

Access, Participation and Sustainable Development Goal 4: A Systematic Literature

Review of Technical and Vocational Education and Training

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Abstract

Recent technological advancements, demographical changes, and international migrations have compounded the social, political, and economic challenges confronting most nations. These global changes demand the education and formation of youths with specific skill sets who can work and adapt to the challenges of the 21st-century workplace. Technical and vocational education and training (TVET) is recognized for its pivotal role in addressing the concerns emanating from these 21st-century developments. Research has suggested that TVET contributes to sustained economic growth and development, reduces societal inequalities, and enables a sustainable future. Within the context of the United Nations' (UN) Sustainable Development Goals (SDG), TVET occupies an increasingly prominent place. This review of the scholarly and grey literature explored the rationale behind the resurgence of TVET globally and examined the present state of, and issues and concerns with, the expansion of TVET within the global and Canadian contexts. Findings show that economic, social justice and sustainability rationales account for the renaissance of TVET. Also, both the Canadian and global literature suggest a continued stratification of access to and participation in TVET for students from different sociodemographic groups (e.g., socioeconomic status, race and ethnicity, geography). The study found that cultural, religious, institutional, and historical factors affect the participation of students from diverse social backgrounds to TVET. My research also identified attractiveness (status) and funding as the primary issues hindering the utilization of TVET potential in addressing societal challenges from a global as well as the Canadian context.

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CHAPTER ONE: INTRODUCTION

The United Nations Educational, Social and Cultural Organization (UNESCO) identified technical and vocational education and training (TVET) as a strategic instrument for the reduction of inequalities in education, employment creation, poverty reduction, and the sustainability of the environment (Marope et al., 2015; UNESCO, 2015). The United Nations' (UN) Sustainable Development Goals (SDGs) 4, 5, 8, and 13 have specific objectives related to TVET, reduction of gender disparities in school, and poverty reduction (Rosa, 2017b; UNESCO, 2015). This emphasis on vocational education as an educational strategy for poverty reduction, job creation, and sustainability is not new but reaches back into the mid-19th century when European and North American nations, as emerging capitalist and, later, socialist states, sought to improve the living conditions of their working-class communities while responding to the needs of emerging manufacturing sectors for skilled labour (A. Taylor, 2016; Tikly, 2013).

In the mid-to-late 20th century and, more recently, the first two decades of the 21st century, vocational and technical education has increasingly gained recognition as a panacea for alleviating a wide range of societal ills (e.g., access to education, gender inequalities in education, skills development to meet labour market needs, poverty reduction). The discourses around the need for an effective TVET system, including the education of teachers for TVET programs in the K-to-12 system, are, at times, ambiguous and unclear. Specifically, it is unclear what constitutes TVET, who should participate, which institutions should deliver TVET program—and for whom—and what the benefits of these programs are to individuals, corporations and emerging industries, and the state and society. Thus, these ambiguities historically have often led to the streaming of some

categories of students, especially at the high school level into TVET streams (A. Taylor, 2016). Consequently, such streaming practices significantly contribute to the historical status challenges that have engulfed the TVET sector and the recognition of its relevance for modern societies—with some students regarding TVET as an educational alternative for second-class students.

In this literature review, I address these and related issues as I seek to examine why TVET has been identified as a strategic measure towards supporting the realization of the SDGs in emerging/developing nations as well as mature economies of the North and West. More specifically, I engage in a conversation that seeks to define TVET and identify why the state needs to invest in technical and vocational education, particularly at the postsecondary level. Not unexpectedly given the breadth of this inquiry, I leave more questions unanswered than answered.

Background of the Study

The stark realities of poverty, societal inequality, and youth unemployment continue to impede individual and societal growth in developed and developing countries alike (Comyn, 2018; Hilal, 2017; Rojewski, 2009). The rapid pace of technological change such as digitization and technological advancement, climate change, migration, and demographic shifts within society has compounded the seemingly intractable challenges of poverty inequality and unemployment, creating a global environment of uncertainty (Marope et al., 2015; Rojewski, 2009; UNESCO-UNEVOC, 2018). For example, a technological change driven by advances in machine learning has undermined the idea of jobs for life; many occupations are becoming obsolete or vastly depleted as a result of the application of advances in computational sciences to the labour market, especially with the emergence of artificial intelligence while, at the same time, creating

promising avenues for the creation of new employment or occupational categories (UNESCO-UNEVOC, 2018). Countries are challenged to provide education in an enabling environment that equips their youths with the desired skills required to keep pace with the rapid transformations occurring in the global economy.

The Organisation for Economic Co-operation and Development (OECD, 2012a) argued that *skills* had become the global currency of the economies of the 21st century. These “21st-century” or “future ready” skills are distinctly different from skills that were required in the 18th to 20th centuries. Twenty-first century skills, unlike physically related skills of the early to mid-20th century, focus on knowledge, competencies, and transferable skills (Comyn, 2018). These 21st-century skills and competencies include, amongst others, critical thinking, creativity, collaboration, communication, information literacy, media literacy, technology literacy, and flexibility (Stehle & Peters-Burton, 2019).

Some scholars and commentators have categorized such skills and competencies into three general themes: learning and innovation skills (critical thinking and problem solving, communications and collaboration, creativity and innovation); digital literacy skills (information literacy, media literacy, information and communication technologies [ICT] literacy); and career and life skills (flexibility and adaptability, initiative and self-direction, social and cross-cultural interaction, productivity, and accountability; Trilling & Fadel, 2009). As the world evolves, young people, employers, and governments have become increasingly concerned about how well education and schooling will equip individuals with the transferable skills required to actively participate in and navigate the labour market as well as move between occupations within and across sectors effectively (Comyn, 2018; Stehle & Peters-Burton, 2019; Trilling & Fadel, 2009).

A skilled and well-educated workforce, thus, is regarded as essential for individual, economic, and societal development for all nations and communities. Kopatz and Pilz (2015) posit that an “improvement in the skills levels of a country’s population generally has a positive effect on the employability of its people and, consequently, on its economic growth” (p. 310). Rojewski (2009) proposes that TVET practitioners, in particular, are expected to develop, adapt, and redesign educational strategies and programs to respond to these challenges. The OECD (2012a) outlined a comprehensive and systematic skills strategy that provided an integrated and cross-governmental approach to meeting the skills demands of an unpredictable labour market.

In Canada, there is a significant public concern—as expressed by members of the press, employers, and elected officials—about the pervasive skills mismatch that presents a recurring challenge in most Canadian provinces and territories (Mahboubi, 2019; Miner, 2014; Sullivan, 2017). A 2016 survey showed that some 68% of Canadian employers found it difficult to identify candidates with the requisite skills to participate efficiently in the labour market (Perry, 2016). Miner (2014) asserts that the skills mismatch in the country is multifaceted and transcends a mere issue of a supply-demand with Canada being confronted with the challenge of both underemployment (overskilling) and overemployment (underskilling) across provincial boundaries and, often, within provinces. Mahboubi (2019) found that 13% of Canadian employees are either over- or underskilled, with significant variation across social groups. More specifically, among all employees who have advanced educational qualifications, women, immigrants, and older workers are more likely to be underskilled (Mahboubi, 2019).

This phenomenon is partly attributed to choices made by Canadian students to pursue qualifications in more academic (e.g., university and university preparation)

pathways, which possess limited employability prospects (Sullivan, 2017), and not in traditional vocational (e.g., apprenticeship and trades) focused pathways for which there may be greater employment opportunities. For instance, the Council of Ontario Universities' 2019 pre-budget submission to the Government of Ontario indicated that job insecurity was becoming a significant concern for Ontarians (Ontario's Universities, 2019). Particularly, Ontario's Universities (2019) referred to the doubling of temporary employment from 4.7% to 10.7% within the period of 1989 to 2016. With the recent spate of technological advancements and their impact on the changing nature of work, Ontario's Universities (2019) estimated that 42% of Ontario's labour force is at risk of being affected by automation in the next 10 to 20 years.

To avert unemployment concerns, there is a need to address education especially at the postsecondary level and the choices made by prospective students. Although education (K–12, postsecondary, and non-postsecondary employment) has, over the years, been part of political and policy measures to confront these challenges, an often-overlooked component of developing a skilled and well-educated workforce in Canada and elsewhere has been the provision of robust technical and vocation education services. TVET, also referred to as career training education (CTE), has suffered status challenges and has played as a “second-fiddle” to the mainstream, academic, or general education in most of the world—in developed and developing countries alike (Marope et al., 2015; A. Taylor, 2016; Winch, 2013). Individuals and parents may see or often see TVET as an educational pathway for low academically performing students and as preparatory ground for second-class citizens (lower socioeconomic groups, marginalized and racialized communities; A. Taylor, 2016). Moreover, the TVET sector has received little

governmental attention and funding over the years (Kopatz & Pilz, 2015; Lamb, 2011; Marope et al., 2015), especially in developing countries (African Union, 2007; Asian Development Bank, 2014; Siriwardene & Qureshi, 2009; Winch, 2013).

The inferior status and funding from the government in both developed and developing economies have conspicuously affected the participation of students in the sector. That is, the perceived inferior status of technical and vocational education pathways discourages students from seeking education for employment in fields supported by TVET. Marope et al. (2015) indicated that the share of students enrolled in TVET at the secondary level had remained stagnant since 1999, particularly in developed nations. Consequently, existing research studies on TVET and attention have mostly focused on developing economies as these nations and economies are most receptive to the promise of TVET to create employment ready and trades-skilled workers (Alagaraja & Arthur-Mensah, 2013; Hilal, 2017; Nilsson, 2010; Oketch et al., 2009).

However, with the adoption of the SDGs in September 2015, industry, industry associations, intergovernmental organizations, the media, and other stakeholders have shifted their attention to the “skills mismatch” and inadequacy of vocationally focused youths within developed and developing countries alike. Developed countries such as Canada have committed to creating and supporting initiatives that address the phenomenon of skills and labour market mismatch and shortages both within and outside the country (Government of Canada, 2018). Provincial and territorial governments have implemented policy initiatives targeted at responding to the labour market needs and skill shortages. Despite the adoption of proactive educational measures and maintaining a remarkable performance in ensuring equitable access to education among the OECD

member states and globally, especially at the postsecondary level, Guerriero (2015) argued that enrollments of students in TVET in Canada is among the lowest in OECD countries.

In this systematic literature review, I critically examined existing literature to ascertain the access and participation situation for students from historically marginalized backgrounds in TVET considering efforts to attain Goal 4 of the SDGs by the Government of Canada. Specifically, I explored the factors accounting for the increasing emphasis and prioritization of TVET and examined the access and participation situation for underrepresented groups in Canada. I also examined the measures adopted by federal and some provincial authorities in the context of policy and funding to make TVET attractive and inclusive for all students irrespective of their social backgrounds.

Rationale and Significance of the Study

Despite the negative stereotypes and unwarranted neglect of TVET for several decades, many countries, leaders, and international agencies recognize the need and importance of providing quality TVET due to its impact on job creation, reduction of unemployment, poverty, and inequality, and the creation of a greener economy. TVET features prominently as part of the global efforts towards achieving the SDGs by 2030. TVET falls within the ambit of SDG 4, which entreats state leadership to ensure the provision of an “inclusive and equitable quality education and promote lifelong learning opportunities for all” (UNESCO, 2015, p. 7). This research study is significant because it explores a vital component of the Agenda 2030 Sustainable Development Goal 4—specifically concerning targets 4.3, 4.4, and 4.5 (see Figure 1).

Figure 1

Sustainable Development Goal 4 TVET Specific Targets

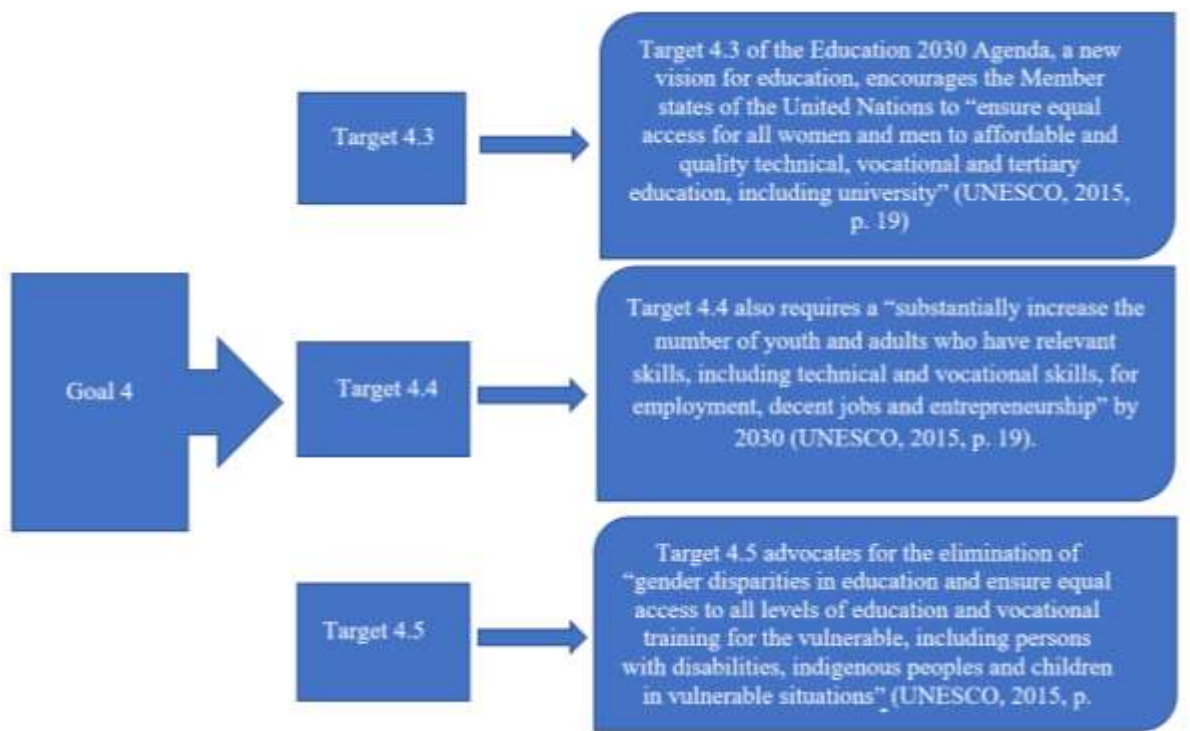


Figure 1 offers us a much clearer picture of why TVET has become an important issue in recent years. As noted by UNESCO (2015), “no education target should be considered met unless met by all” (p. 7). To ensure no one is left behind, the SDGs enjoin all countries to embark on comprehensive educational programs and reforms that prioritize the most disadvantaged in society (UNESCO, 2015).

Canada remains highly committed to the realization of the SDGs both within and outside the country. Canadian Prime Minister Justin Trudeau had this to say:

The Sustainable Development Goals are as meaningful in Canada as they are around the world, and we are committed to their implementation. Our priorities at home align with our priorities abroad: building economic growth that works for everyone, advancing gender equality and the empowerment of women and girls, taking action on climate change, and narrowing persistent socioeconomic gaps that hold too many people back. (As cited in Government of Canada, 2018, p. i)

Trudeau’s statement establishes a basis for examining what Canada is doing to ensure that the TVET specific goals are achieved both within and outside the country. The findings of this study contribute to the existing knowledge and discussions on TVET globally with a specific case in Canada. The findings will provide crucial information on the trend of sociodemographic participation in TVET (college and apprenticeship) programs in Canada. This literature review also provides critical information on how streaming in high school affects public perception towards TVET, thereby impacting its attractiveness and status. It informs areas for further research as Canada continues to aspire to contribute significantly to the attainment of the SDGs within Canada and globally. It will increase public awareness on the benefits of having an equitable and

inclusive TVET system in Canada, especially for students from historically marginalized populations.

The literature review outcomes play an important role in drawing the attention of policymakers, employers, and relevant stakeholders to the significant gaps that exist in the TVET sector within Canada. The reference to the global literature provides selected information on some of the best practices within the global arena that might be beneficial to Canada's efforts towards creating an effective TVET sector. Finally, the outcome of this systematic literature review informs public policy and debate on education in Canada. That is, the results can inform governmental and policymakers' strategies in delivering inclusive and equitable access participation in TVET for all.

Research Questions

Given the overall objective of examining the reasons for the recent calls for TVET as part of measures in attaining the SDGs, this literature review was guided by the following research questions:

1. What accounts for the resurgence and increasing attention on TVET globally?
2. How accessible is TVET for students from various sociodemographic backgrounds?
 - a. How is TVET conceived and delivered globally and in Canada in comparison to mainstream education in 2019?
 - b. What are the trend lines of TVET participation in Canada?
 - c. What are the potential barriers of access to an inclusive postsecondary TVET for students with historically marginalized backgrounds in Canada?

Methodology

A research methodology is a fundamental component of any reliable, credible, and authentic research study. In this project, I relied on the literature review as the preferred method of research. A qualitative literature review methodology was employed to review and assess existing literature on the state of TVET globally and in Canada, to identify the trends of participation in TVET pathways, and to determine the levels of participation in TVET and the factors that impeded access by and participation of students from disadvantaged backgrounds. Jesson et al. (2011) define a literature review as a desk-based research method employed to explore and critically examine the existing knowledge on a given topic or phenomenon. Although previously seen primarily as a component of all research studies, often taking the form of a chapter of a thesis or dissertation or a section of a journal article, the literature review has grown to be seen as a credible stand-alone research method (Jesson et al., 2011).

Qualitative literature reviews rely on secondary source data published in academic (e.g., journal articles and scholarly monographs and edited collections) and non-academic or grey literature (e.g., government and intergovernmental reports, industry and NGO white papers). Johnston (2014) further defines a secondary analysis of data contained in published reports as an empirical exercise that applies the same rigorous research principles for exploring primary data. Thus, while secondary research sources may include a critical review of articles in research journals, scholarly monographs and edited collections, issue briefs, governmental and intergovernmental documents, and websites, among other sources, a rigorous literature review also assesses the quality of the data incorporated into these publications and often identifies trend lines arising from this

literature as well as gaps in the literature. There are different types of literature review approaches used in qualitative research studies. However, the two most common qualitative literature review strategies consist of the traditional (qualitative) literature review and systematic literature review (Jesson et al., 2011). I evaluate the pros and cons of the different approaches or methodologies and settle on a systematic literature review approach.

A systematic literature review methodology is a precise methodology employed by researchers in the academy, government, and industry to examine thoroughly and “systematically” all (or as much as possible) the research literature on a specific topic. Often used in the evaluation of biomedical research and clinical trials to examine what is or what is not known about a specific clinical practice (e.g., the efficacy of chiropractic intervention on individuals following minor or significant automobile accidents; Jesson et al., 2011), systematic reviews have attracted the attention of social sciences researchers (e.g., economics). A systematic literature review “uses a standardized, structured, protocol-driven methodology” (Jesson et al., 2011, p. 103) in reviewing all existing and relevant literature on a subject. The “gold standard” for systematic reviews is the Cochrane collaboration (Cates et al., 2014; Paré & Kitsiou, 2017), which has identified the following eight-stem steps for preparing a systematic review:

1. Defining the review question(s) and developing criteria for including studies,
2. Searching for studies,
3. Selecting studies and collecting data,
4. Assessing risk of bias in included studies,
5. Analyzing data and undertaking meta-analyses,

6. Addressing reporting biases,
7. Presenting results and “summary of findings” tables, and
8. Interpreting results and concluding.

However, given the shortcomings of the systematic literature review strategy in assessing grey literature, I modified the approach to allow me to review grey literature sources to improve the quality and relevance of this literature review study. Jesson et al. (2011) have argued that, in the social sciences, “if you do not access grey literature you are excluding that valuable information from service users, charity organizations, think tanks, and among others” (p. 126). Therefore, considering the valuable and useful knowledge contained in non-academic, non-peer reviewed journals on the broad field of TVET, I undertook, as much as was possible, a “systematic” review of the grey literature to provide a comprehensive qualitative review of TVET.

Justification for Inclusion of Grey Literature

Several researchers have disseminated their studies’ respective findings on TVET globally. I recognized the depth of already existing information contained in academic and peer-reviewed sources. However, I also recognize the depth of information published in non-academic and non-peer reviewed sources that are very instrumental in shaping our understanding and providing us with a clearer picture of the state of TVET globally and in Canada. There are many publications, reports, and issues briefs on TVET from international intergovernmental organizations (e.g., UNESCO, The World Bank, international monetary organizations, the International Labour Organization, the International Bureau of Education), Canadian and American governmental agencies (Statistics Canada, Council of Ministers of Education, Canada, Ontario Ministry of

Education, etc.) and civil society/think tanks (Colleges and Institutes Canada, Higher Education Strategy Associates, and Ontario Technical Education Association, among others) that provide extensive resources in enhancing our understanding of TVET.

Most importantly, whereas academic and peer-reviewed articles mostly take an extended period to be published and referenced, grey literature sources provide up-to-date and reliable information from governmental sources and other reliable organizations. Given the objective defining this literature review, it is essential to include these government documents and any other relevant literature from grey sources to provide a comprehensive appraisal of the state of TVET.

Literature Identification Process

To undertake this study, I employed the six generic steps identified by Paré and Kitsiou (2017) for conducting a literature review, which paralleled the approach identified as a “gold standard” by the Cochrane collaboration (Heywood et al., 2018; Paré & Kitsiou, 2017). These steps involve:

1. formulation of the research questions and objectives
2. searching the extant literature
3. screening for inclusion (developing inclusion and exclusion criteria)
4. assessing the quality of primary studies
5. extracting data
6. analyzing data.

As in any study, the research questions and the objectives were adjusted as the breadth and depth of the research literature revealed itself, and as these were examined against the initial research questions. The process for the formulation of the research

questions was explicitly established and has been identified above. However, during the conduct of the literature review, there were few revisions to the research questions as a result of the availability of existing literature and the overarching purpose of this study.

Building on the initial set of research questions, I began the literature review process by identifying the specific keywords on access to and participation in TVET. Examples of the preliminary key search terms included: “vocational education”; “technical education”; “inclusion”; “participation”; “access”; “Ontario technical education”; and “Canada technical education.” After determining the keywords, I searched various electronic databases such as ERIC, ProQuest Dissertations and Theses, Google Scholar, JSTOR, and EBSCOhost (Brock University library database). Despite the integration of most of these online databases into the Brock University library database (EBSCOhost), which provided a one-stop platform for accessing most of the relevant literature, I recognized the importance of an exhaustive and comprehensive literature searching strategy in locating published and unpublished studies, reports, and issued briefs through other sources. Therefore, I utilized Google, websites of relevant government agencies and professional associations, and other essential grey literature sources.

I utilized Boolean operators such as AND/OR/NOT to maximize my search results. After preliminary searches, I reviewed the subject terms provided by the reviewed articles and applied them to identify more sources. This activity led to the identification of other key search terms, such as: “career and technical education”; “apprenticeship education”; and “trades education.” Other appropriate literature sources such as published

books readable online were considered in this literature review while I borrowed the unreadable books through the Brock University library services and interlibrary loans.

Eligibility Criteria

Although this study included grey literature in the review process, this research study followed a prescribed methodology in the identification and inclusion or exclusion of literature from the study. In selecting literature for inclusion in a study, Jesson et al. (2011) argue that attention should be given on articles that answer the research questions guiding the study. I established from the onset the inclusion and exclusion criteria that explicitly guided which literature, published or unpublished, were considered in exploring the state and issues affecting the technical and vocational education system, globally and in Canada. Given the context of the research study, the literature that was selected met the following eligibility criteria;

- Literature must align with the overall purpose of the study and answer the research specific research questions.
- Literature must be reported between 2005–2019
- Literature must be published in English
- Literature must be academic and peer-reviewed, and
- Grey literature such as issue briefs, reports, and policy documents were considered from trusted sources (governmental, intergovernmental, civil society/think tanks).

Any literature published before 2005 and in any language other than English was thus excluded from the study. These inclusion criteria were conducted in different stages of the research study. First, a preliminary stage of the decision of which literature is

considered as relevant for exploring the objectives of this study was done by reading through the title, abstract, introduction, and conclusion of most of the articles I explored. All relevant articles were then saved on a citation management software (i.e., Zotero). Out of the 7,958 peer-reviewed articles and books and 153 instances of grey literature identified in the preliminary database searches, only 233 peer-reviewed literature and 106 grey documents were saved on the citation management software for further review for inclusion.

After sampling the kinds of literature that met the inclusion and saving term on Zotero, I thoroughly read the articles that were relevant to the study. This thorough review was independently carried out to assess the quality of the various secondary sourced data saved on Zotero. Although I followed the process detailed by Paré and Kitsiou (2017) for assessing the scientific quality of potential literature by considering the rigour of the research design and methods, I considered other factors such as the source of the data, particularly in the case of the grey literature. All academic sources were assessed whether they were peer-reviewed or not, while grey literature was scrutinized based on the reputation of the publication agencies. Appendices A and B provide an overview of the screening processes for eligibility and inclusion of literature reviewed and included in this study. I settled on 49 peer-reviewed and 51 grey literature documents for this study.

Again, the approach intended to systematically review and analyze each article or report, following the guidance of Jesson et al. (2011) and Paré and Kitsiou (2017). I highlighted the crucial segments of the articles that were instrumental in enhancing the quality of the research study. Relevant sections were summarized, collated, and

synthesized (Jesson et al., 2011; Paré & Kitsiou, 2017) in a succinct format for analysis and conclusions. Jesson et al. (2011) argue that there are no laid down or rudimental procedures in synthesizing the findings of a study. Nevertheless, data synthesis is not merely reporting the information or conclusions of each study sequentially but rather is the “art of making connections between parts. It is not a matter of reassembling them back into the original order but finding a new order” (Hart, as cited in Jesson et al., 2011, p. 123). Therefore, in this study, the reviewed literature, both academic and non-academic, were synthesized and organized in a manner that made logical sense and highlighted the objective of this literature review study.

Organization of the Study

This literature review has five chapters and is designed to go from a general introduction to TVET and to describe the methodological approach in Chapter 1, through to a series of conclusions and policy recommendations for government and international agencies, TVET providers, and students and parents in Chapter 5. More specifically, Chapter 1 provided an introduction, background, and the research questions and objectives of the study. It also provided the methodology that guided the conduct of this literature review study.

Given the increasing prominence and attention associated with TVET, Chapter 2 examines the rationales behind the recent renaissance of TVET globally. Thus, it examines the reasons for the growing emphasis on TVET from three main analytical frameworks. In this regard, the chapter discusses the economic, sustainability, and social justice or equity lenses to provide a broader context of the reasons why TVET should be the priority of most countries. Chapter 2 draws on some existing research to ground the reasons for the resurgence of TVET.

To understand the alignments of TVET with Goal 4 of UNESCO's SDGs, particularly from the global perspective, Chapter 3 unpacks and examines the access and participation situation in TVET for various sociodemographic groups. The chapter sets off by exploring further the meaning and organization of TVET globally to give a concise understanding of what comprises TVET and how TVET is organized in various parts of the world. Although Chapter 3 does not provide an exhaustive, country-by-country report on TVET or CTE, I draw selectively on the literature to highlight key trends across the global literature of what TVET is and how it is organized and delivered. The chapter also explores the TVET access and participation situation for different sociodemographic groups. Discussing each sociodemographic group considered for this study, the chapter examines the factors militating against TVET participation for such groups.

Chapter 4 narrows the research study in the Canadian context. It examines access to and participation of various equity groups in TVET, the barriers to access, and the measures adopted by the provincial governments to ensure equitable access and completion rates of students from disadvantaged backgrounds. Equity groups, within the Canadian context, are identified as women, persons with disabilities, indigenous persons, and persons from LGBTQ+ communities.¹

Chapter 5 summarizes the research study and discusses the outcomes of the literature review comparing the status of TVET in Canada and the global literature reviewed. These outcomes lead to a series of recommendations on how Canadian provinces can improve the status of TVET while widening access for social groups. I

¹ The Canada Human Rights Commission was established to promote and protect human rights and to ensure an inclusive society where everyone is valued and respected in Canada. <https://www.chrc-ccdp.gc.ca/eng/content/human-rights-in-canada>

proceed to provide similar recommendations for international actors, particularly concerning UNESCO's SDGs. Chapter 5 also provides suggestions for further research and ways to fill in some of the many gaps that exist in our understanding of how TVET or CTE are promoted and supported internationally and contribute to nations' social and economic prosperity in a highly technical world as well as solving, or contributing to the solution of, social and economic disparities and skills shortages.

CHAPTER TWO: UNDERSTANDING THE RESURGENCE OF TVET

There are several reasons for the recent recognition and consideration of TVET as an important part of global efforts towards addressing the challenges of modern-day society. In particular, the adoption of TVET is an integral part of educational targets for the achievements of UNESCO's SDGs, especially SDG 4 Education, SDG 5 Gender Equality, Goal 8 Decent Work and Economic Growth, and 13 Climate Action. In this chapter, I examine why TVET has become an important topical policy issue globally. Drawing on Marope et al.'s (2015) three analytical lenses for the transformation of TVET, I examine how a neo-liberal lens that ties the need for TVET to the discourse on the 21st century (or future ready) skills is a major driving force for the increasing emphasis on TVET.

Rationales for the Resurgence of TVET

The field of TVET has attracted considerable interest among several stakeholders, including intergovernmental organizations, non-governmental organizations, civil society organizations, an industry organization, educational and economic researchers, and national governments. Some have argued that TVET is gradually evolving as “a winner in the race to the top” of global policy discussions and government priorities for education and societal development agendas (Marope et al., 2015, p. 11). This claim is evident from the global recognition attributed to the importance and contribution of TVET to skill development in 21st-century development. The inclusion of TVET in Goal 4 of the SDGs and the Agenda 2030 signifies the renewed commitment and revival towards technical and vocational education globally.

It is important to note that the focus on TVET and its benefits is not a recent phenomenon. Historically, the philosophy of productivism in the mid-to-late 19th century gave rise to TVET, especially within the context of the industrial revolution in Europe and North America (Marope et al., 2015; A. Taylor, 2016; Tikly, 2013). Moreover, the demand for an industrialized economy and pursuit of profit defined the development of the sector up to and during the 1960s (A. Taylor, 2016). TVET served as a pathway to train and develop workers with the skills required to drive the manufacturing economy and to support the mechanization of agriculture and other vocations (A. Taylor, 2016). During this period, intergovernmental organizations such as the World Bank and UNESCO prioritized and promoted policies that targeted TVET, especially in developing countries (Tikly, 2013).

Consequently, the first World Bank loans to education in Sub-Saharan Africa in 1963 were directed to the TVET sector, which accounted for 40% of the total loans to the provision of education (Maclean, as cited in Tikly, 2013). Although the motives of these international developmental agencies differed regarding the rationale for investing in TVET, they defined and gave relevancy to the role of a robust TVET system in shaping 21st-century societies. However, the lack of prioritization, attention, and funding from various governments within the Sub-Saharan Africa state and other developing and developed countries contributed to years of neglect, poor public perceptions, and decline of the TVET sector at the national level and its consequential effects in spearheading development.

Despite years of public recognition and attention, TVET has now become an essential component of a comprehensive educational system, one that is responsive to the

educational needs of individuals and communities and the needs of evolving knowledge, technological, and industrial economy since the early 21st century. The “rediscovery” of technical and vocational education and training is transnational and is equally essential for emerging economies of Asia and Africa as it is for more technologically advanced economies of Western Europe and North America. Thus, the focus on TVET in the SDGs highlights the importance of skills that are both technical and transferable in addressing the complexities of the 21st century. Inclusive access and participation for all has become crucial in promoting economic competitiveness and combating social exclusion. Countries have become cognizant of the challenges failure to prioritize access and participation in TVET programs can have on its economic growth and development (Rosa, 2017a).

The most apparent reason for the resurgence of TVET can be attributed to the consideration of TVET as part of Goal 4 of the SDGs. The UNESCO-UNEVOC Technical and Vocational Education and Training strategy 2016 to 2021 outlined three priority areas for the development of an efficient and effective TVET system. These priority areas are: fostering youth employment and entrepreneurship, promoting equity and gender equality, and facilitating the transition to green economies and sustained society (UNESCO, 2016). These three priority areas form the core rationales driving the resurgence of TVET in recent years.

Analytical Approach to the Resurgence of TVET

In this section, I examine the analytical approaches that explain the resurgence of TVET in recent years. Marope et al. (2015) employed three analytical lenses—economic growth, social equity, and sustainability—for transforming TVET. These analytical frameworks will be discussed to help shape our understanding of why TVET is winning

the race to the top of global educational priorities.

Marope et al.'s (2015) three analytical lenses provide a framework that underpins and explains the transformation and increasing focus on TVET globally. These rationales are illustrated in Figure 2 and explained in detail below.

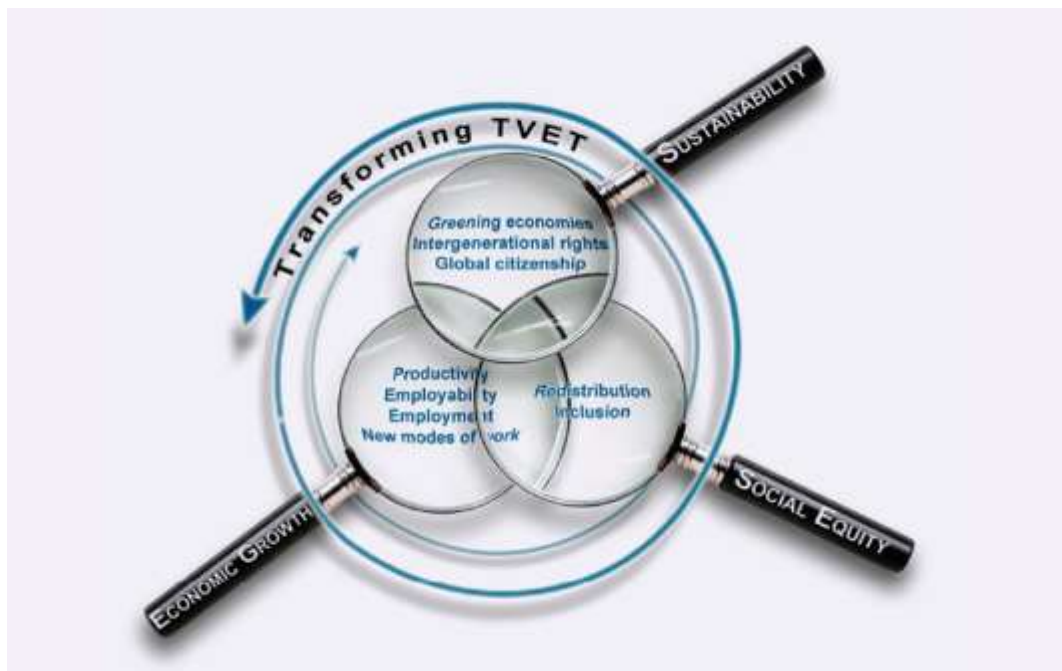
The Economic Growth Rationale

Given the shifts in the development paradigm of the 21st century towards sustainability, economic growth, labour market trends, migration patterns, and demographic changes are the key factors driving the future of TVET (UNESCO-UNEVOC, 2018). In this era of disruption and the knowledge economy, Marope et al. (2015) posit that higher-level skills and enhanced global competitiveness have become the tools for economic growth and a balance of political power that sustains societal peace and stability. The new wave of attention on TVET, therefore, is inextricably linked to its potential in responding to the uncertainties presented by the new knowledge economy and changing the global market landscape, which is characterized by economic competition and high focus on skills development (UNESCO-UNEVOC, 2018). Agrawal (2013) argues that both the state and individuals stand to gain an effective TVET system that responds to the productive needs of the labour market.

Remington (2018) therefore argues that “ineffective technical and vocational education and training (TVET) systems result in significant mismatches between the demand for and supply of skill in a national or regional labour market” (p. 498). This presupposes the quintessential role of TVET in the development of a robust economy that prioritizes the skills, knowledge, and technological development needed to spearhead growth and productivity.

Figure 2

Three Analytical Lenses for Transforming TVET



Source: Marope et al. (2015, p. 148).

Some researchers have identified this economic rationale as one of the driving forces shaping the revitalization of TVET and its role to economic development in recent years (Marope et al., 2015; Rojewski, 2009; Tikly, 2013). The economic growth perspective derives its tenets from human capital theory (Becker, 1962; Schultz, 1961), which equates an investment in education to an investment in people and the economy. The economic rationale highlights the benefits of individuals, firms, and a country derive from an investment in TVET. Scholars and institutions with the human capital mindset see TVET as a by-product of a deliberate policy investment that targets increasing productivity and returns on investment (ROI).

Marope et al. (2015) define productivity as “the basis for sustained economic growth and wealth accumulation” (p. 13), while MacKenzie and Polvere (2009) define return on investment as “the measurable impact on an organization of training in terms of value-adding, productivity and profitability” (p. 71). Given the uncertainty around the fast-growing global economy coupled with economic downturns, technological advancements, and related unemployment, the role of TVET in equipping individuals with the requisite labour market skills that hold the proclivity of directly contributing to productivity and growth and employment and employment creation cannot be undermined (Marope et al., 2015; Nilsson, 2010). From the economic growth perspective, TVET is not just confined to investment in human capital development for only economic reasons but viewed also as a means by which individuals, states, and industries can exploit the benefits of the 21st-century knowledge economy while minimizing its resultant effects on modern societies.

Marope et al. (2015) explain that TVET is gaining substantial grounds because of its potential in contributing to the development of individuals who are knowledgeable and

possess the requisite technical skills needed to accelerate productivity and sustain economic growth and development. As the authors indicate, a country that prioritizes TVET and skills development is more likely to attract more foreign direct investment, thereby creating an avenue of a virtuous cycle of skill demands through the backward and forward linkages of such investments. The demand for more skilled labour to sustain productivity will lead to trickle-down effects on job creation and economic growth.

Given the prominent role of TVET in shaping the skill sets required for meeting the immediate and long-term industrial, technological, and social needs of most countries, it has attracted the attention of governments and stakeholders as the education alternative to the challenges confronting society. TVET plays an immense role in providing individuals with the skills they require to navigate the evolving world of work, particularly individuals who have lost their jobs because of societal advancement and its unintended consequences (Hanni, 2019). TVET plays a role in the labour market trends and demands resulting from the skills mismatch and the increasing labour market prioritization of soft skills: problem-solving, entrepreneurship, learning to learn and creativity (Marope et al., 2015). As such, these demands and efforts to minimize the skill gap have propelled the recent discourse on expanding and modernizing TVET.

In Canada, Alison Taylor (1995) argues that increasing the competitive advantage of the Canadian economy by improving quality and raising the productiveness of its human capital remains the preoccupation of policymakers and the government. This highlights why both provincial and federal governments in Canada are interested in the skills development of their youth (Government of Canada, 2018). Specifically, such efforts have translated into deliberate policy attempts towards making visible vocational or career education aimed at providing relevant work experience through cooperative

education and the provision of apprenticeship educational opportunities for students (A. Taylor, 2005).

The Social Justice and Equity Rationale

Despite being valued for its economic potential, another critical driving force for the revival of TVET can be attributed to its role in fostering social inclusion, reducing societal inequalities, and eradicating abject poverty (Hanni, 2019; Nilsson, 2010).

Historically, various systems of oppression and marginalization have created patterns of social injustice and inequity within societies. As a result, individuals from disadvantaged backgrounds continue to experience persistent systemic barriers in accessing and participating effectively in societal growth and development. Consequently, most of them are subjected to extreme poverty and marginalization, especially within education.

To achieve economic growth and social cohesion requires a break in the cycle of social injustices and inequities for various disadvantaged groups. This measure empowers marginalized people and society. The resurgence of TVET in recent years is therefore grounded in the principles of social justice and equity and perceived as the key in promoting decent jobs, creating employment, reducing societal inequality, and addressing the impact of poverty (Hanni, 2019; Marope et al., 2015; Tikly, 2013; UNESCO, 2015).

The social equity perspective, therefore, calls for deliberate state and global policies focusing on widening access to skills development and providing effective TVET lifelong learning opportunities for individuals from disadvantaged backgrounds, especially women, students from racialized/ethnically diverse, low socioeconomic backgrounds and those with disabilities. This perspective is boldly enshrined in the

Education 2030 Incheon Declaration and Framework for Action for the implementation of SDG4:

Inclusion and equity in and through education is the cornerstone of a transformative education agenda, and we, therefore, commit to addressing all forms of exclusion and marginalization, disparities and inequalities in access, participation and learning outcomes. No education target should be considered met unless met by all. We, therefore, commit to making the necessary changes in education policies and focusing our efforts on the most disadvantaged, especially those with disabilities, to ensure that no one is left behind. (UNESCO, 2015, p. 7)

The adoption of the Education 2030 Incheon Declaration and Framework for Action for the implementation of SDG4 highlights the consensus among global leaders and policymakers towards eliminating barriers to education, especially for students from disadvantaged groups.

The social equity lens thus recognizes the role of TVET in tackling and eradicating poverty and its broader implications for society (Marope et al., 2015). Marope et al. (2015) stipulate that productivity, growth, and wealth are often inextricably linked with adverse poverty and acute inequalities. Most of these inequalities resulting from the stratification of society have consequential effects for economic growth and development of nation-states. As a result, TVET from the social justice and equity perspective is predicated on the understanding that investment in equipping the skill, knowledge, and technological capabilities of individuals from disadvantaged backgrounds will manifest in economic gains for both the individual, society and the state, thereby leading to

sustained economic growth (Marope et al., 2015) and less dependence of individuals on the state for social services and assistance.

Additionally, the social equity lens views access to and participation in TVET from a human rights perspective. Education is considered a right, thereby ensuring equal participation for all irrespective of one's social background is regarded as a means of fulfilling the individual right of people to equal educational opportunities (Rojewski, 2009; Tikly, 2013). However, given the current competitive nature of accessing education due to limited infrastructure and availabilities of schools, Marope et al. (2015) argue that TVET becomes an alternative for the acquisition of skills for students who are challenged with poor quality basic education and have limited chances of academic progression to higher levels. Although this reason accounts partly for reasons for the recent resurgence of TVET in recent years, it presents a problematic situation feeding into the already existing notions of TVET been regarded as a second-class educational pathway and consequentially its poor reputation.

Furthermore, proponents of TVET from the social equity lens stress the economic imperative of TVET in ensuring the redistribution of both tangible (income, material wealth) and intangible (moral, ethical, innovative, cultural, and social well-being of individuals) benefits for the enhancement of society (Marope et al., 2015). The social equity lens is contrary to the economic growth lens. Proponents of the social equity perspective view TVET as an essential developmental strategy towards addressing the impact of poverty and its associated intangibles such as intellectual, technical, cultural, innovative, social, moral, ethical, and political capital (Tikly, 2013). According to Marope et al. (2015) and Tikly (2013), inequities in these intangibles are particularly

more challenging to address than tangibles (income and material wealth), which can be redistributed to the benefit of all. Failure to eliminate the systemic inequalities whether tangible or intangible in the provision of inclusive and equitable TVET learning opportunities can increase income, material wealth, social, and cultural capital of individuals in society.

The Sustainability Rationale

The sustainable development perspective to TVET hinges on a moral instead of an economic rationale. As a dominant approach mostly adopted by UNESCO, the main objective of the sustainable development perspective is to develop “a human-centered response to globalization that is based on principles of environmental, economic and social sustainability” (Tikly, 2013, p. 14). Apart from UNESCO-UNEVOC, other intergovernmental organizations—such as the European Centre for the Development of Technical Training (CEDEFOP) and the International Labour Organization (ILO)—are also working to ensure that sustainability practices and goals are incorporated into TVET programs and institutions globally (S. K. Taylor & Creech, 2012; UNESCO-UNEVOC, 2012). The sustainability rationale is grounded on the principle of individuals developing a critical consciousness about the welfare of the planet and its ecosystem, people, and cultures (Fien et al., 2009). It requires that individuals are deeply embedded and concerned about the whole system and developing an awareness of the implications that one part of the ecosystem can have on the other.

According to Fien et al. (2009), “green growth” or “sustainable growth” require a sustained emphasis on fiscal growth to provide the economic capital needed to eradicate poverty and solve environmental problems, and the calls for fundamental reductions in

the resource and “energy throughputs of present-day levels of economic activity identifies two broad objectives driving the global efforts towards ensuring a sustainable future” (p. 26) remain the two broad objectives shaping the need for a sustainable future. While the difference between the green or sustainable growth approach and the fundamental reduction in the resources and energy quantities is more than one of semantics, Fien et al. (2009) argue that two principles guide the philosophy of TVET from the sustainability standpoint: The first should promote public understanding of the ecological dilemmas, the associated challenges, origins in the unsustainable nature of growth and greed, and the need to transition into a sustainable future. The second also entails measures to integrate the demand for sustainable development about the functioning of the holistic global system and connections into learners.

Marope et al. (2015) argue that societal expectations of the role of TVET in tackling the uncertainties and complexities of a globalizing and diversifying society while contributing to a sustained environment and climate for the future generation accounts for its recent surge and call for policy prioritization. The sustainability rationale, therefore, plays a pivotal role in dealing with the challenges of climate change, industrialization, migration and demographic changes in recent years. As noted by Fien et al. (2009), TVET for sustainability entails the development of respect for the Earth through comprehensive understanding and appreciation of incredible ways through which nature preserves the conditions necessary for life.

From this standpoint, Marope et al. (2015) state that the sustainability rationale can be viewed from the lenses of social equity and economic rationales. The authors recommend that sustainability should be constructed in all aspects of economic and social

justice efforts. The pursuance of sustained economic growth and a socially just society should not compromise the environment and its ecosystem (Fien et al., 2009).

Additionally, the sustainability rationale from the social equity perspective advocates for sustained efforts to ensure that social equity is also an enduring process and not a matter of the moment alone (Marope et al., 2015). Thus, the sustainability rationale places the *future* into the *now* of global economic growth and developmental pursuits. It enjoins countries to be mindful of the environment and future generations in the current pursuit of economic prosperity. This implies that any policy framework towards economic productivity and growth needs to be mindful of its implication for the prosperity of future generations.

The proponents of TVET from the sustainability perspective recognize the instrumental and intrinsic value of TVET in ensuring that measures adopted today have long-lasting and intergenerational impacts. It is the recognition of the impact of TVET in enabling individuals to escape from the intergenerational cycle of poverty and marginalization that has recently gained its prominence among major stakeholders globally. Global policies such as the Decade for Education for Sustainable Development enjoined most countries to devise innovative approaches to incorporation sustainability education to TVET (S. K. Taylor & Creech, 2012).

Although countries such as Germany, Kenya, and China have begun to mainstream education for sustainable development into TVET, in Canada, Susan K. Taylor and Heather Creech (2012) argue such measures to incorporate education for sustainable development into TVET are less ostensible. However, in Manitoba and

British Columbia, the authors argue that there are efforts to mainstream education for sustainable development into TVET.

Chapter Conclusion

In this chapter, I reviewed existing documents to provide the rationale behind the recent focus on TVET as an educational strategy to equip youths with the needed skills to confront the emerging challenges resulting from the advancements and diversification of the global economy. Finally, I discussed the three analytical perspectives that further help shape our understanding of the reasons for the increasing attention on TVET globally. In the next chapter, I will provide a global picture of how TVET is constructed, understood, organized, and delivered around the world. I also examine the issue of access to and participation in TVET for various disadvantaged groups in line with the calls for widening access to TVET programs for all. The next chapter provides some current and historical challenges confronting access and participation in TVET for all from a global perspective.

CHAPTER THREE: UNPACKING TVET: GLOBAL TRENDS, ISSUES, AND CONCERNS

A core component of SDG 4: Education (UNESCO, 2015) is ensuring all children of all backgrounds have access to quality early childhood, primary, secondary, and postsecondary education (PSE). In this chapter, I will provide a global picture of how TVET is constructed, understood, organized, and delivered around the world. I also explore in this chapter the extant literature and relevant government, especially inter-governmental (e.g., UNESCO) and not-for-profit agencies' documents and reports to provide an overview of the global situation on access and participation to comprehensive TVET programs. The chapter examines the access and participation for various sociodemographic groups, encompassing gender, race/ethnicity, class/socioeconomic status (SES), disability, indigenous, and geographic location (rural and urban). It determines the factors that influence the participation of these underrepresented social groups in TVET. The chapter concludes by examining some of the challenges mitigating against the establishment of vibrant TVET.

Unpacking TVET

TVET is one of the significant educational pathways globally. Most countries operate a dual education system comprising general/academic education and technical and vocational education and training pathways (African Union, 2007; UNESCO Institute for Statistics, 2012). Whereas the emphasis of general education is the provision of academically oriented and general knowledge skills and competencies required for further education and as engaged by citizens, the focus of TVET is concerned with equipping

individuals with the practical skills and knowledge required for direct entry into specific occupational fields (Eichhorst et al., 2012; UNESCO Institute for Statistics, 2012).

Although this categorization of education may seem problematic, especially with the use of academic and vocational and technical, it is equally challenging conceptualizing TVET education at a time when there has been growing attention on its relevance to the economic and sociopolitical development of societies, nation-states, and individuals. The status and the understanding of the role of TVET globally are informed by several historical, cultural, economic, and social factors that affect how TVET systems are organized and operated in most countries. Understanding the meaning and scope of what constitutes TVET at the global level will require a thoughtful exploration of how it is conceived in various jurisdictions around the world. According to Maclean and Lai (2011), the location (company-based, apprenticeship, school-based) or character (initial, continuing) of TVET programs play an essential role in defining TVET education in this regard.

Historically and geographically, different terminologies and connotations have been used to describe the field, which has now been known as TVET. Examples of these terminologies include: apprenticeship education or training; vocational education (VE); technical education (TE); career and technical education (CTE); vocational education and training (VET); technical-vocational education (TVE); occupational education (OE); and workplace education (WE), among others. Some of these terminologies are spatially situated. For instance, in the European context, the most commonly used term is VET, while CTE is the predominantly used concept in the United States (Agrawal, 2013), with TVET used in most African countries (African Union, 2007; Alagaraja & Arthur-

Mensah, 2013; Oketch, 2009; Okoye & Arimonu, 2016). Given this complexity, there is no universally accepted definition for TVET, as its meaning differs from country to country (McCrone, 2015). The lack of a global conception of the meaning of TVET has resulted in different approaches to how it is organized and delivered globally. As a result, in the next section, I will examine how TVET is conceived and organized in different parts of the world.

Defining Technical and Vocational Education

TVET is a combination of two concepts—technical education and vocational education—that are often used interchangeably but may imply significantly different forms of education and levels of education. Researchers and organizations have therefore defined TVET in different ways depending on the scope of its provision (MacKenzie & Polvere, 2009) and the overarching objective and foundation behind its organization and provision (UNESCO, 2010; UNESCO Institute for Statistics, 2012).

MacKenzie and Polvere (2009) define TVET as education and training offered at the postsecondary level, excluding degree and other advanced-level programs that provide individuals with the necessary occupational skills and knowledge required to participate effectively in the world of work. This definition of TVET is too narrow for most national or subnational authorities as the provision of TVET is rarely limited to postsecondary institutions and, only infrequently, within universities, except for specialized systems such as technical universities in Asia, Europe and, increasingly, in North America. For instance, in some countries, the provision of TVET starts at lower secondary levels up to the postsecondary level (Alagaraja & Arthur-Mensah, 2013; Oketch, 2009). In other countries, TVET (mainly formal TVET) is offered at the

secondary and postsecondary level (Hanni, 2019; OECD, 2010; Remington, 2018; Tikly, 2013). However, Field and Guez (2018) argue that, despite the existence of lower secondary TVET in some parts of Africa, especially in Burkina Faso and Kenya, TVET is increasingly becoming uncommon in most parts of the world.

From an international perspective, the UNESCO Institute of Statistics (2012) defines vocational education as “education programs that are designed for learners to acquire the knowledge, skills and competencies specific to a particular occupation, trade, or class of occupations or trades” (p. 14). UNESCO (2015) extends and broadens this definition to encompass TVET, which is viewed as a form of formal, informal, and non-formal learning that provides students with the requisite technical and practical knowledge and skills required for their active participation in economic life (Preckler Galguera, 2018; UNESCO, 2015; UNESCO Institute for Statistics, 2012; Wheelahan, 2009; World Bank, 2018). TVET, therefore, is a form of applied learning that entails the acquisition of relevant job-appropriate skills and knowledge required to increase an individual prospect for “productive work, sustainable livelihood, personal empowerment, and socio-economic development” (Preckler Galguera, 2018, p. vii). This definition highlights the economic, social justice, and sustainability importance of TVET and its place in modern society as examined in Chapter 2. However, the definition is limited as it does not address the lifelong learning opportunities of TVET as proposed by the sustainable development Goal 4. Therefore, the most widely accepted definition of TVET is the one provided by UNESCO.

UNESCO (2010) defines TVET as a form of a lifelong learning process that involves “those aspects of the educational process involving, in addition to general

education, the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupation in various sectors of economic life” (p. 5). UNESCO’s definition encapsulates the various dimensions of the rationales behind the provision of TVET. As mentioned by Maclean and Wilson (2009), TVET encompasses a wide range of learning experiences relevant for the labour market, much of the learning and training was non-formal/informal, on-the-job, terminal and/or occupational and did not act as a basis for entry into further education in seven African countries.

As a lifelong process, TVET education transcends formal and informal learning environments. TVET can take place at the lower and upper secondary level and postsecondary educational levels (UNESCO, 2010). TVET programs may include work-based learning components with continuous avenues for further training and professional development, which may lead to qualifications or credentials. Additionally, the definition acknowledges the contribution of TVET to promoting environmentally comprehensive and sustainable development, developing responsible citizens, alleviating societal poverty, and contributing to political, economic, and sociocultural equity.

Organization and Delivery of TVET

As a lifelong learning process, the organization of TVET systems differs significantly from country to country and, in some cases, within the same country, especially those with decentralized educational governance systems such as Canada. TVET can be organized and delivered in different forms and for different people. In some countries, the delivery of TVET occurs at different institutions (K–12, PSE) for different target groups (urban, rural, ethnocultural communities), and age cohorts—intermediate

and senior schools, unemployed adolescents, adults returning to the workforce (African Union, 2007; Maclean & Wilson, 2009; UNESCO, 2010, 2015; UNESCO Institute for Statistics, 2012). Thus, TVET can be offered to students as early as lower secondary level up to the postsecondary or at the secondary and postsecondary level and beyond as part of lifelong learning and continuing education process.

Additionally, the organization and delivery of TVET may assume the form of school-based, apprenticeship, dual, or company based (Eichhorst et al., 2012; Maclean & Wilson, 2009). The UNESCO Institute for Statistics (2012) argues that the categorization of TVET programs into a school-based, dualized (school and work), and/or apprenticeship is dependent on the level of training provided in school as against the workplace. Eichhorst et al. (2012) define school-based TVET as technical and vocational education and training that follows a formal curriculum and occurs within a schooling environment. School-based TVET programs, for instance, are organized at different levels worldwide. Whereas some countries offer school-based TVET programs right from the lower secondary level—after primary or elementary (African Union, 2007; Eichhorst et al., 2012; UNESCO Institute for Statistics, 2012)—others offer such programs at the upper secondary level and continue into postsecondary levels, including trades colleges, universities and/or private career colleges (Eichhorst et al., 2012). African Union (2007) suggests that the provision of TVET at the end of primary school or lower secondary level is informed by a deliberate effort to expose young students to the benefits of technical and vocational skills at an early, formative age. The duration of school-based technical and vocational education is often between 3 and 6 years, depending on the country and the model (African Union, 2007).

The dual TVET system is an integration of school-based education and training with work-based components. Remington (2018) defines dual TVET as the structuring of technical and vocational education into school-based and work-based components. The dual TVET programs which are notable within the European context with significant emphasis on Germany or the Germanic-speaking countries have proven to be very useful uniquely equipping the youth with essential and relevant skills required for the world of work. Specifically, the dual TVET programs are observable and operational in Germany, Switzerland, Austria, and Denmark and partly administered in France and the Netherlands (Eichhorst et al., 2012).

Dualized TVET programs may take the form of apprenticeship education, which is often the case in Europe. Although apprenticeship education is an essential component of the dualized TVET programs in most countries with prospects for continuation to the postsecondary level (Remington, 2018), in Canada, it is either a standalone (private) postsecondary TVET alternative or fits within the college system (Frank & Jovic, 2017). The dual TVET systems are often highly institutionalized (Remington, 2018) and involve active social partners involved in the design and development of the curriculum (Eichhorst et al., 2012). According to Eichhorst et al. (2012), whereas vocational colleges provide school-based components, the work-based part is often provided by firms that meet the standards established by the regulating authority. These established standards ensure TVET provides meets the demands of the regulatory agencies and the labour market requirements.

The UNESCO Institute for Statistics (2012) argues that the dualized TVET system consists of various components that are equally important even though the work-

based component often assume the significant aspect of a trainee's time. In Germany where the implementation of the dualized TVET approach has been successful, Remington (2018) states that the federal law requires that 70% of the time spent by a student should be assigned to a practical (work-based) component while the remaining 30% takes place in the schooling environment. Despite its social and economic benefits, the implementation of the dualized TVET system in most countries outside the European context or the Germanic countries has proven to be very challenging (Remington, 2018), especially in developing countries. Most apprenticeship programs in developing countries occur in the informal sector with no opportunity for school-based components to be integrated into the process (African Union, 2007; Janjua, 2011). As such, student apprentices who complete their learning process do not receive any form of accreditation of credentials from the government.

Finally, different institutions participate in the organization of TVET programs. These may include the public (state or government entity) or private (for-profit and not-for-profits (NFP) organizations such as non-governmental organizations (NGOs) and/or church- and religion-based organizations. Although the state reserves the authority to regulate the provision of TVET worldwide, several researchers have noted with great concern the dwindling role of the state or public sector in the provision of TVET (African Union, 2007; Hanni, 2019; Maclean & Wilson, 2009; UNESCO Institute for Statistics, 2012). According to these authors, the state role in the provision of TVET has seen a significant decline, especially in the informal/nonformal sector. This is particularly applicable to developing countries where there is no governmental supervision or oversight responsibility for apprenticeship education.

Conversely, there has been massive and steady participation of the private sector in the provision of TVET. Notably, over the past 20 years, the informal sector provision has witnessed massive provision in some countries and to surpassing state provision in the area of informal/non-formal sector (African Union, 2007; Maclean & Wilson, 2009; UNESCO Institute for Statistics, 2012). For instance, in Africa, African Union (2007) attributes the surge in private sector participation in the provision of TVET to the increasing role of non-governmental or private providers in training workers for the informal/nonformal sector. The African Union (2007) notes that the focus of the public TVET sector in most countries in Africa is the training workers for the stagnated industrial sectors whereas the private sector concentrates on the informal/nonformal sectors. Given this overview of the literature on the global discourse on the organization and delivery of TVET, the next session of this chapter will explore the access and participation situation for students from disadvantaged backgrounds.

Access, Inclusion, and Participation in TVET

Access to and participation in inclusive education has been at the forefront of geopolitical agenda and research analyses since the Jomtien, Thailand World Conference on Education for All in 1990 and subsequently the adoption of the Millennium Development Goals (MDG) in 2000 (United Nations, 2015). MDG 2, which focused on achieving universal primary education, became integrated into and extended within SDG Goal 4 and has been the subject of much scholarly research, debate, and controversy in recent years. Although there has been extensive educational research on access to education in its generic sense in the global context, little research focuses on access to TVET and especially access to TVET at the postsecondary level in Canada. The dearth of

literature on access to TVET in Canada at the secondary and postsecondary levels may be attributed to how TVET is characterized and conceived in Canadian provinces and, particularly, its segmentation between non-formal and formal educational processes, the multiple agencies responsible for the provision of TVET (e.g., apprenticeship training, formal diploma programs, on-the-job training) such as public community colleges and private career training colleges and institutes.

At the global level, researchers have explored the issue of equitable access to TVET for diverse social groups: gender, racialized and/or indigenous students, low socioeconomic students, and students with a disability (Gottfried et al., 2016; Hamilton et al., 2015; Strathdee & Cooper, 2017; Struthers & Strachan, 2019; Windley, 2017). Outcomes from these studies and official data at the national and international level show that access, participation, and outcomes in TVET remain structured according to the background of students (Strathdee, 2012; Strathdee & Cooper, 2017). The major arguments in these studies suggest that access, participation, and outcomes in TVET are predicated by the sociodemographic characteristics of students and their schooling environment. In the following sections, I explore how SES, gender, race/ethnicity, and indigeneity have impacts on whether one attends TVET, whether one is more likely to succeed, and whether one is excluded from TVET. Not all outcomes are expected and may be subject to differing interpretations, especially when various indicators are co-present (e.g., gender and ethnicity).

Gender Participation and Inclusion in TVET

Despite significant progress over the past couple of years, the persistence of gender inequality in almost every facet of the 21st-century society is still one of the major

challenges confronting most countries. Women and girls still encounter and confront multiple and intersecting forms of discrimination due to their race, ethnicity, spatial location, economic status and educational background, religion, language, and sexual orientation, among others. These intersecting challenges are not just peculiar in society but manifest themselves through most educational systems globally. Most of the global educational goals over the years have paid significant attention to the role of education in minimizing the systemic gender discrimination in society (Rosa, 2017a).

The Education for All program, MDGs, and SDGs address the concern prevalent globally on disparities of access to education, primary through postsecondary, based on the gender of the individual child, youth, or adult. Both MDGs and SDGs address the concern of disparities of access to education, primary through postsecondary, based on the gender of the individual child, youth, or adult. Specifically, the SDG 4.5 enjoins member states to “eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations” (UNESCO, 2015, p. 21). Despite the call by the United Nations, many countries still struggle to ensure gender parity in the provision of quality education for all.

Gender participation in education is a significant issue extensively researched all over the world and continues to attract attention by national, regional, and global policy makers. Most of the research and discussions on gender have focused on access to and participation in education for girls and women. Much of the research and data suggest that while gender gaps in access to quality primary and secondary education for women are being reduced, gaps still exist, particularly in Sub-Saharan Africa, North Africa and

the Middle East, and South-East Asia at the postsecondary level (African Union, 2007; Agrawal, 2013; Ayonmike, 2014). Remarkably, at the postsecondary level, there have been massive successes with regards to achieving gender parity in education in most parts of the world, with female enrollments often far exceeding their male counterparts in some countries (UNESCO, 2019).

In terms of access and participation in TVET, there has been a great concern among researchers and policy makers about ensuring equitable access and participation for both males and female students. Rosa (2017a) noted that gender inequality is more profound in postsecondary TVET as female participation and access generally remains relatively low in most parts of the world, including developed and developing countries. Thus, a significant component of the SDG 4 commits to ensuring the provision of “equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university” (UNESCO, 2015, p. 20).

Globally, research on access and participation have shown that women are less likely to participate in TVET as compared to men (Ayonmike, 2014; Khan et al., 2017; Kumar et al., 2019; Struthers & Strachan, 2019; Wong & Kemp, 2018). Kumar et al. (2019) argue that being identified as a man increases one likelihood to participate in postsecondary TVET. Arbeit et al. (2017) observed that male students were generally more likely to participate in CTE (TVET) courses than female students in the United States. Similarly, despite the progress made in terms of educational attainments of women in the Gulf States, Khan et al. (2017) reported low enrollment of women in TVET programs and pathways. The African Union’s (2007) strategy to revitalize TVET on the continent also reported similar outcomes in terms of the participation of women in TVET.

Other studies showed that even when female students participate in TVET, they are likely to pursue more gender-specific courses than courses in traditionally male-dominated trades and vocations (Ayonmike, 2014, 2014; Brand et al., 2013; Gudyanga et al., 2019; Janjua, 2011; Makarova et al., 2016). Generally, these studies show that women are more likely to pursue *soft* technical and vocation programs such as beauty care, business administration, nursing, hairdressing, and catering, among others (UNESCO, 2013) than they would *hard* technical and vocational courses, which include engineering, construction, and carpentry. Similarly, a study conducted by Gudyanga et al. (2019) revealed that male students in rural communities were also less likely to pursue female-oriented TVET courses.

Additionally, other studies and reports showed similar trends of participation in TVET-related science, technology, engineering, and mathematics (STEM) related fields (UNESCO, 2017). According to UNESCO (2017), whereas apprenticeship and other training and vocational programs are a common feature of TVET programs, they can provide individuals with STEM-related learning and skills opportunities. However, a UNESCO (2017) report assessing gender participation in STEM observed that women were more likely to lose interest in STEM disciplines with age and less likely to participate in STEM-oriented fields at the secondary level. Despite the high demands of students with STEM backgrounds, the report showed that women represented only 35% of the overall student enrollment in STEM-related fields at the postsecondary level. However, the lowest enrollments of females in STEM were observable in information, communication, and technology; engineering, manufacturing, and construction; and natural science, mathematics, and statistics (UNESCO, 2017).

Wong and Kemp (2018) through a semi-structured exploratory study, investigated the digital career aspirations of 32 digitally skilled teenage students (18 boys and 14 girls) between the ages of 13 to 19. The authors sought to understand how identities and discourse of gender interacted with the digital career pathways of these teenagers. The outcome of the study revealed that despite the overall consensus on the educational and career aspirations among these digitally skilled youths in computing and information technology, few girls were interested in pursuing careers in technical-oriented computing programs that continue to attract gendered discourse, thus considered a pathway for men. This disparity in gender selection of so-called soft and hard technical and vocational education streams is not limited to developing countries. Within member states of the OECD, only an average of 6% of females graduated with an engineering degree compared with 25% of males (Guerriero, 2015). Disturbingly, the UNESCO (2017) reports that women were also more likely to drop out of a STEM discipline at the postsecondary level and career cycles at a disproportionate rate than their male colleagues.

Several contributive factors account for low female participation TVET programs globally. These factors including cultural and religious norms, gender stereotypes, unfair remuneration and wages, and conscious and unconscious biases toward female participation and persistence in these fields all contribute to the low female participation in TVET (Ayonmike, 2014; Gudyanga et al., 2019; Janjua, 2011; Khan et al., 2017; OECD, 2019; UNESCO, 2017; Winch, 2013). The OECD (2019) indicated that preconceived notions and cultural assumptions that define the role of women in society play an instrumental role in shaping the decision-making of women and in TVET

attendance and program selection, although these may vary depending on the country and/or sociocultural and religious factors.

Ayonmike (2014) found that the predominance of cultural, cross-cultural, attitudinal, and religious norms and traditions that perceived women as subservient to men in society were the major factors affecting the participation of female students in undergraduate regular technical education programs at the Delta State University, Abraka, Nigeria. Thus, the participation of women in technical education was perceived as wasteful with the claim that they would eventually get married and become housewives. These societal stereotypes and ascription of gendered roles are not peculiar to female students in TVET. Gudyanga et al. (2019) in their study examining the factors that affected the participation of rural male students in perceived “female” oriented programs (Fashion & Fabrics; Food & Nutrition) in Zimbabwe observed that societal socialization of what constitutes a masculine and a feminine program impacted the decision of men not to participate in female oriented programs.

Similarly, a study conducted by Janjua (2011) in Pakistan confirms the role of culture and religion in the decision-making process of female students in TVET. For example, Janjua noted that the common cultural and religious ascription of men as the breadwinners of the family and women as the caretakers of the family were influential in determining the participation of women and girls in TVET programs in Pakistan. The author draws on the concept of *purdah* (shielding females from male strangers) which requires that “females only undertake vocations that are gender segregated or do not require them to leave their homes” (Janjua, 2011, p. 106). These gender stereotypes emanate from cultural, attitudinal, and religious factors as part of the socialization of

individuals in society and are also valid for men and their decision to participate in female oriented programs.

Additionally, other studies, especially in the Gulf States and Africa, have shown that weak systems and institutional structures and factors (such as the biased curriculum, few female faculty members in the TVET programs, and lack of career guidance at early ages) have contributed to the low enrollments of females in TVET programs (African Union, 2007; Ayonmike, 2014; Janjua, 2011; Khan et al., 2017). For example, Ayonmike's (2014) study identified the biased educational curricula, few female faculty members in the TVET programs, and lack of career guidance at early ages as the major challenges making TVET unattractive for female students, thereby justifying the low TVET participation of women in Nigeria.

Janjua (2011) also identified the lack of secondary pathways for women and the utilization of the skills obtained by women as a major hindrance to characterizing their TVET participation in Pakistan. For instance, Janjua (2011) observed the confinement of women to two broad trade areas: tailoring and craft in Pakistan limited the prospects of women to participate in TVET. Drawing on the household survey and community census data, Janjua (2011) observed that whereas 20% of women (474) between the ages of 15-60 years had some form of skill training, only 18% (84) were economically engaged, using the skills acquired from the participation and completion of TVET in income-generating activities. Interestingly, Janjua found from an interview of some of these women that the decision to undertake a skill training is often not to earn an income but rather for personal and family support reasons.

Similarly, Khan et al. (2017) argue that the lack of secondary programs for women and the bias of tertiary institutions to selectively offer programs to women based

on sociocultural norms rather than the labour market demands have contributed to the low participation and attractiveness of women to TVET programs. This lack of specialized TVET institutions for women, coupled with the organization of TVET programs, the composition of TVET teachers, and childcare facilities also play a critical role in women's participation (Ayonmike, 2014).

In another study, Struthers and Strachan (2019) interviewed secondary school students and stakeholders from TVET schools and industry to understand the barriers that affect the participation of female students in male-dominated trades in Queensland, Australia. Their study showed that systemic social and ideological barriers such as gender stereotypes, fear of intimidation, and harassment were the primary causes of the low participation rate of female students in male dominated TVET fields of study. Makarova et al.'s (2016) study showed that societal stereotypes often characterize the participation of women in TVET. For example, Makarova et al. (2016) observed that women who participated in TVET often experience being considered less skilled or less naturally capable of performing a certain task without the support of their male counterparts.

Other identified causal factors for low female participation in TVET programs include lack of awareness about the benefit such programs, inadequate financial support, and anxiety about future employment prospects (Ayonmike, 2014; Janjua, 2011). Thus, understanding the female–male participation in TVET programs may be explained by several factors—some of which are causal and others correlative. Moreover, it is important to note that these factors are transnational and, while there may be differences between the global North and global South, these differences are of degree rather than a consequence.

Geographical Trends in Access and Participation: Rural and Urban Drift

While gender differentiation in participation and persistence rates in TVET programs is highly informative, other studies explored and compared issues of access to and participation in TVET from the perspective of spatial location, particularly the differences between rural and urban areas. Generally, it is unequivocal the role of TVET in reducing rural unemployment and addressing the rural-urban migration in most economies (Agrawal, 2012). Enhancing the provision of TVET, whether formal or informal in the rural areas, therefore, is vital in upgrading the skill sets of the rural dwellers who may engage in menial occupations. For example, Oketch et al. (2009) argued that most countries in Africa saw TVET as a means to solve the rising unemployment in urban centres—a problem which was often associated with rural-urban migration.

However, despite the role of TVET for rural communities and addressing the problems of the major urban cities, many researchers have observed with great concern the urban bias in the provision of TVET (African Union, 2007; Maclean & Wilson, 2009; Rothman et al., 2013). Guenther et al. (2017) identified remoteness as a barrier to education and employment opportunities as access and participation in these opportunities can be limited in the remote areas than in the urban cities. Most research studies have found different levels of access to and participation in TVET for rural and urban dwellers (Guenther et al., 2017; Kumar et al., 2019). The major findings from these studies showed that individuals living in urban cities were much more likely to participate in TVET programs than those living in the rural areas. For example, Kumar et al. (2019), in examining the factors that influence TVET in India relying on the National Sample Survey Office Data, found that individuals living in an urban area or city had

higher chances of participating in formal TVET as compared to those who live in rural communities. The authors concluded with the findings that “being an urban dweller increases the odds of participating in formal vocational training” (Kumar et al., 2019, p. 15). This implies that students from rural and remote areas are disadvantaged in utilizing potential that TVET presents by means of their access and participation.

Similarly, studies in Australia suggested that individuals living in rural or remote areas confront significantly more challenges in accessing and participating in TVET than their colleagues in the urban cities (Ackehurst et al., 2017; Guenther et al., 2017). For instance, Ackehurst et al.’s (2017) study of Indigenous participation in TVET in Australia observed that Indigenous youths living in rural or remote communities were less likely to participate in TVET programs than their counterparts in the cities. Statistically, Foley (2007) identified variation in TVET participation across regions, with remote (16.4%) and rural (13.8%) regions having considerably higher TVET participation than non-capital metropolitan areas (10.6%) and capital cities (9.5%). Junjua (2011) confirmed that access to TVET was influenced by location. Citing the Government of Pakistan, Junjua (2011) claimed that only 18% of enrollment in vocational and polytechnic institutes was specially situated in rural areas compared to the cities.

Siriwardene and Qureshi (2009) noted that although the Asian region is predominantly rural and agrarian, there are increasing concerns about the provision of TVET in the rural areas despite its potential for improving the adoption of farm technology, expanding agro-based industry, and supporting agro-bio-technologies, there has been insufficient attention towards the provision of TVET in rural areas. A similar situation is observed in most African states (African Union, 2007). The African Union (2007) observed that excellent technical and vocational schools in most African countries

were situated in the major towns and cities, which significantly limited the access and participation of rural residents. Bemoaning the state of TVET in Africa, especially in the informal sector, the African Union (2007) noted that the “traditional apprenticeship, which is often the only means for the rural poor and the economically disadvantaged to learn a trade is marginalized, unregulated, and lacks government support and intervention” (p. 23). Consequently, the African Union indicates that this phenomenon affects the provision of TVET to individuals who need it the most—the rural and economically disadvantaged population.

Interestingly, the trend of participation of private sector entities in the provision of TVET programs exemplifies the rural–urban bias. It is evident from research studies that for-profit TVET institutions because of their profit-driven nature are more likely to concentrate in urban centres and less likely to be found in rural areas (African Union, 2007; Maclean & Wilson, 2009), leaving the provision of TVET programs in the rural areas to non-profit organizations or church/faith-based institutions (African Union, 2007). Several reasons have been attributed for the lack of participation of rural folks in TVET programs globally.

Factors such as lack of proper vocational training facilities in rural areas and income for individuals with vocational and technical degrees in the urban cities played an influential role in determining the participation of individuals living in rural and urban areas (Kumar et al., 2019). In Pakistan, Janjua (2011) observed that the small nature of the local economy and the weak consumer base of individuals living in the rural areas affected participation in TVET. Rothman et al. (2013) reported that most of TVET providers are located outside the major cities of the country, mostly located in the rural

centres, providing access opportunities to individuals who are unable to pursue further academic education. It is essential to highlight that many of the people who are unable to pursue academic studies and end up in the TVET courses in remote or rural areas are indigenous Australians (Rothman et al., 2013). Thus, findings from Rabren et al.'s (2014) study suggested a strong relationship between high relative poverty areas, participation in TVET and high rates of employment during and after high school. The prospects of these factors coupled with the availability of TVET centres and schools to rural dwellers plays an important role in determining their access and participation in TVET. Significantly related to rurality is students' SES as a determinant of participation.

Socioeconomic Status and Participation in TVET

SES or class remains a strong determinant of students' educational participation, outcomes, and choice of educational pathway. Arbeit et al. (2017) defined SES as "a composite variable that combines measures of parents' education, parents' occupations, and family income" (p. 20). Although this definition relates to household characteristics, SES can relate to the geographical locations and the concentration of economic activities in such areas (high and low SES neighbourhoods). Given the impact of SES on students' participation and achievements and choice of educational pathway, the OECD (2019) noted that "enabling young adults to access higher-quality and better-paid jobs, granting equal opportunities to students of all socio-economic backgrounds to higher education can be a powerful tool to reduce socioeconomic and intergenerational inequalities" (p. 194).

Poverty, unemployment, and societal inequalities are seen by many as a class issue that has been significantly influenced by access and participation in various forms

and levels of education (Wheelahan, 2009). The current skills mismatch and shortages in the labour market have proven to be predominantly counterproductive and affect youths from low socioeconomic backgrounds (Ackehurst et al., 2017; Wheelahan, 2009). Given the historical impact and consideration of TVET as an educational pathway for second-class citizens, results from the reviewed literature showed the existence of a strong relationship between SES and students' participation in education, outcomes, and choice of educational pathway (Arbeit et al., 2017; Foley, 2007; Griffin, 2014; Moodie & Wheelahan, 2009; Wheelahan, 2009). As noted by the OECD, students from low-educated (a proxy for low SES) backgrounds are less likely to participate in early childhood education, complete secondary education, and progress into postsecondary than their colleagues who have at least one postsecondary educated parent (OECD, 2019). This trend, in turn, creates an intergeneration cycle where students from higher socioeconomic families and neighbourhoods tend to have higher rates of access to and completion of education than those from lower SES backgrounds.

In terms of educational pathways, the outcomes from the global review of literature suggested that students from low socioeconomic families and backgrounds are relatively more likely to participate in TVET course than their peers from high SES backgrounds (Arbeit et al., 2017; Foley, 2007; Wheelahan, 2009). Even when students from the high SES backgrounds participate in TVET, they are more likely to participate in some TVET concentrations than others. For example, Arbeit et al. (2017), reporting about the United States, observed smaller percentages of participation of students from the highest SES quantile in the agricultural, human services, and transportation TVET

pathways. Several contributing factors accounts for these phenomena in participation among students from high and low SES backgrounds.

Parental level of education and social status have been identified as a major factor influencing the participation academic choices of students especially at the postsecondary level (OECD, 2019; Wang & Guo, 2018). For example, Wang and Guo's (2018) examination of the Chinese TVET system confirmed OECD (2019) findings that students from well-educated family backgrounds had lower probability of participating in TVET than students from less educated backgrounds. Specifically, Wang and Guo suggested that SES at the family level works to influence the students' choices for a PSE pathway. The authors explained that parents with higher SES seek to maintain or advance their children's SES and privileges through more traditional pathways (such as university-level studies) than in TVET oriented streams.

On the contrary, unlike students from highly educated family backgrounds, students without tertiary-educated parents are less likely to complete those more academic programs (OECD, 2019; Wang & Guo, 2018) and, thus, find TVET as a major alternative to university education. The OECD's *Education at a Glance* report for 2018 showed that "about one in three children of manual workers is also a manual worker" and that, on average, "it takes around four to five generations for children of families in the bottom earnings decile to attain the mean level of earnings across OECD countries" (OECD, 2019, p. 11). This phenomenon perpetuates the intergenerational cycle of class system and may contribute to the already existing notions of a capitalist economy.

Other factors co-exist with SES and parental education, which is associated with SES. In most countries, the social location of students and the economic activities play a

significant role in determining the participation of students in TVET. For example, Arbeit et al. (2017) observed that students from high SES community backgrounds were less likely to participate in TVET at almost every level as compared to their counterparts from the low- or middle-income localities. Similarly, Foley's (2007) study relying on the 2001 socioeconomic indexes observed higher participation rates of students from low SES backgrounds than students from high socioeconomic localities. Several reasons have been attributed to the trend of participation among students from diverse socioeconomic backgrounds.

Although the high participation of students from low SES backgrounds should be seen as a positive sign, especially from the perspective of reducing the widening gap between the rich and the poor, it is important that policy makers consider the contributing reasons for the participation of students in TVET pathways. Some studies have shown that the participation from low SES backgrounds in TVET did not provide access to progression in PSE (Wheelahan, 2009). Wheelahan (2009) investigated the extent to which TVET programs provided students from low SES backgrounds with access to progression to PSE. The outcome from the study showed that TVET pathways did not significantly improve high educational access for students from low SES backgrounds. Interestingly, the results rather showed that students who were successful in transitioning from TVET programs into higher education levels were those who had similar SES profiles to other postsecondary students.

These studies have explored the issue of the socioeconomic background of students and their participation in TVET and have shown that students from low socioeconomic backgrounds tend to have limited opportunities to access and participate in TVET. Many reasons account for this phenomenon. While, on the surface, these are

contradictory or at least confounding findings, there may be sound reasons for these outcomes, including but not limited to geography, gender, and career counselling, if available.

Race and Ethnicity and Participation in TVET

Another important social group that has attracted the attention of global policy makers and researchers in the processes of creating an equitable and inclusive educational system is students from racialized and ethnic minority backgrounds. Hamilton et al. (2015) argued that racial discrimination and systematic exposure of students from racialized and ethnically diverse backgrounds to rigorous academic curricula and unfavourable societal perceptions contributes to their overall academic and occupational outcomes. Historically, the treatment of students from racialized and ethnic minority backgrounds have partly played an influential role in their educational pathway decisions. Thus, race and ethnicity remain a strong determinant of educational access and participation, especially when accounting for participation occupational programs programs (Arbeit et al., 2017; Avis et al., 2017; Strathdee & Cooper, 2017).

Rojewski and Xing (2013) argued that “race and ethnicity are complex and multifaceted constructs, and the basis for classifying individuals based on racial or ethnic characteristics is controversial” (p. 246) as it is often difficult to give a precise definition of the terms. For the purposes of this study, race and ethnicity shall be used to classify differences among people of minority backgrounds. Rojewski and Xing (2013) define race as consisting of individuals differing in physical appearance and sharing a similar culture and lifestyle. In the United States racialized people include: White (Caucasian), Black (African American), Asian, American Indian/Alaskan Native, and Native Hawaiian

and other Pacific Islanders (Rojewski & Xing, 2013). On the other hand, Rojewski and Xing (2013) define ethnicity as consisting of people with shared or common ancestry and distinctive culture, language, history, and territory (e.g., Hispanic or Latino). Several research studies have explored the participation of racial and ethnic minority students in TVET globally, mostly in the developed countries such as United States, Australia, New Zealand, and the United Kingdom (Arbeit et al., 2017; Cameron et al., 2017; Windley, 2017) and for Black and people of colour communities (Avis et al., 2017; Hamilton et al., 2015; Rojewski & Xing, 2013).

Outcomes of such studies suggest that racialized communities (communities of colour) and more recent (e.g., since the 1970s) immigrant populations have a mixed relationship and experiences with education access, participation, and attainment (Avis et al., 2017; Cameron et al., 2017; Fletcher, 2012; Strathdee, 2012). Strathdee and Cooper's (2017) study examining educational achievement in New Zealand found that the participation in TVET remains structured at the intersectional reality of one's race or ethnicity, gender, and SES. Given the historical incidence of streaming racialized and ethnic minority students into TVET pathways, one would have expected the domination of ethnic and racial minorities in TVET. However, the outcome of the review of global literature showed that racialized and ethnic minority students are less likely to access and participate in TVET than non-racialized or White students (Arbeit et al., 2017; Avis et al., 2017; Hamilton et al., 2015; Strathdee & Cooper, 2017).

Arbeit et al. (2017), drawing on the Education Longitudinal Study of 2002 and the High School Longitudinal Study of 2009 in the United States while controlling for other student and school characteristics using the multivariate models, observed that Hispanic,

Black, and other racialized students were significantly less likely to participate in TVET than White colleagues. For example, in their study, Arbeit et al. (2017) found that Black students were four percentage points less likely to access and participate in TVET than White students.

In another study conducted by NAPE and cited in Hamilton et al. (2015), an analysis of the TVET enrollments by race in 2012 in the United States showed that 52% of the total enrollments in TVET courses were White students, 23% Hispanic students, 16% Black students, 4% Asian students, 2% two or more races, 1% American Indian or Alaska Native students, and 1% Native Hawaiian or Other Pacific Islanders. However, drawing data from the Education Longitudinal Study Cohorts, Arbeit et al. (2017) observed that more Hispanic students (97%) had access to TVET courses, compared to 91% of White students. On the contrary, when using the High School Longitudinal Study Data, the outcomes of the study confirms that White students (98%) were more likely to enroll in TVET programs than Hispanic students (95%). The discrepancy in the data sources reflects the complexity and the methodology in data collections.

Similarly, Strathdee and Cooper (2017) observed a positive relationship between ethnicity and participation in TVET in New Zealand. The authors suggested that the participation of racialized and ethnic minority students disproportionately decrease as the complexity, level of training, and the expected income increases in comparison with other students of European descent. Specifically, when examining student diploma recipients, Strathdee and Cooper (2017) observed that of the post-high school diploma holders in New Zealand, approximately 63% were Europeans, Maori and Pasifika retained 17% and 8% respectively, with the remaining percentage belonging to other ethnic groups.

Other studies have also identified that race was an important factor in determining the field of study (Arbeit et al., 2017; Fletcher, 2012; Hamilton et al., 2015) and the extent to which students racialized or ethnic minorities will progress in their studies in TVET (Chen, 2013; Strathdee & Cooper, 2017). Arbeit et al.'s (2017) study revealed that the participation of racialized students varied significantly according to the field of study. For instance, Arbeit et al. found that Asian and Hispanic students were about 4 and 3 percentage points, respectively, less likely to earn at least a credit in STEM related fields of study as compared to their White peers. Chen (2013), relying on the 2004/09 Beginning Postsecondary Students Longitudinal Study and the associated 2009 Postsecondary Education Transcript Study, examined the attrition rate of students in STEM related fields over a course of 6 years observed that the attrition rate of Black and Hispanic students were higher than students from other races.

Additionally, the occupational chances of students who participate in these TVET programs also play a significant role in determining the participation of students from racialized and ethnic minority backgrounds. Research evidence from Fletcher's (2012) study drawing upon data from the 1997 National Longitudinal Survey of Youth observed that White students were more likely to occupy STEM related positions than students from racialized and ethnic minority backgrounds. Specifically, the study found that White students were 2.4 times more likely to be employed in a STEM position than African Americans, and 2.5 times more likely to be employed in Business, Management, and Administration positions. Similarly, Fletcher also found that White students were 4.5 times more likely to be in STEM positions and 2.7 times more likely to be in Business, Management, and Administrative positions in comparison to Hispanic students.

The participation of students from minority backgrounds in accessing and participating in TVET remains a prominent factor to consider towards the effective realization of students from racialized and ethnic minority backgrounds. An appraisal of the challenges confronted by these students and the various historical factors that shaped their participation is an important part of understand how to effectively integrate such population into TVET without compromising on the long-standing perceptions that have over the years affected the status of TVET globally. Another important racialized and ethnic minority that has often confronted challenges accessing education is Indigenous populations.

Indigenous Participation in TVET

Indigenous populations are amongst those who are most marginalized in societies with a history of colonization. Several First World nations (Canada, the United States, Australia) as well as countries in the South (Latin American states, South Africa, Namibia) have histories of marginalization of Indigenous children and youths through campaigns that initially focused on forced “de-indigenization” and segregation. The *United Nations Declarations of the Rights of Indigenous People* (UNDRIP) states that “Indigenous individuals, particularly children, have the right to all levels and forms of education of the State without discrimination” (United Nations, 2007, p. 13). However, substantial evidence exists in most countries with Indigenous populations and their access to all forms of education and social services globally. Strathdee and Cooper (2017) indicated that there is a long-held perception among Indigenous populations and their supporters in New Zealand about how disadvantageous education, including TVET, was for their communities. Reasons such as the curriculum been offered, the pedagogical

process, and the qualifications produced were identified as the possible factors shaping these mindsets (Strathdee & Cooper, 2017).

Based on these factors, several scholars have explored how students from Indigenous backgrounds are further marginalized when it comes to TVET (Guenther et al., 2017; Windley, 2017). These researchers have explored the trends of access and participation of Indigenous students globally and demonstrate that, like gender, geography, and SES, the ways in which Indigenous youths' and adults' access TVET is neither linear nor uncomplicated. Indigenous access to, participation in, and persistence in TVET is complicated. While most of these researchers agree about the prospects of TVET for indigenous populations, they do acknowledge the challenges that confront the participation of the Indigenous population in TVET are compounded by geography, systemic bias based in ethnicity and historical policies, and finance as well as access.

Unlike the other racialized and ethnic minority groups, the reviewed literature suggest that students from Indigenous backgrounds have higher rates of participation in TVET than non-indigenous students (Ackehurst et al., 2017; Guenther et al., 2017; Stevenson et al., 2010). Briddle (2013) identified that Indigenous students were more likely to participate in TVET than in other forms of postsecondary (university) education in Australia. Briddle's (2013) findings have been recently confirmed by Windley (2017) who examined the experience of Indigenous youth in Australia. Windley relied on data from the National Centre for Vocational Education Research (NCVER), National TVET Provider collection, the National Apprentice and Trainee Collection, and the Student Outcomes survey. The study revealed that Indigenous students were more likely to participate in TVET in comparison to mainstream education in Australia. Windley

observed that whereas 18.7% of Indigenous students within the age quantile 15–64 years were enrolled in TVET in 2015, only 9.3% of students from non-Indigenous backgrounds of the same age quantile enrolled in TVET programs.

Similar trends have been observed in other educational systems with Indigenous students' participation in TVET. For instance, Stevenson et al. (2010) observed that although in Australia and the United States there was a moderate increase of Indigenous populations enrollments and completion in all aspects of PSE, TVET attracted the greatest portion of Indigenous enrollments and participation. Several factors have been identified to account for the strong appeal of TVET among Indigenous students.

Stevenson et al. (2010), through a targeted document review of state programs, policies, and strategies for indigenous PSE among three case study countries (the United States, Australia, and New Zealand), observed that all three countries had state funds that were directed to supporting Indigenous-controlled postsecondary institutions. The authors observed that whereas TVET oriented programs predominated the courses offered in these Indigenous focused postsecondary institutions, fewer bachelor and advanced degree programs existed. This phenomenon offers a clearer picture as to why there is a moderate increase of Indigenous student enrollment in PSE (Guenther et al., 2017; Stevenson et al., 2010), with a significant number of these students preferring to enroll and complete their degrees in TVET postsecondary pathways as compared to the traditional pathways. Other factors have also been associated with the seeming attractiveness of TVET to Indigenous students.

Ackehurst et al. (2017) argued that the accessibility (lower entry requirements) and geographical availability (i.e., widespread of TVET providers) to indigenous

populations accounted for the high participation rate among indigenous students. TVET becomes the most suitable or, perhaps, viable option for Indigenous students because of the low entry requirements. Indigenous students who are unable to make the entry requirements for the mainstream academic pathway find TVET a more accessible study option (Ackehurst et al., 2017). This feeds into the perception that TVET courses are less rigorous, therefore contributing to its increasing low status and reputation (Fletcher, 2012; Hamilton et al., 2015).

Contrary to the high participation of Indigenous students in TVET, other studies have observed that Indigenous students are more likely to drop out and not complete the courses of study than non-Indigenous students (Guenther et al., 2017; Windley, 2017). Guenther et al. (2017) also found that while Indigenous students are more likely to enroll in TVET programs, the completion rates among Indigenous populations were comparably lower than students from non-Indigenous backgrounds. This phenomenon was far worse in the rural or remote areas as attrition in TVET is high, particularly at low Australian Qualifications Framework (AQF) levels certificate I and II, which are envisioned to be pathways into higher-level qualifications (Guenther et al. 2017). Ackehurst et al. (2017) argue that it is important for policy makers to come out with policy measures to educate and boost the educational outcomes and completion rates of Indigenous students especially those from rural areas and to assist them in recognizing the full benefits for completion.

This section describes our understanding of the importance of education in enhancing not only the indigenous practices but also contributing to their overall economic and sustainable life. TVET practitioners, working closely with Indigenous

leaders and communities, are required to present the benefits and importance to TVET to indigenous youth and adults. The importance of TVET to aboriginal communities for social and economic development and to youth for post-education employment opportunities should be promoted to indigenous youth. Apart from the students from Indigenous communities, other researchers have explored the access and participation situation for students living with some form of disability.

Students Living with Disabilities and Participation in TVET

Lastly, another social group that faces significant challenges in accessing and participating in education are people living with a disability. The World Health Organization (WHO) argued that disability is a complex, dynamic, multidimensional, and contested part of societal reality and condition where almost everyone at a certain stage in life is likely to either experience a temporary or permanent impairment, with individuals facing increasing difficulties in functioning at old age (WHO, 2011). There are several types and forms of disability. Gottfried et al. (2016) identified three types disability: learning disabilities, sensory limitations, and physical disabilities. The International Labour Organization (ILO, 2017) estimates that people living with disabilities comprise 15% of the world's population and an estimated 785 million people of working age.

People living with disabilities may confront significant challenges, including poor health and lower rates of participation in education, training and employment (ILO, 2017; WHO, 2011). They are more likely to be excluded from accessing social services such as education, health care, and employment, among others. Educational systems all over the world have implemented different forms of educational models to accommodate these varied types of disabilities. Students living with disability can participate or access

education in three major types of schooling systems: segregated schools (students are classified according to the form of disability and allocated to a specialized school); integrated schools (students with disabilities are placed in the mainstream educational system with other students without disabilities); and the inclusive school system (where school policies, practices, structures, and cultures are adapted to recognize and accommodate the needs of students with disabilities (UNICEF, 2012). Although all of these types are major ways of engaging and providing people living with disability the skills needed to perform actively in the labour market and contribute to sustained economic growth, several challenges impede their access and participation in TVET programs.

The ILO (2017) argued that the more inclusive TVET systems could be, the greater the likelihood they can enhance the productiveness and earnings of people living with disabilities. Hence, the United Nations' *Convention on the Rights of Persons with Disabilities* (CRPD) highlights the need for disability-inclusive vocational education and training (WHO, 2011). Countries are urged to ensure that appropriate mechanisms and support systems exist to fully include individuals living with disability in the TVET especially at the postsecondary level without any form of discrimination and bias (ILO, 2017, p. 2).

However, studies on access to and participation in TVET especially at the postsecondary level for students with disability have shown limited opportunities for people with disability disability (Gottfried et al., 2016; Malle et al., 2015; Polidano, 2013; Pullman, 2019). Specifically, the reviewed literature shows the multiple challenges (discrimination and bias) that students living with disability face in accessing education

either overt and unconscious, which sometimes leads to exclusion and marginalization from schools (UNICEF, 2012).

A policy brief by the ILO (2017) identified five significant barriers that excluded people with disabilities from accessing and participating in TVET. These barriers include financial barriers, physical barriers, procedural barriers (rules and regulations), communication and information barriers (approaches to training, training materials that are not accessible to students with disabilities), and attitudinal barriers, such as negative attitudes and stereotypes popularly held by students and staffs (ILO, 2017).

Investigating the barriers that constrain the active participation of students with disabilities in TVET in Ethiopia, Malle et al. (2015) identified additional barriers that had direct impacts on student learning, including the lack of adaptive educational materials and facilities, a lack of trained facilitators of teachers, and systematic segregation of students with disabilities. For instance, 27 out of the 30 administrators interviewed perceived students with a disability as unfit for some specific courses that were deemed “hard skills” (such as automobile repair, manufacturing, constructions). Malle et al. (2015) posited that administrators instead preferred to see students with disabilities enroll in “softer” programs such as accounting, business, or information technology. The attitudes of these administrators are likely to lead to streaming students with disabilities into some courses and actively discouraging their participation in others or else TVET entirely.

Issues and Concerns of TVET Within the Global Context

Globally, TVET systems are regarded as the “gold standard” in adapting and responding to the fast pace of global transformation precipitated by the ongoing digital

revolution, climatic disruptions, migration, and demographic changes (Preckler Galguera, 2018). TVET is seen as a solution for the advancement of the socioeconomic development of countries, equipping individuals with the requisite employability and entrepreneurial skills, facilitating the transitioning into greener societies, alleviating societal inequalities, and promoting a sustainable future. However, despite these prospects, the TVET sector is confronted with challenges that mitigate against the full realization of its potential for individuals, the state, and society.

Parity of Esteem

Historically, one of the significant challenges affecting participation in TVET among prospective students has been the issue of the attractiveness of the TVET sector and programs. Attractiveness, in terms of TVET, can be defined as the desire of students to choose vocational and technical education and training over academic education (Winch, 2013). In most countries, TVET is regarded by many as a substandard education and training alternative at the secondary and postsecondary level in comparison to general education. TVET is perceived as a dead-end educational stream (Marope et al., 2015, p. 94) and therefore regarded as the last resort by many students and their families (African Union, 2007; Agrawal, 2012; Asian Development Bank, 2014; Ismail & Abiddin, 2014; Musset et al., 2019). This unfavourable notion of TVET contributes to widely held perceptions among students, parents, and the general public that the TVET pathway is a preserve of second-class students and students with so-called low academic outcomes or occupational destinations. Several factors have contributed to the increasing unattractiveness and negative reputation of TVET globally.

Most researchers have identified historical and cultural factors as the major barrier affecting the status and low prestige of TVET education globally, both in the developed and developing world (Marope et al., 2015; Winch, 2013). Winch's (2013) examination of the challenges that inhibit the attractiveness of TVET attributed the unattractiveness to TVET to social dynamics that create the phenomenon and attitudinal problems and alternatives of interested parties. Winch (2013) argued that the seeming unattractiveness of TVET, although varying from country to country, is pervasive and rooted in history highlighting the historical connections of TVET to the working class (those who have to work for a living and who do not partake of the kind of education fit for the elite) as a significant cause of the low status of TVET programs. Winch (2013) identifies this historical connection of TVET as the educational pathway for "non-elite" students and the subsequent restriction and isolation of TVET curriculum from non-elite education (general education) as a significant factor influencing its persistent unattractiveness and stigmatization. Similarly, Marope et al. (2015) attribute the historical isolation of TVET programs, especially at the secondary school level, from other mainstream educational pathways as one of the accounting reasons for the low status of TVET.

Winch (2013) admonishes us against the consideration of the attitudes of students and parents as the sole reason for the low status of TVET. Winch (2013) argues that there is a close connection between employer demand for TVET qualifications and individual demand for TVET courses. According to Winch (2013), the attitudes of employers, governments, and other players within an economy also play a vital role in shaping the attractiveness of the sector. Therefore, the lack of employers' demand for TVET

graduates can negatively affect the status of TVET. From the government perspective, the attitudes and directions of the government can affect the status of TVET. Although governments generally find TVET attractive, especially its contribution to economic growth and development, Winch argues that such acknowledgments are mostly held in abstraction as many countries have ignored the economic potential of TVET by imposing barriers to protect nascent sectors of their economies.

Additionally, whereas some researchers generally perceive TVET as an effective means to educate disadvantaged groups—including women and girls, racialized students, and low SES students, among others (Maclean & Wilson, 2009)—others argue that such intentions contribute towards the unattractiveness of TVET because it targets those very groups that may benefit the greatest from access to TVET (African Union, 2007; Asian Development Bank, 2014; Winch, 2013). For example, the African Union (2007) attributes the unattractiveness of TVET to the posturing and the imagery created by some African leaders. According to the African Union, African governments use TVET as a justification to absorb school dropouts and students who fail to obtain or meet the entry requirements for mainstream academic or general education—such as the university. Similarly, Brand et al. (2013) argue that the historical streaming of low-performing students into CTE pathways has impacted the perceptions and, subsequently, the decision-making process of parents and students about high school courses and career pathways. Such approaches and rhetoric adopted by leaders only reinforce the preconceived notions and feed into the historical narratives that TVET is the pathway for “second class” students: those who require specific job-related training to become employable and to contribute to the economy.

Other reasons for poor attitudes toward TVET include assumptions that TVET graduates will have poor remuneration or low wages and connect to low-status manual work. These assumptions are transnational and have been identified as contributing to the negative public perceptions toward TVET (African Union, 2007; Agrawal, 2012, 2013; Musset et al., 2019; Winch, 2013). According to Winch (2013), there is a direct relationship between remuneration and attractiveness of TVET; thus, reasonable remuneration for TVET graduates is likely to improve attractiveness for prospective students.

Ismail and Abiddin (2014) note that in Malaysia, TVET tends to be the last recourse for students with fewer academic qualifications. Poor recognition and low acceptance of TVET among students and employers were found to be the reasons that influence the decision-making of prospective students (Ismail & Abiddin, 2014). These attitudes also affected negatively parental confidence in the prospects and career aspirations offered by TVET for the future of their children, therefore posing significant challenges for the development of TVET (Ismail & Abiddin, 2014). As argued by Winch (2013), “when an activity is perceived to be of low status, it is likely to be seen as unattractive” to students, parents and, in many cases, policymakers (p. 106).

In Sub-Saharan Africa, the African Union (2007) also notes that the poor public perception of TVET in Africa can be associated with the low standards and entry requirements into TVET programs and the limited opportunities for further education and professional development in the continent. Similarly, in Australia, Lamb (2011), examined the challenges confronting the TVET systems in appealing to new populations (immigrants) and providing lifelong learning opportunities among students from

disadvantaged populations (i.e., early school leavers, Indigenous populations, students with disability, students from low socioeconomic backgrounds, and rural or remote communities). Lamb (2011) noted that the low status of TVET is a significant hindrance in helping achieve the new national educational targets in Australia. Lamb argues that the status problem was more prevalent in a secondary school as most students prepare for PSE, especially university or TVET (college and apprenticeship) pathways.

Researchers globally have argued that this generally held, cynical view of parents, students, and other members of society toward TVET constitutes a significant barrier in utilizing its prospects for individual and national development. TVET's potential contributions to skill and knowledge development, employment pathways, and social mobility, they argue, are undermined by entrenched societal pre-conceptions of its value (African Union, 2007; Agrawal, 2013; Alagaraja & Arthur-Mensah, 2013; Ismail & Abiddin, 2014; Khan et al., 2017; Lamb, 2011; Maclean & Lai, 2011; Winch, 2013). Siriwardene and Qureshi (2009) argue that the low status of TVET among students and their parents decreases its effectiveness in creating employment opportunities and helping in addressing national and global developmental efforts. Khan et al. (2017) argue that the negative attitudes of parents and students towards TVET have resulted in low numbers of male and female students in specialized TVET institutions and courses.

Although there has been an improvement in the image, status, and reputation of TVET in many countries, Marope et al. (2015) raise concerns about the disconnections between the prioritization of TVET at global and regional levels and its relative unattractiveness among individuals and families. They believe that such disconnections can be disingenuous to collective efforts adopted in maximizing the potential of TVET to

support individual and national developmental agendas. The authors attribute the adoption of proactive policy measures such as the hybridization and the blurring of the TVET and academic educational streams in high income and developed countries as accounting for increasing the attractiveness of TVET. They provide examples of Finland and the Republic of Korea to buttress their point.

Funding of TVET Globally

Funding remains an integral part of developing an effective and efficient TVET sector that is strategically aligned towards achieving the Agenda 2030 SDGs. Despite the global attention and acceptance of the immense role of TVET in reducing youth unemployment, societal inequality, and poverty and in creating a sustainable environment, the TVET sector remains under-resourced (OECD, 2012b; UNESCO-UNEVOC, 2017). The underfunding of the tertiary technical and vocational sector is, therefore, an impediment to the global efforts in confronting the societal challenges. The OECD argues that any attempt to expand and create new programs to respond to the labour market demand will require substantial investment in teaching staff, the provision of new infrastructures, and an upgrade to the existing ones (UNESCO-UNEVOC, 2017).

Although funding allocations to TVET varies considerably from country to country, there is overwhelming evidence to support the observation that funding to the TVET sector is insufficient (African Union, 2007; Asian Development Bank, 2014; Eichhorst et al., 2012; Hanni, 2019; Kis & Park, 2012; Lamb, 2011; Oketch, 2009). The lack of appropriate levels of funding adversely affects the quality and responsiveness of TVET to the needs of the labour market. For example, Siriwardene and Qureshi (2009) and UNESCO-UNEVOC (2017) argue that despite the relatively high cost of running TVET, the sector is extremely underfunded in most countries of the world. That is, the

share of the public budget allocated to TVET is most often significantly low as compared to the other forms and levels of education.

In Sub-Saharan Africa, an extensive review of extant literature and policy documents points to insufficient funding allocations to TVET systems and programs (African Union, 2007; Alagaraja & Arthur-Mensah, 2013; Oketch, 2009; Okoye & Arimonu, 2016). Walther and Uhder (2014) state that African countries spend on average only 5% of their total public expenditure on education on TVET. For instance, according to the African Union (2007), Ghana spends 1%, Ethiopia 0.5%, Mali 10%, and Gabon 12.7% of the total share of the general education budget on TVET. Similarly, in the Southern Africa Development Community region, UNESCO (2013) reports that the total percentage of the education budget allocated to TVET ranges from 0.6% to 13.6%.

The lack of appropriate mechanisms of funding to TVET is not peculiar to developing nations. Some countries in Europe spend less of their education budget on the provision of TVET than developing nations. For instance, Lamb (2011) notes that whereas the state and territorial government in Australia are the major contributors to TVET, providing 75% to 80% of the total TVET funding, such funding is not commensurate to the rate of growth in the TVET sector which has seen a substantial increment in enrollments and the number of delivered hours. Lamb reported that funding to TVET is constrained by competing demands from the health sector and rising welfare expenses resulting from the ageing Australian population. Thus, Long stated that the recurrent educational expenditures devoted to TVET in Australia declined by 11.9% in 6 years and 22.3% since 1997 (as cited in Lamb, 2011). Lamb (2011) argues that “the continuing growth of TVET delivery, in conjunction with declining public recurrent

expenditure per hour of delivery, exposes multiple funding and delivery issues, particularly in the context of the COAG² targets” (p. 69). This suggests that funding constraints to TVET are not a unique challenge confronting developing countries but rather one that affects the global efforts of both developed and developing countries in creating an inclusive TVET system.

Consequently, the inadequate provision of funding for the TVET sector has proven to have adverse consequences on equitable access and participation to an inclusive quality TVET programs (Alagaraja & Arthur-Mensah, 2013; Asian Development Bank, 2014; Eichhorst et al., 2012; Oketch, 2009; Palmer, 2017). For instance, my review of the research literature suggests that insufficient funding impacts staffing and remuneration policies, maintenance of academic facilities and infrastructure, and the quality of programs (Okoye & Arimonu, 2016; UNESCO-UNEVOC, 2017). Poorly equipped and maintained workshops and inadequate administrative infrastructures often result in low internal efficiency (Karam, 2006), thereby “churning out” of half-baked graduates (Okoye & Arimonu, 2016).

Consequently, because of inadequate financing, countries are compelled to rely on other sources such as employee contributions, private donations, income-generating activities, and external assistance (e.g., Official Development Assistance [ODA] and official intergovernmental assistance loans) to mobilize the needed support for the provision of TVET programs. For example, in East Asia and the Pacific, Palmer (2017) stated that ODA to TVET increased by 133% from US\$53 million in 2002 to US\$124

²COAG stands for Council of Australian Governments. COAG is the highest intergovernmental forum in Australia, which constitutes the Prime Minister, state and territory First Ministers, and the President of the Australian Local Government Association

million in 2014. Similarly, Karam (2006) suggested that international donor agencies such as the World Bank, the Islamic Bank for Development, the Arab Fund, and the German Development Agency contributed more than US\$200 million to support the TVET sector in Lebanon. In Latin America and the Caribbean, Hanni (2019) indicated that although payroll tax accounts for almost 90% of the total revenue to general education and TVET institutions, there seems to be extensive opportunity for further diversification as student fees and sales of training services are being implemented to assist in the financing of institutions.

Insufficient budgetary allocations from governments, especially in developing countries, lead to the overreliance on loans and grants from international entities such as the international financial institutions (the World Bank, the Asian Development Bank, and the International Monetary Fund [IMF]) and the private sector for the continued survival of TVET sectors globally. The Asian Development Bank (2014) indicated that external financial supports in the form of loans and grants from multilateral and bilateral organizations contribute about 54% of the total investment to various TVET ministries in Sri Lanka. Despite financial support and contributions from other donor partners such as the World Bank, the IMF, and the Asian Development Bank, among others, Alagaraja and Arthur-Mensah (2013) question the sustainability of such support systems.

Chapter Conclusion

Achieving the SDGs will require substantial attention on all aspects of TVET, including widening access and participation for individuals from diverse backgrounds. This chapter examined global literature to provide an overview of how TVET is understood, defined, organized, and delivered globally. It also explored the issue of

access to and participation in TVET for students from diverse socioeconomic backgrounds, including: gender, geographical location, race and ethnic minority, indigeneity, SES, and disability with particular emphasis on the factors that influence the participation of these groups. I conclude the chapter by providing an overall picture of the issues that confront the TVET sector, including funding and parity of esteem. The next chapter will situate all the issues discussed in the Canadian context. I will provide a brief overview of the Canadian education system, the state of TVET and the trend lines of participation for different socioeconomic groups as well as the issues confronting the sector. I will also examine briefly measures adopted by both the provincial and federal governments to ensure access to and participation in TVET for all.

CHAPTER FOUR: TVET IN CANADA

The Canadian education system is widely considered a leader internationally and ranked among the top performers globally (OECD, 2019). Educational participation and completion rates remain high in most of Canada's provinces and territories. The Canadian education system has a proven positive educational environment, high participation rate, fair and inclusive policies, and remarkable graduation rates. However, despite these positive educational gains and global recognition, there exist many shortcomings in the Canadian education system. These shortcomings include unequal access to quality schools and qualified, quality teachers for Indigenous peoples, inequalities of access and retention of students from racialized communities, and, for our purposes, a lack of attention to TVET in comparison to more traditional academic pathways. These shortcomings have attracted considerable attention among stakeholders, critics, and scholars at the national and provincial/territorial levels.

In this chapter, I begin by providing a brief overview of Canada's education system with specific emphasis on the TVET system(s). I proceed to look at the trend lines of participation in PSE in Canada, comparing the access to and participation in university, college, and apprenticeship education and training. Further, I explore the sociodemographic dynamics regarding access to and participation in TVET for all. The barriers to access and participation in TVET programs for students from diverse sociocultural, economic, and geographical backgrounds are also discussed in this chapter.

Overview: Current State of TVET in Canada's Education System

Canada is a federal state and operates a decentralized educational model under the *Constitution Act, 1867*, which bestows the governance and administration of

education into the hands of the provincial and territorial governments (Canadian Information Centre for International Credentials [CICIC], 2009). Decisions, organization, delivery, assessment, curriculum content, funding, and other significant educational issues and concerns are thus the prerogative of the provincial and territorial governments (Government of Canada, 2018). Canada has 13 provincial and territorial educational systems and a federal system for indigenous education. Each of the provincial, territorial, and federal indigenous systems have some forms of similarities and differences. Elementary and secondary school education remains free and compulsory for all Canadian students of Kindergarten to Grade 12 (Government of Canada, 2018), although there exist in each province private or independent schools. Canada's private school systems are often faith-based and/or, like Montessori schools, established on approaches to child development and education. Many Canadian provinces (e.g., Ontario, Alberta, and Saskatchewan) have faith-based public schools, primarily Catholic schools but in Ontario and Alberta protestant separate schools, as well as language-based public systems (e.g., Ontario's French school board, Quebec; Young et al., 2006).

Given the complexities of the educational model operated in Canada, the Council of Ministers of Education, Canada (CMEC) was established in 1967 by the provincial ministers of education as an intergovernmental entity that serves as a forum for the discussion of policy issues at the national level (Fisher et al., 2006). According to the Government of Canada (2018), CMEC

provides a forum for provincial and territorial ministers of education to discuss matters of mutual interest, undertake educational initiatives cooperatively and represent the interest of the provinces and territories with national educational

organizations, the federal government, foreign governments and international organizations (pp. 38–39)

The formation of the CMEC in Canada has provided a common platform to build and chart a coherent and comprehensive pan-Canadian vision for education both at national and international levels. Although the jurisdiction of education policy that responds to the SDG 4 is still entirely the prerogative of the provincial and territorial governments, a common platform for charting a “national” educational agenda exists in the form of the CMEC to discuss issues such as Canada’s positionality in terms of achieving the educational components of the SDGs. Apart from the CMEC, there exist other avenues for federal government participation in education in Canada.

The Government of Canada (2018) identified four major avenues through which the federal government still influences the provision of education, especially at the postsecondary level. These include: the Canada Social Transfer, the tax system (specifically tax credits for educational savings accounts), research and development expenditures (primarily at the postsecondary level), and student financial assistance and education saving incentives (specifically through the Canada Student Loans Program and the Canada Education Savings Program). It is imperative to note that both the federal and provincial governments share a commitment to innovate systems of education that respond to economic demands and diversification, and that contribute to building social cohesion while strategically positioning Canada as an international powerhouse of economic and social mobility (Government of Canada, 2018; Sharpe & Gibson, 2005; Street, 2014).

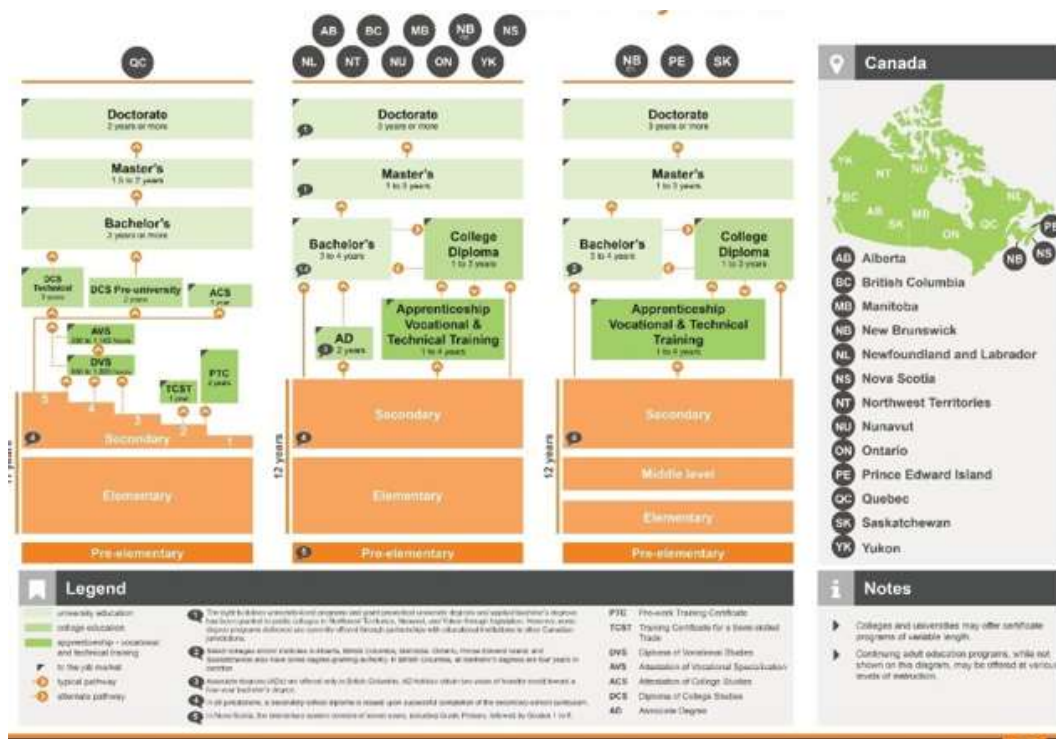
With an increased focus on the 4th Industrial Revolution (Desire2Learn, 2018), governments are mainly concerned with how graduates of their educational

institutions (K–12 and postsecondary) make the transition to paid employment (Government of Canada, 2018; Rahman et al., 2005). These concerns are particularly noticeable with the increasing focus on pathways to jobs that do not require a university or college degrees. Hence, the complexity in the provision of educational services is increased when one considers the various levels or hierarchy of post-K–12 schooling, job or career training, and the needs of the economy within the limits of a provincially governed educational model. Figure 3 displays the complexities of the educational structure in Canada and the pathways of progression from different provinces and territories.

Figure 3 shows educational pathways by province and territory. Generally, PSE, particularly the earned doctorate, is seen as the highest form of educational attainment in all provinces and territories. The Government of Canada (2018) defines tertiary or PSE as including “university degree and college degrees that are typically technical or occupational skills for direct entry into the labour market” (p. 40). Thus, postsecondary is viewed as encompassing academic, professional, and technical and vocational programs and courses taken beyond the secondary-school level. However, Usher (2018) argues that there has been a shift in the conception or idea of PSE in Canada from what was traditionally a narrow focus on “universities” and “community colleges” to one that considers a new wave of the hybridization of college system called the polytechnics and the emergence of university colleges, especially in Alberta and British Columbia. Unlike most countries, especially European countries (Remington, 2018), apprenticeship education in Canada is considered part of the PSE system, both in its structure and target population (Usher, 2018).

Figure 3

Structure of the Canadian Education System by Province and Territory



Source: CICIC (2009).

Statistics Canada (2017b) data suggest that more than half of Canadian adults aged 25 to 64 (54%) had completed some form of PSE in 2016, compared to an OECD average of 36.7%. This impressive postsecondary participation rate in Canada has been attributed to the sizeable and well-distributed Canadian college sector (Statistics Canada, 2017b). Similarly, the evidence presented by Statistics Canada shows that Canada has the highest proportion of college graduates compared to other OECD countries, partly in recognition of the college–university pathway programs and the emphasis of provinces on skills- and job-preparation at the college level. Canadians’ participation in PSE, as reported in the 2016 Census, showed that

22.4% of Canadians aged 25 to 64 had a college diploma, 3.1% had a university certificate below bachelor’s degree, and 28.5% had a bachelor’s degree or higher, adding up to 54.0% of Canadians aged 25 to 64 with either college or university qualifications. (Statistics Canada, 2017b, p. 2)

Many Canadians have both college and university credentials, which helps illustrate the integration of these credential pathways. The census data showed that “an additional 10.8% of Canadians had an apprenticeship or other trades certificate” (Statistics Canada, 2017b, p. 2). Although these statistics paint an impressive picture of the state of PSE in Canada, it is crucial to critically examine the backgrounds of the individuals who access, participate in, and graduate from PSE institutions in Canada. It is also important to interrogate these data by considering the factors that shape the PSE and career trajectories of students, especially those from less privileged backgrounds.

This is important because Canada still operates a highly stratified PSE system with imaginary hierarchical structures (especially between university, college,

apprenticeship/trades pathways, and career training pathways). These structures contribute to the widely held perceptions of the quality of education and, particularly, determining the wages of individuals, thus impacting on the development of an effective and efficient TVET system. Unravelling these concerns will help in developing policy frameworks that are not just looking at increasing access and participation for students from diverse sociodemographic backgrounds but instead that demonstrate the Canadian society's willingness to ensure their employability prospects and increase wages of these individuals.

Historical Development and Organization of TVET in Canada

TVET in Canada often is conceived as career, technical, and professional (CTP) education (Álvarez-Galván et al., 2015). The historical development of TVET in Canada dates back to the late 1800s with the influential contribution from the Canadian Manufacturers' Association, which led a campaign for state-supported technical and vocational education, particularly following the First World War (Holmes, 2017; A. Taylor, 2016). However, the role of TVET has shifted significantly since the establishment of industrial schools in the late 1800s and early 1900s from one that focused on preparing marginalized youths to be obedient to the standards and rules of the industry, to the current approach that is tailored towards developing the transferable knowledge and skills of all youth irrespective of their social backgrounds (A. Taylor, 2016).

Currently, just as in most countries globally, TVET in Canada is regarded as an essential educational pathway for creating a knowledge-based economy and responding to the skills and competencies required by youth and adults to become successfully employed. As a result, provincial and territorial governments align TVET within the

framework of their educational (K–12 and PSE) systems and seek to provide students with quality, and often industry or trade specific learning opportunities required for active labour market participation (Statistics Canada, 2010). Like most countries, the current technical and vocational education model in Canada’s provinces and territories are divided into two levels: secondary and postsecondary.

TVET in Canada is organized and delivered at the secondary (K–12) and the postsecondary level as educational and training programs with specialization for skilled or trades oriented occupations. However, TVET occurs in formal, informal, and/or nonformal educational sectors by either a public or private entity and, occasionally by not-for-profit entities that serve Indigenous communities and recent immigrant populations (Statistics Canada, 2010). Secondary (K–12) TVET is offered concurrently with academic courses in a comprehensive school or specialized TVET-oriented schools. Whereas most secondary schools in Canada are predominantly academically oriented, offering general programs that prepare students for transitions into PSE, there exist a few schools that specialize in the delivery of vocational training and education programs. The goal of non-academic and vocational programs in high schools in Canada is intended to prepare students for either an early entry into the labour market or for continuing education at the postsecondary level—a non-university pathway (Government of Canada, 2018). This pathway leads to an apprenticeship or trades-focused college programs which form the core of what TVET is in Canada.

Recognizing the increasing demand for a highly skilled technical and professional labour force required to propel economic and sustained growth, Canada, as with many other countries, has explored the advantages of providing industry-specific and trades-

related education and training to its citizens beyond the secondary level. Whereas the establishment of the first postsecondary college was not until 1920, the development of TVET at the postsecondary level surged into the mainstream in the mid-1960s (CICIC, 2009). The CICIC states that the establishment of TVET at the postsecondary level responded to the perceived demand for non-university trades training and the disappearance of many traditional unskilled labour jobs.

Governments, which were also investing significantly in the expansion of universities, recognized the need for vocational and technical training pathways, both for the economy and for social cohesion (CICIC, 2009). These initial waves of investment in TVET at the postsecondary level required regular investments and for a significant adjustment in the 1990s. At that time, with the reformulation of industrial sectors to more automated approaches, educational reformers and industry influencers argued for significant reforms. These reforms were based on the recognition that trades and formerly “academic” knowledge and skills were not necessarily different silos.

Most provincial governments gradually authorized some public colleges and institutes to develop and offer applied degree programs (CICIC, 2009). Álvarez-Galván et al. (2015) identified a total of 131 public and 25 private recognized institutions in Canada with a further 35 private institutions that have been accredited to offer specific postsecondary TVET programs. These TVET institutions at the postsecondary level in Canada are categorized into apprenticeship and college systems. Understanding the operation and players within the various TVET systems in Canada will provide a broader understanding of the issues and concerns confronting the sector.

Colleges (Public and Private) in Canada

According to Álvarez-Galván et al. (2015), the college postsecondary pathway in Canada provides students with an opportunity for a wide range of specialized skills that enables Canadian students to focus on relevant occupational skills. Although colleges in Canada are mostly regarded as a diploma- and certificate-granting institutions, Álvarez-Galván et al. indicate that the number of public colleges offering degrees, including postsecondary tertiary type 5A³ credentials are increasing in Canada. Álvarez-Galván et al. attribute this phenomenon to the increasing demands of colleges to meet the labour market needs and their presence in different geographical locations. Both public and private entities operate colleges in Canada offering certificate or degree programs. Although most private colleges in Canada run certificate programs, Martin and MacLaine (2016) indicated that there are also a few that run degree programs.

Public colleges, mostly known as community colleges, are established, operated and governed by the state on a not-for-profit making basis. Usher (2018) sees community colleges as the most diverse form of PSE in Canada, mostly delivering programs in 2-year technical, vocational, and trades-oriented fields to mainly mature students who are not directly coming from high school. Private training colleges, also known as career and business colleges, on the other hand, are privately established, owned and controlled by individuals or corporations that are in to make a profit. Private colleges makeup one-fifth of the Canadian college sector (Martin & MacLaine, 2016) and are often seen as “lesser-known players” in PSE provision (Li, 2006). Despite their lesser-known status, private

³ “Tertiary-type 5A refers largely to theory-based programs lasting at least three years full-time, and typically covers university undergraduate and master’s degrees providing qualification for entry into advanced research programs” (OECD, 2012c, p. 89).

colleges although they are smaller than the public colleges (Li, 2006), occupy a vital aspect of the Canadian PSE system, especially contributing towards the realization of the SDGs. They serve as an alternative educational pathway to more academic-oriented programs and usually target older populations. Martin and MacLaine (2016) alluded to this by suggesting that students attending private colleges in Canada are on average much older, females and low socioeconomical backgrounds.

Despite the decline in enrollment, a recent study by Martin and MacLaine (2016) indicates that private colleges in Canada are more attractive for underskilled learners with little or no prior PSE experience, workers who are interested in improving their skill sets, and individuals who are making a career change and require further training to adapt to their new roles. As a result, private colleges in Canada are usually seen as a flexible and convenient educational option. Private colleges in Canada offer courses such as business and commerce, financial management, secretarial science, computer science, health professions and various other fields of study (Li, 2006). Programs administered in private colleges are mostly for a short-term duration usually on a 1-year or less basis.

The monitoring, regulation, and licensing of colleges (public or private) are under the auspices of the provincial and territorial governments (Martin & MacLaine, 2016; Statistics Canada, 2010; Usher, 2018) and sometimes receive public support in terms of funding to run programs (Li, 2006). For instance, in Ontario, the Ministry of Colleges and Universities is responsible for regulating PSE and skills training (MacKay, 2014). However, the lack of information and research on private colleges in Canada presents a daunting task in noticing the total number of private colleges existing and operating in Canada. Martin and MacLaine (2016) reported that there are over 1,300 privately owned

and operated career and training institutes that train over 170,000 students annually. In Ontario, there are more than 450 registered private colleges (Li, 2006; MacKay, 2014) that focus on providing students with practical skills based on specific or defined occupational lines such as trades, health care, information technology, applied arts and design, transportation, personal services, and law enforcement (Martin & MacLaine, 2016). The total enrollment in private colleges in Ontario according to MacKay (2014) stood at 60,000.

Although these private colleges provide programs similar to public community colleges, they are usually more expensive and some, such as DeVry, offer highly specialized programs. Private colleges may be more responsive to market demand and, as a result, create challenges for both students and government regulators. Notably, Martin and MacLaine (2016) raised concerns about the quality and the lack of cohesive quality assurance mechanisms that guarantee strict adherence to the rigorous standards for programs and institutions operating private colleges in Canada. Questions as to the viability of access to private colleges for students from diverse backgrounds also becomes an issue of concern. These concerns are especially important in the recent wake of calls at the global sphere for public-private collaboration in ensuring equitable access and participation of all in various aspects of education (Rosa, 2017b). However, in Canada, Martin and MacLaine (2016) stated that the private college sector has become vulnerable and susceptible due to the “influence exerted on it by regulations, markets, its performance - and, most importantly, public perception” (p. 70). Although these regulatory measures are necessary to wane the sector of the negative impact of illegal and rogue operators and to give credibility to these career colleges, the government needs to

work collaboratively with private organizations to ensure that practices are streamlined and tailored towards ensuring equitable access to college education in Canada (Fisher, 2006). This will enhance government understanding of the needs of private colleges and the role they can play towards the realization of the SDGs.

Apprenticeship Education in Canada

Apprenticeship education is a component of PSE in Canada. Lehmann et al. (2015) argue that apprenticeship education is perceived as a solution to the increasing youth unemployment and labour shortages in skilled trades. Álvarez-Galván et al. (2015) indicate that apprenticeship plays a significant role in the provision of skills in the labour market. Therefore, apprenticeship education is primarily industry-driven, with most public colleges required to establish an advisory committee (whose role is to provide relevant information on the current skills need of the labour market) that include employers and other experts (Álvarez-Galván et al., 2015). The apprenticeship model blends industrial (workplace) and educational (in school) training for students. Thus, apprenticeship education focuses on the provision of practical knowledge and skills through on-the-job training with some form of theoretical components provided through formal educational institutions (Statistics Canada, 2010). About 80% of the time spent by apprentices takes place at the workplace, with the remaining 20% undertaken in schools and, especially, colleges.

Most apprenticeship programs in Canada are organized as skilled trades, which assumes the traditional technical- and vocational-oriented nature of these occupations. Examples of apprenticeship trades include but are not limited to auto mechanic, hairdresser, electrician, plumber, machinist, and chef (Frank & Jovic, 2017; Usher, 2018). Usher (2018)

argues that apprentices are not considered students but, rather, employees with signed apprenticeship contracts who periodically attend classes. Usher adds that this explains why students within the apprenticeship streams are not considered in most national education surveys. The provincial and territorial regulatory bodies regulate the skilled trades or apprenticeship programs within Canada with the government of Canada playing a minimal role (Álvarez-Galván et al., 2015). The provincial government determines the standards for training and certification in conjunction with the role of industry.

Typically, most apprenticeship programs take 4 years to complete. Apprenticeship education in Canada is categorized into the Red Seal and non-Red Seal Programs. The Red Seal programs are the conventional standards established to access the skills of apprentices or tradespersons across Canada. Students who complete an apprenticeship program that meets the standards and pass an examination receive a Red Seal endorsement on their provincial/territorial trade certificates. A Red Seal certificate ensures consistent standards and interprovincial mobility of students who undertake the examination after completion of the trades or apprenticeship program (Álvarez-Galván et al., 2015). This guarantee gives graduates from apprenticeship programs an opportunity to gain employment in any of Canada's provinces and territories.

On the contrary, the non-Red Seal trades do not have interprovincial standards established to qualify tradespersons to work in other provinces. Most of the non-Red Seal trades do not have an examination requirement to work in the trade. Most of Canada's youth and adults participating in an apprenticeship program enroll in the Red Seal trade apprenticeship program rather than the non-Red seal apprenticeship program. In Ontario,

for instance, the Ontario College of Trades⁴ regulates the skilled trades and apprenticeship programs offered by both public and private colleges. There are over 150 skilled trades categorized into four primary areas of trades: construction, industrial, motive power, and service. Students may enroll through the traditional apprenticeship pathway (which is the direct route), Specialist High Skills Major (SHSM), Ontario Youth Apprenticeship Program (OYAP), Dual Credit Programs (high school/college), College Full-time Certificate Programs, Pre-Apprenticeship Programs, and Union or Industry Approved Training.

Frank et al. (2017) found that most students in apprenticeship programs were enrolled in the Red Seal trades. They reported that of the total number of students enrolled in apprenticeship programs, 76% were enrolled in the Red Seal apprenticeship programs while only 24% were enrolled in non-Red Seal programs. According to the authors, apprentices who took part in the National Apprenticeship Survey generally reported positive employment outcomes with most of them indicating securing permanent full-time jobs with associated benefits in their jobs. The study also observed that students who discontinued their apprenticeship programs were more likely than completers to be self-employed.

The overview of the apprenticeship and college sector, which encompasses much of what TVET is in Canada, helps us to understand and appreciate its role in the 21st century. Despite the prospects of TVET in creating the needed jobs or even providing individuals the skill sets to be self-employed, evidence from the Canadian literature

⁴ The Ontario College of Trades (the College) is an industry-driven, professional regulatory body that protects the public by regulating and promoting the skilled trades.

reviewed shows worrying trends of participation of students from disadvantaged social backgrounds, which if not addressed will be an affront to the measures adopted. widening access and participation for students from these backgrounds in TVET and their subsequent participation in society. The following section delves deeper into the trends in TVET participation for various sociodemographic groups.

Trend Lines of Access to and Participation in TVET

Canada remains one of the top performers among the OECD member states with significant strides in ensuring a positive learning environment, a high participation rate, and a relatively inclusive educational system. Research outcomes and policy briefs show that the majority of Canadian youths (under the age of 24) are enrolled in some form of PSE: university, college, or an apprenticeship program (Council of Ministers of Education, Canada [CMEC], 2017; Davies & Guppy, 2010; Finnie et al., 2014; Rahman et al., 2005; Usher, 2018). According to Usher (2018), over 2.5 million youths representing 6.8% of the entire population in Canada are enrolled in universities, colleges, and apprenticeships programs. Interestingly, however, many concerns have been raised regarding access to and participation in TVET in general, especially among students from at-risk sociodemographic groups in Canada.

Guerriero (2015) noted that the percentage of students enrolled in vocational education and training programs at the upper secondary level in Canada remains the lowest among the OECD member states. In a 2018 report, the Higher Education Strategy Associates (HESA) confirmed the assertion that access to postsecondary TVET pathways in Canada remained low (Usher, 2018). Although the general trend in PSE enrollment and participation especially in universities and colleges in Canada has been rising

steadily, Usher (2018) reported that enrollments in the university pathway had proportionally seen more growth than enrollments in college and trade education.

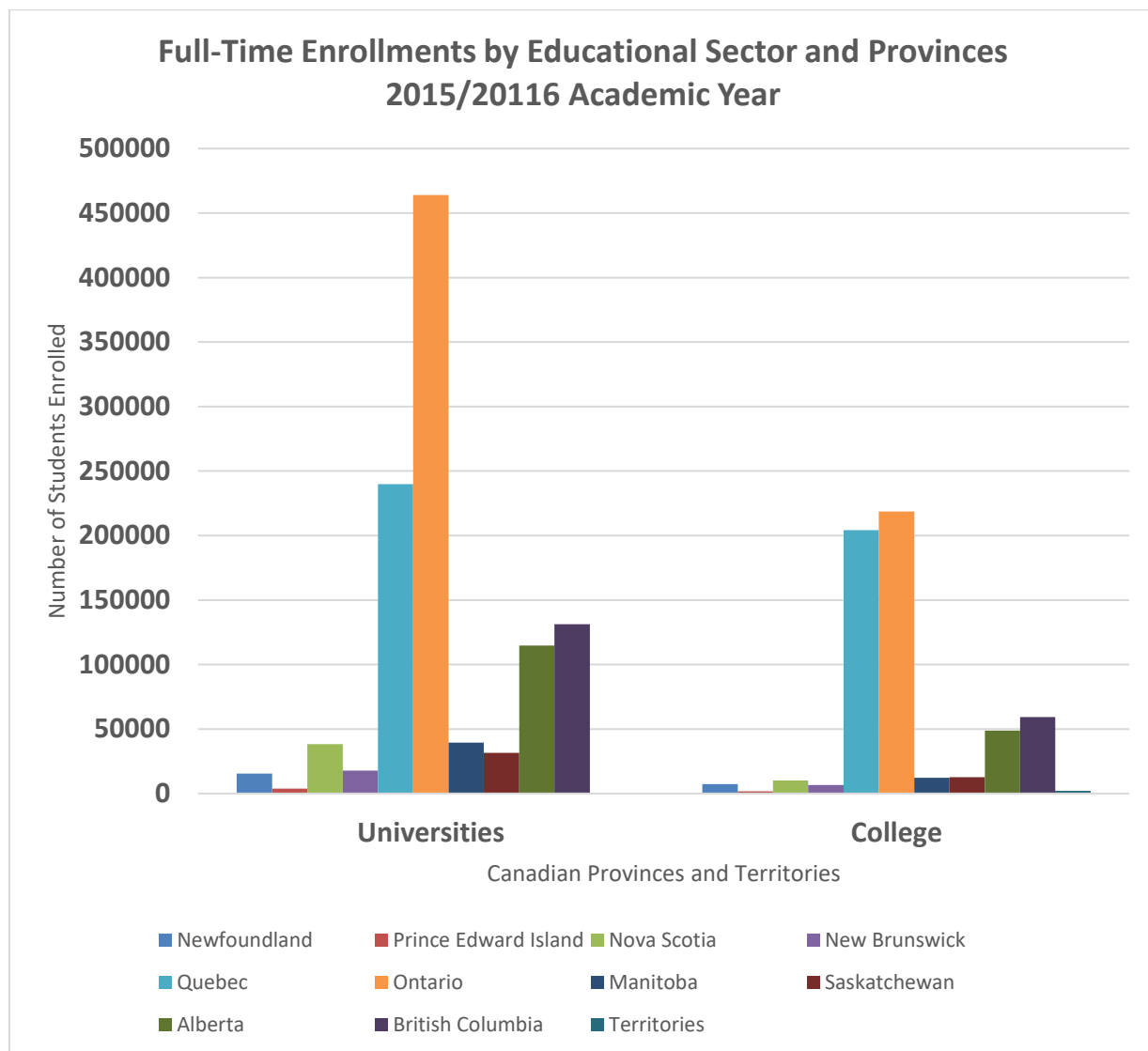
Usher (2018) provided a trend analysis of university and college participation rates from the 1992–1993 academic year to 2015–2016 academic year. In the report, Usher observed a gradual increase in the share of the PSE market for colleges, with enrollments in colleges increasing significantly while students' enrollments in Canadian universities were remaining stable or declining slightly from 1992/1993 to 2000/2001 academic year. This trend, however, reversed with a more significant proportion of postsecondary students opting for university-level programs, although the number of college students increased by ~20 percent from the 2002/2003 academic year to the 2015/16 academic year. Specifically, in the 2015/2016 academic year, the report by the Higher Education Strategy Associates showed that whereas there was a steady increase in students enrolled in the university pathway, there was a marginal decrease in college enrollments. Usher argued that out of the approximately 1.7 million full-time equivalent students enrolled in 2015/2016, the majority (two-thirds) were enrolled in university while one-third enrolled in college programs. These college programs are technical and vocational education programs, although colleges are increasingly offering more traditional degree programs in competition with universities and university pathway/transfer programs.

However, due to a lack of data on enrollment in apprenticeship programs on the same level, it is difficult for this study to conclude the participation and enrollment rates between academic and vocational education pathways as the numbers do not exist to make such comparison. Besides, HESA observed that the majority of full-time students

enrolled in postsecondary education across the provinces and territories in the 2015/2016 academic year were in the university pathway (Usher, 2018). Figure 4 shows the enrollment statistics for both colleges and university pathways for the 2015/2016 academic year.

Figure 4

2015/2016 Full-Time Enrollments by Educational Sector and Provinces



Adapted from Usher (2018).

The report also suggested that most Canadian youths from all the 10 provinces preferred university education over a college education. For instance, Usher (2018) commented that among all the provinces and territories in Canada,

Ontario has the country's most outsized university system, making up roughly 45% of total seats (compared to just 38% of the country's population). Quebec, with just 22% of the population, has one-third of the college students, due mainly to the CEGEP system's status as a pre-requisite to university study. (p. 12)

The Collège d'enseignement général et Professionnel (CEGEP) is a publicly funded PSE pre-university, collegiate technical college exclusive to the province of Quebec. It is an education system where students can voluntarily enroll in the program for 2 years (Molgat et al., 2011). It appears from that were there seem to be deliberate policy measures towards TVET, enrollment rates increase.

Despite the high preference for university education, an examination of the field of study of PSE students in Canada also presents a disturbing picture especially at a time where there is a high demand for skilled labour force with specific technical and transferable skills (Sullivan et al., 2018). For instance, a majority of the 2015/2016 academic year graduates from colleges and universities were found to have participated in three general fields of studies: business, management, and public administration (21.5%); social and behavioural sciences, and law (15.1%); and health and related fields (14.3%; Statistics Canada, 2017a). Contrary to the widespread assumption that colleges offer only technical and vocational education programs and courses to students, Usher (2018) provided a different picture of college education in Canada.

Commenting on the state of Canada college education and preferred field of study for students, Usher (2018) noted that people who are used to viewing college education as being "technically-oriented" may be surprised to see humanities dominating as the

number one field of study in Canada (p. 16). These findings suggest that the increasing enrollments in college education over the years has mostly been in the business and health-related fields (Usher, 2018). These general fields of study are similar to the programs offered at the university level but maybe more differentiated to include university pathways as well as shorter term, employment directed programs. With this trend of college programs gradually assuming the nature of university programs, apprenticeship and trade schools remain the plausible TVET option to provide students with the requisite skills for the 21st-century market.

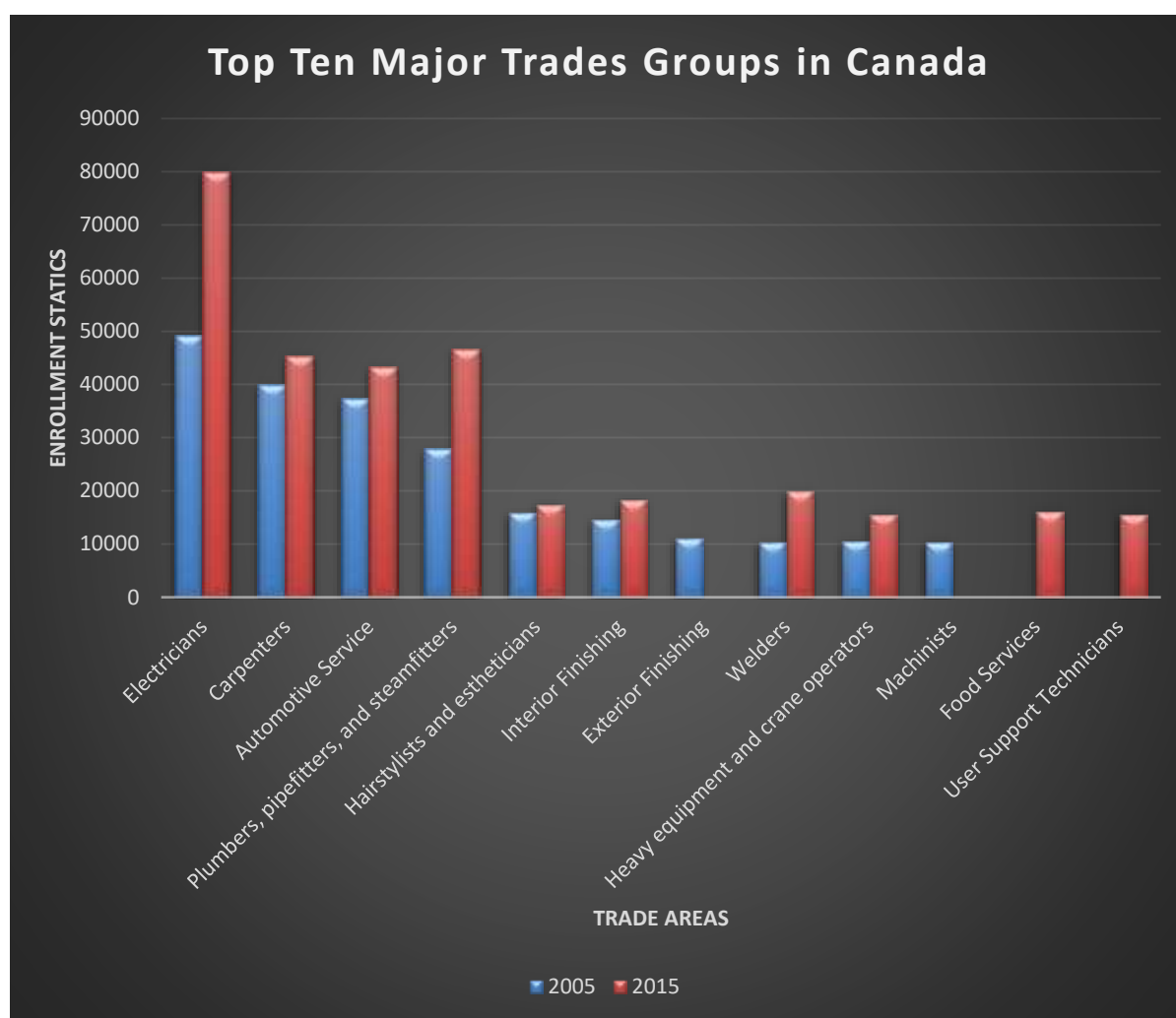
Comparatively, apprenticeship completion rates in Canada are generally lower than countries were with the availability of data on apprenticeship education (Guerriero, 2015). Notwithstanding the low participation rates, Usher (2018) argues that data on participation in apprenticeship education in Canada over 10 years has been commendable. Examining the trend of participation in apprenticeship programs in Canada, Usher observed that whereas enrollments in apprenticeship significantly increased by 200% from 1995 to 2015, enrollments in college education had increased by ~50% and universities by an estimated two-thirds. Usher attributed the quantum increase in college enrollments to the expansion in the Canadian national economy in the 1990s, which necessitated the creation of more apprenticeship positions and programs. Although there were 1-year declines in 2010 and 2014, enrollment in apprenticeship programs has stabilized (2 years) at 450,000, or 75% of enrollment levels in the college sector.

Usher (2018) ascribed the decline to the downturn in the economic sector of Canada. However, although the stability can be attributed to the far-sightedness of companies to keep hold of their apprentices despite the downturn, Usher associated it to the way apprentices were counted. Thus, whereas new apprentices were registered right away after submitting their forms, old apprentices leaving their positions were

not documented as completely nor quickly (Usher, 2018). Figure 5 compares the top 10 significant trades programs undertaken by students in 2005 and 2015.

Figure 5

Comparison of Top 10 Major Trades Fields of Study in Canada, 2005 vs. 2015



Adapted from Usher (2018).

Figure 5 shows a breakdown of the top 10 fields that apprentices enroll in comparing 2005 enrollment figures with 2015. The chart shows that electricians are the highest enrollment at both data points. Although food services did not make the top list in 2005, it found its way into the top 10 enrollment list in 2015 as did “user support technicians.” The latter trade may reflect the changes to the economy, which has seen a shift to more digital/ICT related fields. Machinists and exterior finishers, on the other hand, dropped off the top 10 list. This figure presents useful and relevant information on the participation of students in apprenticeship programs in Canada. It is worth mentioning that seven out of the 10 top trades accounting for 60% of all apprentices in Canada are in the construction and automobile industries.

What Is the TVET Access and Participation Picture in Canada?

Canada is highly committed to the realization of the Agenda 2030 and the UNESCO Sustainable Development Goals (SDGs), both at home and abroad. This commitment was validated by Prime Minister Justin Trudeau in his address to the United Nations when he stated: “The SDGs are as meaningful in Canada as they are everywhere else in the world” (as cited in Government of Canada, 2018, p. 2). However, a review of academic and grey literature shows that there exist significant barriers to the effective implementation of TVET in Canada, especially for students from disadvantaged families and social backgrounds. Like more general international trends, barriers to education for students from marginalized communities and groups include institutional, accessibility, financial, and dispositional barriers. Commenting on the reality of educational disparities in the Canadian context, Prime Minister Justin Trudeau wrote:

In Canada, most of us are fortunate enough to enjoy a high quality of life. We are strong in our diversity and united by values like equality and inclusion. We enjoy

unsurpassed natural beauty, global, open cities and vibrant communities. Yet even in Canada, historically marginalized groups—including Indigenous peoples, women, LGBTQ2 communities, newcomers, people with disabilities and others—still face unequal and unacceptable barriers. (as cited in Government of Canada, 2018, p. i)

Trudeau’s statement shows how entrenched the challenges are that students from marginalized sociodemographic backgrounds face in integrating into the Canadian economy. Acknowledging that there was no “golden age” of equal access to education, especially PSE, in Canada, the persistence of a significant participation barrier is most manifest in all levels of PSE for students from those communities identified by the Prime Minister. For example, Lehmann et al. (2015) found that opportunity structures do exert some powerful influence on the education and employment pathways of young apprentices. Opportunity structures are defined as “as the outcome of the interrelationships between ascribed characteristics such as social class, gender, or race and structural conditions such as the education system, labour market structures and processes, and employers” (Roberts, as cited in Lehmann et al., 2015, p. 45). The economic, social, linguistic, and cultural capital of students are strong determinants of the education trajectories and career pathways they pursue. The next section will look at the perceived barriers affecting access to and participation of various sociodemographic groups in TVET in Canada.

Gender Participation in TVET in Canada

Some would suggest that the shift in gender participation at the PSE level in Canada is highly positive—a success story. Since 1992, Canada has had a sustained record of increasing female enrollment and graduation rates that far exceed their male

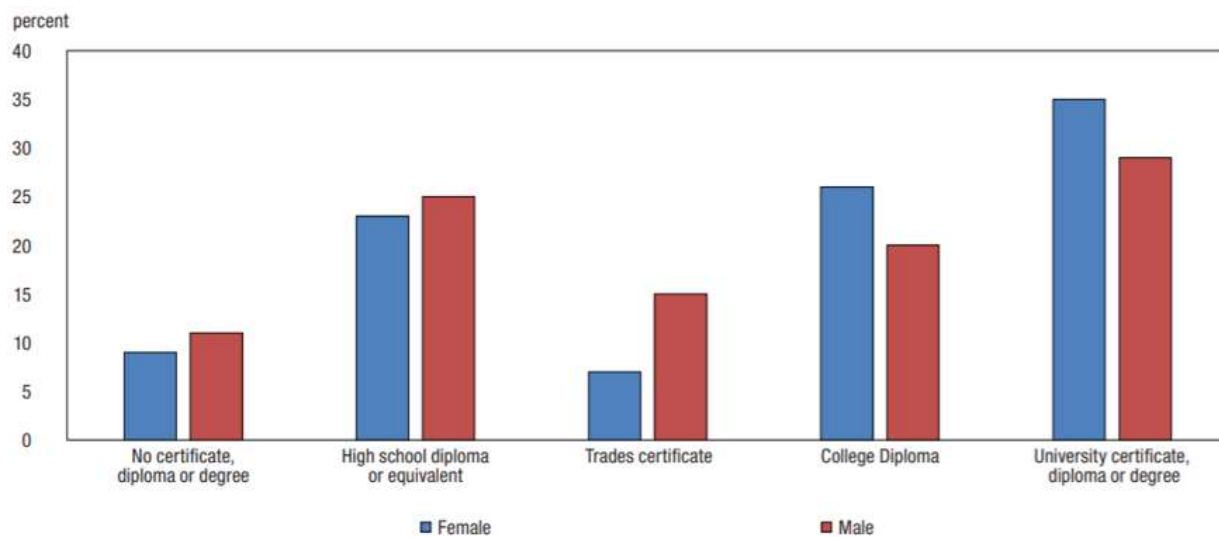
counterparts. According to Statistics Canada (2017a) data, women represent 56.3% of the enrollments in programs that lead to a postsecondary credential compared to 43.7% for their male colleagues. However, despite the progress made in attendance and graduation rates for women, there exist high degrees of concern among stakeholders on gender participation and segregation in postsecondary academic and vocational education (Government of Canada, 2018). These concerns, amongst others, include the “boy” problem (the poor success of males in high school and transitions to universities) and the declining percentage of males in certain professions (education, nursing, medicine, law, biological sciences), the absence of women from many STEM-related professions, and, in the TVET fields, the high segregation of males and females into traditional fields (e.g., males into carpentry and electrical and women as hairstylists and estheticians, etc.)

Gender segregation in education has been identified as a significant barrier in ensuring gender diversity across occupations as it limits the career opportunities for both women and men in academic and vocational oriented disciplines (Government of Canada, 2018; UNESCO, 2015). In Canada, there is a general trend of choice of field of study and pathway among men and women (Ferguson, 2016; Frank & Frenette, 2019; Statistics Canada, 2017a). Thus, whereas women dominate the enrollments and graduation rates in the university and college pathways, enrollment in apprenticeship programs is mostly dominated by males (Ferguson, 2016). Ferguson (2016), relying on the 2015 Statistics Canada data set, provided distribution of the population of Canadians aged 25 to 64 and their highest certificate, diploma, or degree by their sex. See Figure 6.

Figure 6

Distribution of Population Ages 25–64 by Highest Certificate, Diploma, or Degree by

Sex in 2015



Source: Ferguson (2016).

Ferguson (2016) found that whereas women were more likely than men to have college or university qualifications than apprenticeship or trades certificates, men were nearly twice as likely as women to have trades or apprenticeship credentials. Similarly, Statistics Canada (2017b) data suggest that the most significant gains in terms of postsecondary participation for male students were found to be in apprenticeship education and STEM-oriented fields while those of female students were found to be in academic degrees or the behavioural fields.

Despite the overall improvement of women enrollments and graduation rates in PSE, research evidence and data from Statistics Canada (2017a) show that the STEM fields are still male-dominated. For instance, male students accounted for two-thirds (72%) of the total postsecondary graduates in STEM compared to one-third (28%) for females with significant disparities in engineering, computer science, and skilled trades (Government of Canada, 2018). Statistics Canada (2017a) observed that the number of male students graduating from universities and colleges in programs such as architecture, engineering, and related technology has been seeing a steady increase for a decade. In contrast, these same data showed that the majorities of female graduates from the universities and colleges were in business, management, and public administration. These fields have remained the top field of study for the past 24 years.

This pattern of participation and graduation by gender in PSE confirmed the evidence from other parts of the world about the low enrollment of women in STEM. Similar studies observed low participation of females in the apprenticeship/trade courses, with alarming rates of participation in supposedly male-dominated apprenticeship courses (Ferguson, 2016; Frank & Frenette, 2019). The Government of Canada (2018) bemoaned

the low participation of women in STEM fields. Therefore, this trend of PSE participation is a significant affront to the realization of SDG 4.5: “eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations” (Government of Canada, 2018, p. 51). PSE in Canada is gender-segregated, especially along the field of study—with men dominating the apprenticeship pathway and women dominating in the university and college pathways. Several influential factors have been associated with the current participation and subsequent graduation trends in vocational and trade-oriented programs in Canada along the gender lines.

Lehmann et al. (2015) observed from their study that economic conditions and availability of postsecondary alternatives impacted the decisions of young Canadians to enroll and graduate in apprenticeship programs. Frank and Frenette (2019) explored the participation of female apprentices enrolled in male-dominated fields and vice versa using the National Apprenticeship Survey (NAS) data. The outcome of their study showed that whereas male apprentices accounted for 90% of most of the male-dominated apprenticeship fields of study, women accounted for 94.1% of all female-dominated apprenticeship fields. The outcome of Frank and Frenette’s study showed entrenched gender participation in apprenticeship courses.

Frank and Frenette (2019) argued that sociodemographic characteristics were associated with the choice of trades program, especially among female students. For instance, the authors observed that older women who were born in Canada and who had a father with a certificate in trades were more like to opt for male-dominated

apprenticeship programs than older females without a father who had a certificate in trade. Conversely, the authors observed that a mother with a trade certificate negatively impacted the decisions of female apprentices opting for male-dominated fields of trades.

Taylor et al.'s (2015) interviews with female apprentices in Alberta observed that more female youths than male youths relied on family support and external influences in deciding to pursue a trade. The study also found that young women pursuing trades in a female-dominated field confronted fewer social and personal challenges than females who enrolled in male-dominated fields of studies. This study suggests that the female students lacked confidence in determining their career paths. This lack of confidence in their abilities (Taylor et al., 2015) to succeed in particular trades, coupled with the challenges they confront when they enroll in male-dominated fields of studies, maybe the cause of the lower number and percentage of females in male-dominated and STEM-related fields. As noted by Taylor et al. (2015), "women who succeeded in completing apprenticeship training did so because of their family habitus and expansive training experiences" (p. 93). The role of the family in determining the career trajectories of the students should therefore not be discounted in the effort to achieve gender parity in all fields of study.

Other factors, such as labour market outcomes and dynamics, significantly influenced the participation of women in male-dominated trades fields. Frank and Frenette (2019) showed that comparatively, women who graduated from male-dominated apprenticeship programs were less likely to be employed, get a job in their apprenticeship-related field of study, and received fewer benefits (such as median hourly wages) than their male colleagues. Frank and Frenette also reported that women who

specialized in mixed or female-dominated fields experienced minimal disadvantages across labour market outcomes compared to men who studied in the same types of programs. These reasons explain the skepticism of most women in enrolling in male-dominated study fields.

Geographical Location Influences on Participation in TVET in Canada

The geographical location of prospective postsecondary TVET students was also found to be a vital determinant of the choices they make regarding postsecondary destinations. The majority of the reviewed articles and documents showed that students from the urban cities were more likely to opt for university education than their colleagues from rural communities (Finnie et al., 2014; Kirby, 2010; Rahman et al., 2005). However, the outcome of these studies differed in terms of the degree of participation among students from the rural and urban centers in PSE participation in Canada.

Rahman et al. (2005) observed a marginal difference between students from the rural and urban areas in university education but no significant difference in terms of a college education. In contrast, other scholars observed a significant difference between the college/university preferences made by students from rural and urban cities. For example, outcomes from Kirby (2010) and Finnie et al. (2014) showed a significant difference between students from rural and urban communities in university and college education. These findings confirm the outcomes from the reviewed literature from the global context, as discussed in chapter three of this study. For instance, Kirby's (2010) examination of the postsecondary decision-making of rural students in the province of Newfoundland and Labrador using 1,169 survey responses from 72 schools observed that students from the urban cities were more likely to opt for university education than their

colleagues from the rural areas. In the study, students from rural areas tended to be more inclined towards non-university postsecondary options.

Similarly, much broader research and a recent study conducted by Finnie et al. (2014) support the outcomes that students from rural communities are more likely to attend non-university institutions. Relying on Cohort A of the Longitudinal Youth Survey Data, Finnie et al. examined the impact of a student's background characteristics on their PSE outcomes in Canada. Their data revealed that students from rural areas were less likely than those from urban cities to attend university. Conversely, the evidence suggested that students from rural communities were more likely to attend colleges than those from urban centers. Finnie et al. (2014) also noted that "both males and females from urban areas, are less likely to attend college than their rural counterparts, but more likely to attend university" (p. 10). Several factors were identified from the reviewed literature as contributing to this trend of PSE participation among students from urban and rural areas.

Data from Statistics Canada reinforce the urban–rural divide and add a regional dimension to the divide. The majority of graduates from university education were from the largest provinces in the country (Ontario, British Columbia, Alberta, and Quebec) while the Atlantic provinces recorded the highest college graduation rate (Statistics Canada, 2017b). Explicitly, the report stated that the "overall in Canada, smaller urban communities—or census agglomerations (CAs)—had a higher proportion of the population with a college diploma than large urban centres" (Statistics Canada, 2017b, p. 10).

Proximity to the postsecondary institutions was identified as the major contributing factor influencing the PSE destination of urban and rural students (Finnie et al., 2014; Kirby, 2010). For example, many colleges in Canada are located outside of

metropolitan regions providing more access to rural dwellers than those in the urban centres (Usher, 2018). Whereas some of these colleges have a distinctly “rural” agenda, they also maintain high tech programs, often illustrating how technology is infused into agri-business related fields. Other contributing factors that influenced the decisions of students for university or non-university pathways included academic, gender, and after-school activities (Kirby, 2010). Students’ performance and uncertainties around what happens after the completion of PSE also play a significant role in shaping the postsecondary career destination of students (Kirby, 2010). Even though proportionately more students from the rural localities participate in TVET might seem a positive outcome considering Canada’s commitment towards the SDGs, policymakers must take action to deconstruct the notion that non-university education is the easy way out for students.

Race and Ethnicity

By committing to SDG 4, the Government of Canada subscribed to ensuring a “comprehensive, holistic, ambitious, aspirational and universal ... education that transforms the lives of individuals, communities and societies, leaving no one behind” (UNESCO, 2015, p. 24). Canada, as a country, is increasingly becoming more ethnically and racially diverse because of its immigration and economic policies. The Canadian PSE sector attracts students from all ethnic and racialized backgrounds. However, some evidence shows that students from racialized and ethnic backgrounds confront significant barriers to access and to persist at all levels of the Canadian educational system (Gordon & White, 2014; Hodgkins, 2017). The racialization of and discrimination towards students from these backgrounds have tremendous adverse consequences on their participation and access to TVET. Thus, ensuring access to and active participation of

students from racialized and ethnic backgrounds to higher education pathways remains a priority for both the federal and provincial/territorial governments in Canada.

Recently, the Government of Canada (2018) reported that almost 75% of adults aged 25 to 64 had earned at least a high school diploma or equivalent certification and 23% percent of adults had earned a college diploma in 2016. This rate of participation saw an upward increment of 18.7% from the previous year. However, despite efforts to ensure equal access to and participation of disadvantaged groups in PSE (Government of Canada, 2018), evidence from the reviewed literature showed that students from racialized and ethnic backgrounds still confront significant barriers in access and participating TVET (Gordon & White, 2014; Laryea & Medu, 2010). Among the racialized communities, Indigenous students have an impressive participation rate in the TVET courses, especially in apprenticeship streams in Canada (Gordon & White, 2014; Government of Canada, 2018).

Kumar (2009), using the 2008 national census data, indicated that Indigenous students were as likely to participate in technology or trades and related fields (36.7%) as non-Indigenous (Canadian) students (37.7%). Similarly, a recent study by Guerriero (2015) relying on the National Household Survey data confirmed that Indigenous students in Canada despite their relatively low participation in PSE attainment (48% compared to 65% for non-Indigenous students), were more likely to participate and complete TVET to non-Indigenous students. Per the data, whereas the findings showed that Indigenous students were as likely as non-Indigenous students (12%) to complete a college program, they were slightly ahead with regards to their likelihood of completing an apprenticeship or trades certificate program than non-Indigenous students (12%).

However, Usher (2018) reported that Indigenous students were more likely to enroll in college courses than in a university program partly because of the location of the colleges. For example, an examination of the participation data showed that Indigenous students who lived off reserve were more likely to have participated and completed in apprenticeship programs than indigenous students who lived on the reserves (Gordon & White, 2014; Statistics Canada, 2017b). Gordon and White (2014) explain that Indigenous students living off the reserves were more likely to participate in the TVET course (college or apprenticeship) because they can see the real value of their PSE credential through their proximity to the economic activities than those living on the reserves. These findings confirm Ackehurst et al.'s (2017) findings that the geographical availability of colleges influenced the high participation of Indigenous students in vocational education. Gordon and White (2014) argued that the participation of Indigenous students in apprenticeship, trade, and college programs can largely be attributed to low entry requirements, and fewer resources commitments (financial and time) compared to university programs. This finding collaborates similar reasons for the high participation rates of indigenous students in Australia and New Zealand as observed in the previous chapter.

Persons with Disability

Several research studies show that people living with a disability are more likely to be socially excluded and discriminated in most aspects of education and social and economic life (Álvarez-Galván et al., 2015). In Canada, people living with disabilities face significant barriers both in society and in education, are of a high risk of living in poverty and have lower participation rates in the labour market (Government of Canada,

2018). Data from Till et al. (2016) show that people living with disability who had higher levels of educational qualifications were much more likely to be employed than those with lower levels of educational attainment. The Canadian Survey on Disability data showed that an estimated 2,338,200 Canadians aged 15 to 64, or 10.1% of the population in this age category, lived with a disability in 2012. Several efforts have been adopted by governments to improve the economic and social participation of people living with a disability. Álvarez-Galván et al. (2015) argue that the Government of Canada between 2010 to 2015 invested over CAD\$1.7 billion targeted at improving the employability of people living with disability with a further CAD\$200 million committed towards supporting provincial and territorial efforts towards improving the employability of students living with disability.

Despite all these efforts, persons living with a disability still confront significant challenges in accessing and participating in PSE than those without disability (Álvarez-Galván et al., 2015). Although the level of education plays a critical role in labour market participation, the findings of this study confirm the findings from the reviewed literature that persons living with a disability are less likely to participate in postsecondary TVET in Canada. Distinctively, the findings of this study suggest that persons with disabilities were more likely to be older and less educated on average than those without any form of disabilities.

Socioeconomic Status and Participation to TVET

Generally, research has shown a strong relationship between a family SES and access to PSE in Canada (Kirby, 2010; Rahman et al., 2005). Family SES consists of a variety of factors such as income, parental level of education, and family structure. These

factors play a significant role in determining the education attainment, level of progression, and choice of a postsecondary pathway of students. The Government of Canada (2018) stated that despite the enabling postsecondary environment created to ensure equal access to training opportunities for all, the participation of individuals from low socioeconomic backgrounds remains a considerable challenge. Several research studies on the participation of students in PSE observed a positive relationship between family SES and PSE participation (Rahman et al., 2005).

Rahman et al. (2005), drawing on Statistics Canada's Survey of Labour Income Dynamics (SLID), a longitudinal survey, observed that students were more likely to participate in PSE, especially university if they had parents with higher levels of education. Additionally, the authors observed that although family income played a crucial role in determining a student's participation in PSE, there was no significant difference between its role in determining the preferred postsecondary pathway for students. Thus, the authors observed that students from high-income family backgrounds were more likely than low-income students to attend college.

Other Major TVET Concerns in Canada

As with most countries, the Canadian TVET (college and apprenticeship/trade) is constrained with some critical issues that are worth examining. Several researchers have identified the lack of prestige and funding as the major barriers that could impede the country's efforts towards utilizing the full potential of TVET education to support economic growth and development (Frank et al., 2017; Sharpe & Gibson, 2005; A. Taylor, 2016). This section will discuss these two challenges and examine the measures adopted at the provincial and federal level in addressing these concerns.

The Attractiveness (Parity of Esteem) of TVET in Canada

The evidence from the Canadian educational context, with specific reference to Ontario, confirms the evidence adduced from the global context that TVET continues to be an unattractive pathway educational pathway for students at the secondary and postsecondary level. A. Taylor (2016) argued that historically within the Canadian context, most Canadian youths had considered TVET as a preparation ground for second-class citizens. Several factors have been associated with the profoundness of this negative perception towards TVET amongst Canadian youths (Álvarez-Galván et al., 2015; Cournoyer & Deschenaux, 2017; A. Taylor, 2016). For instance, Molgat et al. (2011) observed that the perceived poor status of TVET programs among Canadian youths could be attributed to poor public perceptions, parental influences, the unavailability of support for students, and the apparent unattractiveness of employment opportunities in TVET fields. TVET fields have not been viewed as occupations that support economic and social mobility upward, although as the fields themselves become more complex and less manual, these perceptions may change.

On the other hand, Lyons et al. ascribed the unattractiveness of TVET to historical antecedents within Canada and internationally (as cited in A. Taylor, 2016). According to Lyons et al., the negative perception has affected the public outlook of the sector (as cited in Molgat et al., 2011), impacting major decisions of students and parents in enrolling in TVET programs. Lyons et al. attributed the low prestige of TVET programs to the inherited hierarchical nature of the British educational system, which was structured around a class system and prioritized academic education over vocational and technical education (as cited in A. Taylor, 2016). This phenomenon, coupled with the

historical overreliance on immigrants to address the shortages of vocational and technical occupations, contributed to the public perception that TVET is meant for second-class citizens, not those aspiring to social and economic advancement.

Additionally, the legacy of the residential school system and the streaming of racialized students into vocational pathways reinforced negative perceptions of TVET (Davies & Guppy, 2010; A. Taylor, 2016). This phenomenon of streaming students into particular pathways, according to Davies and Guppy (2010), promoted what they termed as opportunity consciousness among youth, leading to or creating the perception that unexceptional K12 students to consider pursuing further academic studies. Moreover, technical and vocational education pathways at the secondary level were often viewed as mechanisms for retaining less academically inclined or able students in the schools until they were ready to move directly into the workforce, often in unskilled occupations. Davies and Guppy argue that the practices of secondary schools divesting vocational education and increasingly embracing more academic orientations pose significant challenges to colleges—which now have to offer on-the-job training to students.

Other factors such as the lack of a coherent national education governance approach, the unreliable and uneven federal support for provincial TVET, the cost-sharing arrangements between the federal and provincial governments, and the lack of coherence and strong partnerships between government, industry, and labour around training priorities (A. Taylor, 2016) have been identified as barriers affecting the status of TVET in Canada. Although the CMEC is the national body responsible for ensuring policy coherence among the various provincial and territorial, the lack of a national educational system serves as an impediment for a holistic national approach to address the barriers confronting TVET. For example, the inability of the federal government to

partner with industry (UNESCO, 2015) to chart the path for a coherent national educational policy for skill development to meet the skill needs of the labour market is a significant affront to efforts to address the challenges confronting TVET.

Unlike academic education, others have also highlighted the challenge of higher academic transition pathways for students undertaking TVET courses as a significant hindrance (Álvarez-Galván et al., 2015; Cournoyer & Deschenaux, 2017). For instance, Álvarez-Galván et al. (2015) report that the limitedness of opportunities for graduate apprentices to pursue higher professional trades contributes to the lack of disincentive of students for TVET. Cournoyer and Deschenaux (2017) assert that the unavailability of opportunities for the pursuit of higher education for graduates from apprenticeship programs contributes to the long-held “aura of unfavourable prejudice” that has affected the TVET sector.

These findings are consistent with Winch’s (2013) observation that historical factors played a considerable role in the unpleasant situation in which TVET finds itself. However, A, Taylor (2016) believes that the allocation of more resources in the provision of technical and vocational education will gradually reduce and eventually erode the status differential between the academic and the vocational pathway. Unlike other countries, evidence from the reviewed literature and government documents (provincially and federally) highlights the commitment of governments in addressing the challenges facing the TVET sector by providing enough financial support.

State of TVET Funding and Support in Canada

As observed from the global literature, funding and state support remain a significant setback affecting the development of a productive TVET sector that is responsive to the local demands in providing the requisite skills need full the full

participation of individuals in the labour market. In Canada, evidence from some studies have suggested that financial constraints play a major role in confronting student accessing and progressing through their apprenticeship programs. According to Frank et al. (2017), a majority of apprentices (65.5%) who indicated facing difficulties progressing through their apprenticeship programs identified financial constraints as the most common reason. Although there existed federal government support initiatives such as apprenticeship initiatives and completion grants, Frank et al. observed that about 60% of the apprentices were unaware of such support mechanisms during their programs.

Others have noted the declining role of state funding to PSE in Canada and its effect on students and postsecondary institutions, including colleges and trades schools (Holmes, 2017; MacKay, 2014; Usher, 2018). For instance, MacKay's (2014) study examining the perspectives of faculty in community colleges found that funding was one of the major challenges confronting the delivery of quality education in the province of Ontario, Canada. The report noted that declining nature of government funding as a percentage of the operating revenues to the Ontario Colleges of Applied Arts and Technology (CAATs) were resulting to an increase in cost-cutting burden within the colleges, declining academic standards, and consequently affected the quality of student experience (MacKay, 2014). According to MacKay, the state of government funding has resulted in tuition fees Ontario outpacing inflation by 435% in the past 20 years, leading to rising student debts and constraining access for students from low income family backgrounds. Holmes (2017) also suggests that the lack of dedicated federal and provincial funding to support the research and innovation potentials is another major setback for colleges in Ontario.

Contrary to the claims of low governmental funding to TVET, the evidence obtained from the reviewed academic literature and governmental document sources suggest that the TVET system in Canada, over the years, has received significant provincial and federal support. Fisher (2006) provided a historical overview of the impact of federal government support and involvement to TVET at the provincial level. According to Fisher, the role of the federal government support to TVET at a provincial level has had a tremendous impact than other interventions. Federal government initiatives such as the grand design that led to the adoption of the Manpower policy and the subsequent adoption of the Labour Force Development strategy and the Labour Force Development Board were a few initiatives adopted to strengthen the technical and vocational system by the federal government (Fisher, 2006).

In recent years, the reviewed literature shows the role of the federal government in supporting TVET programs through various forms (Frank et al., 2017; Government of Canada, 2018). For instance, Frank et al. (2017) argued that at the federal level, Canada provides significant investment and financial support in the form of grants, loans, tax credits, and employment insurance. These have boosted apprenticeship through the Red Seal program. The Government of Canada (2018) indicated its commitment towards reducing the barriers faced by students from marginalized backgrounds in accessing and participating in TVET to attain the SDG. Thus, according to the Government of Canada (2018), “Canada will address barriers and gaps that prevent marginalized groups, particularly girls, adolescent girls, and women from accessing and completing quality education and skills development programs” (p. 44).

Fisher (2006) argues that despite the changing roles of the federal government of Canada and ever-evolving labour market dynamics and demographic factors, there has

been provincial and territorial government interest in human capital development in the country. Therefore, evidence from the reviewed literature and government documents have indicated some innovative initiatives adopted by provincial governments to boost education and increase the skill sets in Canada. An example of such initiatives includes the Career Ready Fund in Ontario which seeks to assist postsecondary institutions in offering more career-oriented experiential learning experiences for students (Government of Canada, 2018). Additionally, to tackle the skill shortages and boost the skilled workforce of the province, the Government of Ontario (2019) announced a \$20.8 million stimulus funding package to attract more people in trades and an additional \$2.5 million in 2019 to improve the attractiveness of apprenticeship education in the province through the Ontario Pre-Apprenticeship Training program.

Similarly, the Skill for Jobs Blueprint is a collaborative initiative adopted by the Government of British Columbia to help develop apprenticeships and skills training in high demand occupations (Government of Canada, 2018). These measures from the national and provincial governments show a decisive political will to develop an effective and efficient TVET in the country. However, given the political and economic history of the country, investment in areas of TVET will require more than just public funding. The big problem, as observed by A. Taylor (2016), is the bad public imagery for students who attend college or trade schools. This implies that any investment in designing public policies must be accompanied by deliberate public education measures that will sensitize parents, students, and the public on the potential benefits of TVET.

Chapter Conclusion

In this chapter, I presented a brief overview of the Canadian education system with specific emphasis on the TVET sector. I also provided the trend lines of

participation in PSE by looking at data from 1992 till 2015. I further presented how existing literature and government documents have explored access and participation in TVET in Canada. The literature review also revealed that negative perception within the Canadian context was a significant setback affecting the development of an effective TVET system in Canada. Interestingly, a review of some governmental documents showed that both provincial and federal governments took deliberate policy and financial measures to ensure that its youths were equipped with the needed skills for their active participation in the job market.

CHAPTER FIVE: DISCUSSION AND CONCLUSIONS

Considered as the boldest universal and transformational policy agenda, the Sustainable Development Goals (SDGs), also known as the Global Goals adopted in 2015 by United Nations member states, marked an important milestone towards addressing global 21st-century challenges. For the first time at the global level, technical and vocational education and training (TVET) occupied a central component of the SDGs with a direct influence on four of the 17 development goals, specifically, Goals 4, 5, 8, and 13 (Rosa, 2017b). The consideration of TVET as part of the SDGs measures for Agenda 2030 is in recognition of its immense potential role in providing youths with the requisite skills required for active participation in the labour market, creating a socially just society and sustaining the environment.

Although the role of TVET in addressing the skill shortages and a mismatch has never been questioned, public discourse and perceptions, characterized the sector affecting its attractiveness among students, parents and the general public and thereby contributing to its current poor state of TVET. In this MRP, I explore the renaissance of TVET as part of global measures towards achieving the SDGs by 2030. Thus, two main underlying objectives characterized this MRP:

1. To ascertain the rationales shaping the resurgence of TVET in recent times.
2. To determine the state of TVET globally and in Canada with critical emphasis on examining the trend lines of participation for students from historically disadvantaged backgrounds.

Based on the extensive systematic review of extant academic, peer-reviewed and grey literature contained in the MRP, this chapter summarizes and discusses the major

findings related to access to and participation in TVET for students from disadvantaged backgrounds. I also provide some policy recommendations to address the challenges confronting TVET (college and apprenticeship education) in Canada. Finally, given the limitations of this research study, I suggest some important areas that require further research study.

Summary of Findings and Discussion

Findings of this study can be categorized according to three major themes: (a) the resurgence of TVET; (b) TVET versus university education (trend lines of participation); (c) access and participation for students from sociodemographic groups; and (d) concern of TVET attractiveness and funding.

The Resurgence of TVET

Marope et al. (2015) state that “technical and vocational education and training (TVET) is steadily emerging as a winner in the ‘race to the top’ of global debates and government priorities for education and national development agendas” (p. 11) after years of neglect, poor governmental funding, and negative public perceptions. The field of TVET was once high on the educational agenda and mandate of some key intergovernmental organizations such as the World Bank and UNESCO and countries in Europe and North America. TVET appeared to lose its relevancy in the 1960s and 1970s and subsequently was considered a “second fiddle” to the more “traditional” academic-oriented education. However, with the recent consideration of TVET as a strategic and operational priority at the global, regional, national, and local levels, it was important to ascertain the contributive factors associated with the sudden emphasis on TVET.

One of the key findings of the systematic literature review with grey literature is that the renewed interest in TVET can be attributed to its role in propelling economic

growth; reducing unemployment, poverty, and the inequality gap; and sustaining the environment. Specifically, economic, social justice, and sustainable reasons were identified as the driving forces behind the resurgence of TVET in Canada and globally (Marope et al., 2015; A. Taylor, 2016; Tikly, 2013). Although all these three reasons accounting for the resurgence and prioritization of TVET remain important, there seems to be a high emphasis and attention on the economic potential of TVET at the expense of social justice or equity and sustainability.

The growing complexities and uncertainties in the development paradigm globally resulting from the technological advancements, migration and demographic change, climate change, and changes in economic trends have been offered as explanations for need to reconsider the place of TVET in the 21st-century economy. It was observed from the literature review that the rationale for the revitalization of TVET is associated with its role in shaping the skill sets of the youth and enabling them to actively participate in the labor market. Skills development is critical in reducing youth unemployment, societal inequities, and poverty while safeguarding the future.

In Canada, the government's review of Canada's Implementation of the 2030 Agenda for Sustainable development placed more emphasis on the economic benefits of TVET as a major driving force behind the measures adopted to create an effective TVET system. According to the Government of Canada (2018), the centrality of enabling Canadians to secure decent employment and wages is one of the major reasons for adopting measures to strengthen the sector. This motivation feeds into the narratives of the economic utility of TVET dictating the pace of global policy towards addressing the unending challenges of poverty, unemployment, and societal inequality.

Even though developing “technical” skills is important, it was observed that most of the discussions of the role of TVET from the reviewed literature centred primarily on the technical skills with little to no mention of the role of TVET in shaping the 21st century skills or transferable skills of students. Therefore, it is worth mentioning that the prioritization of the technical skills component of TVET only satisfies one component of the skill concerns of most employers and business owners in Canada and globally. Apart from developing the technical skills required to effectively perform a function, most employers are concerned about the lack of 21st-century transferable skills among the youths (Miner, 2014). As noted by Perry (2016), 68% of Canadian employers in a recent survey indicate finding it difficult to recruit the right staff and thus cited reasons such as interpersonal, problem-solving, and technical skills as the major reasons. This implies that even though the preoccupations of policymakers ought to focus on cultivating the technical abilities of the youths to function in all aspects of the economy, it is important that policy measures relating to TVET are implemented to assist students to build the 21st-century skills.

TVET has been identified as a vital educational tool in redistributing material and tangible wealth among individuals from diverse backgrounds. As a result, although these reasons are sound, it is important for countries globally to respond to developing the TVET sector by focusing on the full realization of its potential to a diverse group of people in society. In most of the reviewed literature, it was observed that the historical segmentation of intergovernmental organizations’ priorities for TVET was a major setback for its development (Tikly, 2013). That is, the lack of coherent projection of the benefits of TVET, as highlighted by the World Bank which focused on providing TVET

support because of its economic value and UNESCO concentrating on its sustainability prospects (Tikly, 2013) contributed to a sector in which individuals failed to recognize its full potential. Thus, the prioritization and projection of the social justice, economic, and sustainability potential of TVET are critical in helping shape and address the status problem that has historically contributed to the low prestige and unattractiveness of TVET to prospective students and parents.

Despite the relevance of TVET in contributing to the human capital development, reducing societal inequalities, unemployment, and poverty while sustaining the environment for future prosperity, the findings from my systematic literature review revealed important issues that required governmental and policy attention at the global and Canadian context. For instance, whereas the global trend lines of participation in education are generally on the rise, it was observed that the rate of participation in TVET from the global and Canadian context was unimpressive.

TVET vs. University Education: Trend Lines of Participation

The Higher Education Strategy Associates compared college and university data from 1992/1993 academic year to 2015/2016 academic year, years in which enrollments in college education proportionally outperformed university education from 1992/1993 to the 2000/2001 academic year (Usher, 2018). Contrary to the overall growth of the PSE sector in 2002 resulting from the enrollments of the double cohort high school students, this trend reversed at the start of the century, especially from the 2002/2003 academic year with enrollment in university education increasing more than a college education (Usher, 2018). Although the HESA did not provide explanations for the seeming reversal of the enrollment trends, likely, the heightened perceptions of college

education among millennials as educational pathways for less academically oriented students might have contributed to the declining interest in college education. Other factors such as the lack of proper career counselling and the recent trends of colleges offering “university-like” programs or field of studies could contribute to the seeming attractiveness of university education at the expense of traditional, vocationally oriented college education.

Access and Participation for Students from Sociodemographic Groups

A critical analysis of PSE enrollment trends globally and in Canada showed that the level of access to and participation in TVET for students from historically disadvantaged backgrounds (gender, ethnicity and race, SES, locality, and students with disabilities) differed in most aspects. Specifically, the reviewed literature showed different levels of access and participation for students from historically marginalized populations. Thus, whereas results from the study showed that some groups of students from these historically marginalized groups considered in this study had higher chances of participating in TVET than others, the reviewed literature suggested some profound historical, institutional, systemic, and societal factors that accounted for this phenomenon.

Apart from Indigenous and low SES students who were found to be more likely to participate in TVET, the findings showed relatively low enrollment rates among students from other sociodemographic groups (i.e., gender, racialized and ethnic minority, disabilities, and ruralized). Although the high participation and acceptance of TVET among students from Indigenous and low SES backgrounds depict a positive sign worth celebrating, it is important for state leaders and policymakers to pay peculiar attention to

the motivations and inclinations of these students from Indigenous and low SES backgrounds towards TVET. It was insightful to note that despite the historical streaming of students from racialized and ethnic minority groups (except for Indigenous students), racialized and ethnic minority students were less likely than non-racialized students to enroll in TVET programs.

Notably, the reviewed literature from the global and Canadian context revealed that Indigenous students were more likely to participate in TVET programs than non-Indigenous students and other racialized students. Although the high participation of Indigenous students might be seen as a major step towards bridging the access and participation gap between Indigenous and non-Indigenous students, policy makers must examine the reasons accounting for such phenomena. From the literature review, it was observed that the low entry requirements and funding were the reasons accounting for the high participation rates of Indigenous students (Ackehurst et al., 2017; Gordon & White, 2014; Windley, 2017).

Some might argue that these are positive – allows for greater participation rates, success and post-education employment, however, such reasons only feed into the historical narrative that TVET is a pathway for less-academically oriented students. Hence, contributing significantly to its unattractiveness among students from non-Indigenous and high SES backgrounds. This approach feeds into the historical, religious, institutional and cultural narratives of TVET been considered a second-fiddle barrier to traditional or academic education (A. Taylor, 2016; Winch, 2013) that has characterized the sector, making it unattractive to prospective students. TVET should be treated as a significant academic pathway that provides career opportunities for students.

Therefore, for TVET to be regarded and thus taken seriously among parents and students, measures need to be adopted to denounce the notion that TVET is the easiest educational pathway for indigenous students (Hodgkins, 2017). The motives of students participating in TVET must be critically considered when discussing the successes of national policies and their impact on widening access and participation in TVET for students from sociodemographic backgrounds. Also, any efforts and policy framework intended to increase enrollments of students in TVET adopted by the provincial government need to be mindful of the reasons why more Indigenous than non-Indigenous students are likely to access and participate in TVET-oriented programs.

Interestingly, when examining gender participation in TVET, it was observed that women and girls were less likely to enroll in TVET courses and pathways globally and Canada. Despite the female dominance of PSE in Canada (54%), access and participation of female students in TVET programs and courses were generally unimpressive. Notably, the evidence deduced from the literature review suggested that women were less likely to enroll in STEM-oriented and the so-called “masculine” TVET related fields of studies.

This pervasiveness of gender roles and participation in TVET is, therefore, a major affront to the global and national efforts towards achieving the global goals and, most importantly, creating an equitable working environment and society men and women alike. However, the review of grey documents shows the Government of Canada’s commitment to bridging the gender participation gap in TVET within the country. For example, the Government of Canada (2018), in its review of its implementation of the Agenda 2030 SDGs, commented that “Canada supports women and girls to ensure they develop their skills, accede to decision-making positions and

fully participate in and benefit from their communities' economic growth, including support for technical and vocational training and entrepreneurship" (p. 68). To justify the government's position, measures such as the Apprenticeship Incentive Grants for Women, the Women in Construction Fund, the CanCode and PromoScience programs were examples of deliberate policy measures to attract women into TVET (Government of Canada, 2018).

Although these initiatives are commendable and mark a starting point, little specificity was given about practical steps and measures to ensure that women and girls developed a critical awareness of the reasons why they should capitalize on such initiatives. Thus, despite these policies and the benefits women stand to gain from opting for technical and vocational courses instead of academic programs, the underlying perceptions among students and parents might impede the success of these policies.

The concern of TVET Attractiveness and Funding

Although TVET prominently features on the top policy agenda of governments at the global and state level, I observed from the review of extant literature that TVET remains an unattractive postsecondary pathway for students, parents, and the general public both at the global and Canadian level. An examination of the deeply held perception of TVET among students, parents, and the general public revealed that historical, cultural, religious, institutional, and systemic factors have contributed to the negative perception of TVET globally and in Canada. For instance, in Canada, the findings showed that historical factors such as the inheritance of the British educational system which prioritized academic education over vocational education, the use of immigrants for labour works among others, and the streaming of Black, Indigenous, and

students of colour have variously contributed to the public acceptance of TVET as an education path for second-class citizens.

Marope et al. (2015) argue that the disconnect between the prioritization of TVET among policymakers and leaders and students and parents is disingenuous to the efforts to utilize the TVET's potential in supporting the developmental agendas of states. Therefore, any measure by state leaders and policymakers to optimize public acceptance of TVET should be targeted at the formative years of a child's life. Although, measures such as the pre-technical and pre-vocational programs in some countries reviewed in this study have proven not to be successful (African Union, 2007), a rethink of the whole curriculum and its practicality will be beneficial in drawing the interest of students and parents in taking up TVET-oriented courses in Canada.

Another major concern that was observed from the literature review globally and in Canada was the issue of funding. The reviewed literature showed that the inadequate funding of TVET globally significantly contributed to the public outlook of the sector. However, unlike other countries globally, the review of governmental documents in Canada, showed that both the provincial and federal government of Canada have adopted measures towards addressing the poor status of TVET. For instance, measures such as \$2.5 million funding towards the Ontario Pre-Apprenticeship Training program and a \$20.8 million funding package to attract more youth in the skill trades (Government of Ontario, 2019) were some of the initiatives adopted to incentivize students.

These measures from the national and provincial level in Canada shows a decisive political will to develop an effective and efficient TVET in the country. However, given the political and economic history of the country, investment in areas of TVET will

require more than just public funding. The big problem, as observed by A. Taylor (2016), is the bad public image of students who attend college or trade schools. This implies that any investment in designing public policies must be accompanied by deliberate public education measures that will sensitize parents, students, and the public on the potential benefits of TVET.

Recommendations

Despite the importance attached to TVET and its role in creating an equitable society, creating jobs, and preparing youths for active participation in economic and social activities in Canada and globally, the findings from this study showed that although the participation in PSE has seen some substantial improvement in Canada, TVET continues to play the second-fiddle to mainstream academic education for prospective students. The lack of proper appreciation and realization of the full potential of TVET in developing the skills sets of students for the effective integration into the 21st-century labour market presents a disturbing situation—an affront to the need to build and maintain highly skilled and technical manpower for individual and societal growth and development.

Given this premise, the recommendations offered in this study are designed to assist governments to understand the real issues and where to target policy when considering encouraging participation in TVET each of Canada's provinces. These recommendations are based on the systematic literature review and some of the best practices from the global literature. However, given the historical impact of educational streaming and residential schooling, these recommendations are tailored to overcome the negative perceptions held by students, parents, teachers and the public about TVET.

Interprovincial Recognition of the Non-Red Seal Program

The dichotomy of recognition between the Red Seal and non-Red Seal apprenticeships/trades needs to be reviewed to promote equity for students. Similarly, to the Red Seal apprenticeship programs, an interprovincial standard should be established to ensure that students who enroll in the non-Red Seal programs can develop skills and competencies demanded to effectively discharge their roles across all of Canada's provinces and territories.

Awareness Creation

Encourage and improve public education about the role and benefits of TVET to equipping the youths with the requisite skills for their effective participation in the labour market. Policy on sensitizing the public about TVET should not discount the historical damage of educational streaming to the public imagery of TVET. Additionally, there should be a conscious provision of adequate training for teachers and school counsellors at high schools and even elementary schools.

Improved Private Public Collaborations on TVET

There should be an improved public–private collaboration between government and industry in shaping the educational content in schools. Several policy documents and research outcomes have highlighted the immense role of partnership in the fulfillment of all the 17 SDGs. This is also particularly important for TVET especially in Canada in educating and building public capacity towards appreciating the true value of TVET.

Areas for Further Research

Based on the limitation of the research, I recommend the following research areas for further examination:

- What are the experiences of students from disadvantaged in participating in TVET courses in Canada? What are their perceptions of the skills and career prospects and transition into higher education pathways? That is, how easy is the transitioning from a lower-level apprenticeship or college pathway to higher-level university (the transition from lower-level to higher-level qualifications in the VET sector)?
- From the study, it seemed more attention on access to and participation in TVET was towards the development of the core or technical skills with few studies examining the role of TVET in providing individuals with the “soft” transferable skills which are demanded by most companies in the 21st-century labour market. Given this background, I recommend future research studies to explore the role of TVET in providing students with 21st-century skills.
- As an international student, I would like to see further research examining the experiences of an international, newcomer, or immigrant students in TVET in Canada. What has been the outcome of their participation in college or trade schools?
- What are the governmental measures instituted to make TVET more appealing to students in Canada? Are there any deliberate policy initiatives adopted provincially to ensure an inclusive and equitable TVET provision in Canada’s provinces and Territories? What are affirmative policy measures in place by the government to ensure that access and participation in TVET in Canada are made accessible for students from disadvantaged family backgrounds?

- How does geographical location impact the various aspects of participation in technical and vocational education and training in Canada, given that the different provinces are uniquely defined by occupational trajectories? For instance, Ontario is defined by its technological hub while Alberta is known for its agricultural and oil contributions, among others.

Conclusion

Occupying the heart of four of the SDGs, TVET has for the first time attracted the attention of global leaders, employers, and other relevant educational stakeholders. The unequivocal contribution of TVET towards establishing a robust global economy while creating a socially just society and preserving the environment for future prosperity has underlined its resurgence. This MRP adopted the systematic literature review with a grey literature methodology to examine the reasons accounting for the resurgence of TVET and to determine how students from historically marginalized populations accessed and participated in TVET globally with specific emphasis on the Canadian context.

The findings of this systematic literature review of academic, peer-reviewed, and grey literature sources were intended to help develop an appreciation of current issues and concerns and to draw the attention of policymakers and researchers towards such issues. The outcome of the study suggested that economic, social justice, and sustainability factors were driving the recent prominence of TVET globally and in Canada. Among these three factors, economic reasons were found to be the key influential factor characterizing the global demand for an effective TVET system.

Despite the prominence of TVET to the economic growth and sustainability, the general observation from the literature reviewed showed high access and participation of

students in general or academic (university) education than TVET-oriented fields of studies and pathways globally and in Canada. The findings showed that the historical, cultural, institutional, funding, and systemic factors still challenge the attractiveness of TVET students and their parents. Consequently, the lingering perception of TVET as an attractive educational “dumping ground” for “second-class” students is still apparent, affecting the trend of participation of students in skill trades or apprenticeship education. Unlike Indigenous students and students from low socioeconomic backgrounds, all the examined historically marginalized students in this MRP were less likely to participate in TVET education because of similar reasons rooted in history and the structure of modern society.

One key limitation of this MRP pertains to the limited availability of peer-reviewed primary studies. Although the peer-reviewed literature was complemented with grey literature from governmental and other reliable sources, the findings of this MRP do not reflect all the critical underlying factors associated with access to and participation in TVET for students, especially those from historically marginalized backgrounds. The insufficiency of data suggests that there may be other vital background issues that have not been captured in this study.

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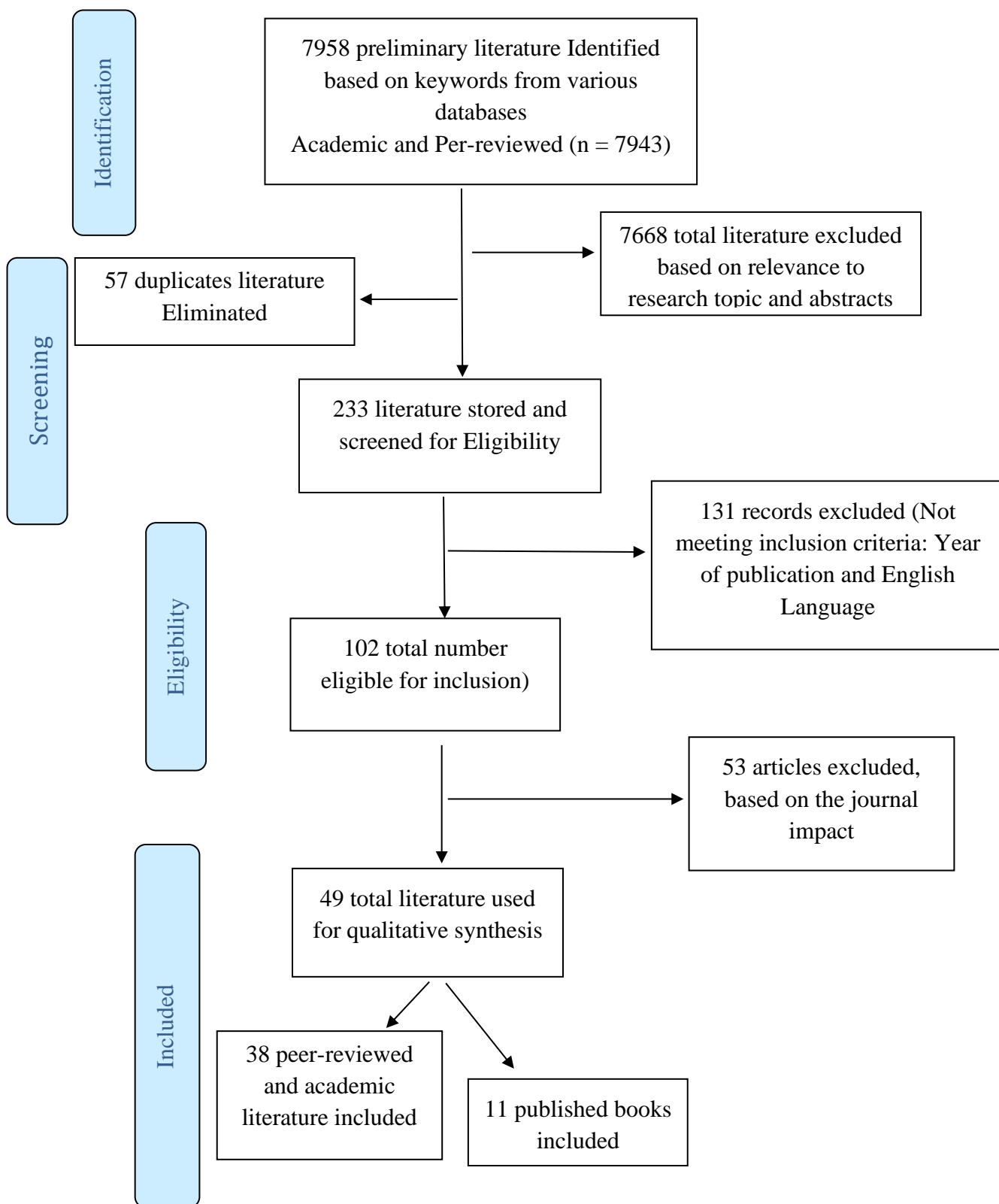
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Appendix A

Literature Identification and Screening Process



Appendix B

Grey literature Identification and Screening Process

