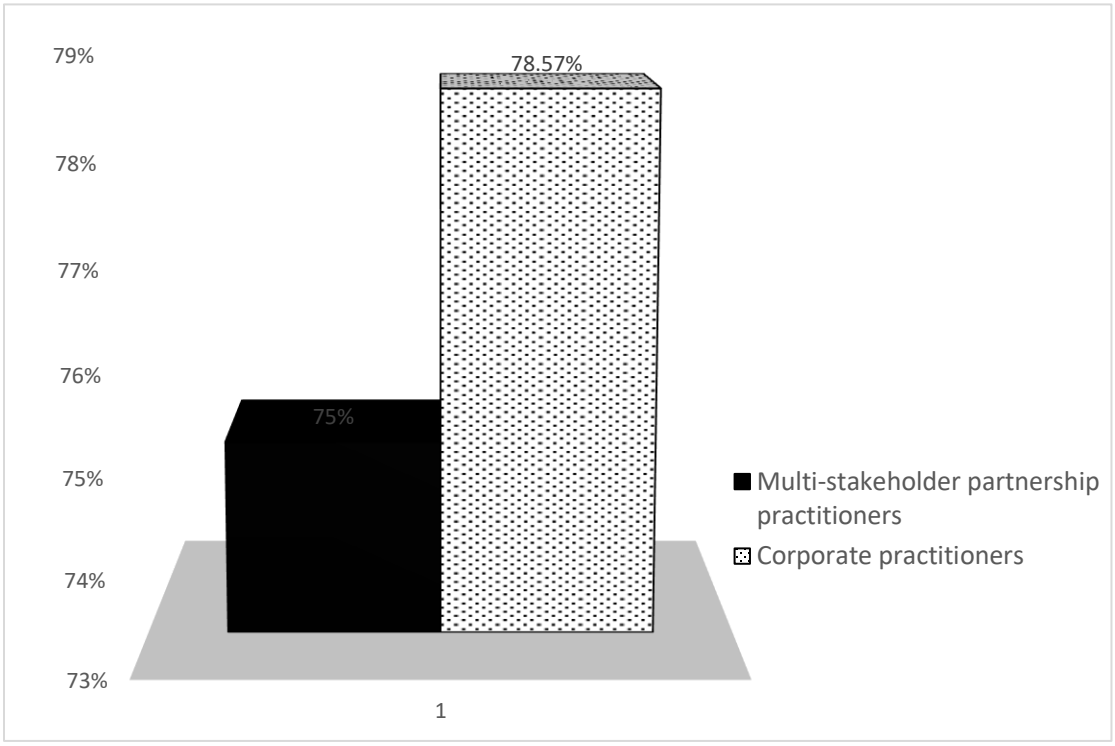

Figure 24. Percentage of Impact and Influence Cluster Appearances of Multi-stakeholder Partnership Practitioners and Corporate Practitioners

A representative quotation from a multi-stakeholder partnership practitioner who manages a sustainability plan with multi-stakeholder partnerships:

> *"I've always viewed that for people to adjust or change behaviours, it always must be viewed as something that is a positive step; not a negative step."*

A representative quotation from a corporate practitioner who manages a sustainability plan without a multi-stakeholder partnership:

> *"You need to be able to show, through your own actions, a commitment to the very things you're asking other people to do. And, I think that goes a long way to motivate people if they also see you behaving in the same way that you're asking for everyone else to move forward with."*