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A mixed methods investigation exploring the influence of cognitive flexibility and gender stereotyping beliefs on the career aspirations of late adolescent students.

Bonnie L. McGlynn

A dissertation submitted to the University of Bristol in accordance with the requirements for award of the degree of Doctor of Education in the faculty of Social Science and Law.

School of Education

February 2023

Word Count: 44,714

Abstract

Providing protective factors to not only support but limit negative influences is critical in this ever-changing world as students aspire to their future careers. The aim of this study is to expand our understanding of the career aspirations of late adolescents by exploring two cognitive processes: gender stereotyping beliefs and cognitive flexibility. The study used a mixed methods design to investigate 371 late adolescent students, in Bermuda, between the ages of 16 and 18 years. Surveys were used to examine the role cognitive flexibility and gender stereotyping beliefs play in students' career aspirations. From a subset of the larger sample, semi-structured interviews (n = 18) provided a context for the experiences and perceptions of the students as they consider this critical juncture in their lives. The quantitative results revealed that higher cognitive flexibility is related to higher career aspirations. Further, participants who held more traditional male stereotyping beliefs are more likely to have higher career aspirations. In addition, a multiple regression analysis established that subscales of cognitive flexibility and a traditional male stereotype role could predict career aspirations. The qualitative interviews revealed a more complex understanding of how gender stereotyping beliefs and cognitive flexibility can influence career aspirations. The five themes to emerge were: *flexibility and future success, awareness and influence of occupational stereotypes, internalised stereotypes, limiting beliefs and influence of others*. These results offer an insight into the significant and unique, positive contribution cognitive flexibility plays on a student's career aspirations as well as the nuanced but powerful role gender stereotyping beliefs still play on students' career aspirations. These findings offer protective factors educators and career counsellors can immediately consider when supporting students.

Key words: career aspirations, mixed methods design, gender stereotyping beliefs, cognitive flexibility, masculine stereotype, feminine stereotype, late adolescents.

Dedication and Acknowledgements

I would like to acknowledge the many people who have supported me on this journey. This research could not have taken place without the support of Donna Daniels, Dr. Radell Tankard and Kalmar Richards, who opened the doors for this to happen. Thanks, as well to the School Principals, administrative staff and teachers, from both the public and private schools, who gave so generously of their time managing or administering both the consent forms and the surveys. A very special thanks to all those students who participated in this research, having the opportunity to meet you filled me with hope for the future.

I would also like to give a very special thanks to Dr. Ioanna Bakopoulou, who was there from the beginning, and who never gave up on me. Thanks also to Dr Philippa Howard, Dr. Felicity Sedgewick and Tamas Novak, for all of your support, it has been very much appreciated.

To my Bristol support team, Cathy, Rachel, and Sam, I am truly grateful for your friendship. To my Sunrise Club, Rachel, Gretta, Lorraine and Kate thanks for always being so positive and supportive. Lastly, a very special thanks to Louise and Stephen for putting a roof over my head, feeding me and just “being there”!

This thesis is dedicated to my dad and my mom, who always believed and supported me and to whom I am grateful. It is also dedicated to Kim who has paved the way for me to have the time and the energy to get this thesis finished. Your love and encouragement have meant everything.

Author's Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's *Regulations and Code of Practice for Research Degree Programmes* and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with, or with the assistance of, others, is indicated as such. Any views expressed in the dissertation are those of the author.

SIGNED:Bonnie L. McGlynn..... DATE: ...February 9, 2023

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List of Abbreviations

ADHD	Attention Deficit Hyperactivity Disorder
BSRI	Bem Sex Role Inventory
CAS	Career Aspirations Survey
CAS-R	Career Aspirations Survey – Revised
CFI	Cognitive Flexibility Inventory
CFS	Cognitive Flexibility Survey
MDD	Major Depressive Disorder
COVID-19	Coronavirus disease of 2019
DCCS	Dimensional Change Card Sort
EU	European Union
GRSS	Gender Role Stereotypes Survey
GST	Gender Schema Theory
MCS	Millennium Cohort Study
RQ	Research Question
SCCT	Social Cognitive Career Theory
SCWT	Stroop Color and Word Test
STEM	Science, Technology, Engineering, Mathematics
TCC	Theory of Circumscription and Compromise
UK	United Kingdom
UN	United Nations
USA	United States of America
WCST	Wisconsin Card Sorting Test

Chapter One: Introduction

1.1 Overview of the Chapter

This chapter introduces the thesis and provides a background and rationale for the study. The aim and significance of this study are then discussed, and the research goal and objectives are explained. A subsequent outline for the remainder of the thesis is provided.

1.2 Background of the study

This study is focused on adolescent career aspirations and exploring the potential influence of two cognitive factors: gender stereotyping beliefs and cognitive flexibility. Career aspirations are broadly defined and are inclusive of leadership, achievement and educational aspirations (Gregor & O'Brien, 2016) which are critical for the late adolescent student (Graham & Pozuelo, 2022; Lekfuangfu & Odermatt, 2022). Career aspirations have been shown to be an influential predictor of educational attainment (Beal & Crocket, 2010; Gorard et al., 2012;) and are a significant contributor towards increased university applications (Cochran et al., 2011; Khattab, 2015). Further, the influence of career aspirations extends beyond an educational setting to promoting positive career outcomes (Gao & Eccles, 2020), predicting career attainment (Schoon & Poleck, 2011), higher socioeconomic status (SES) in adulthood (Ashby & Schoon, 2010) and increased well-being in adolescents (Davids et al., 2017; Dudovitz et al., 2017). However, for the late adolescent student, aspirations have been shown to decrease over time (Gao & Eccles, 2020) with long term effects from uncertain educational aspirations in 16-year-old students showing negative future educational outcomes, including increased unemployment and decreased wages (Gutman & Schoon, 2012).

As this study is undertaken from the perspective of an educational practitioner, it is important to establish the key role education plays in shaping and widening aspirations. Education has long been associated with improving a person's social and economic prospects and subsequently buffering them against future economic downturns (Daly et al., 2020; OECD, 2021). In addition, the link between education and earnings has been established in both theory and practice with particular benefits seen for women (Psacharopoulos & Patrinos, 2018). In contrast, lower educational and career aspirations are a significant impediment to educational attainment and social mobility for both men and women (Siraj-Blatchford, 2014).

Therefore, education is key in helping to mitigate against factors which may reduce or limit a late adolescent's aspirations, such as being female (Barrett, 2021; Schoon & Polek, 2011; Watts et al., 2015), a person's race or ethnicity (Gottlieb, 2015; Seo et al., 2019), teacher expectations (Turner et al. 2015) and parents with higher educational attainment (Cochran et al., 2011). In addition, SES can directly impact a student's educational experience and negatively affect school performance (OECD, 2018). To highlight the point, factors such as race, gender and SES have been identified as key predictors for science, technology, engineering and math (STEM) related careers (Mau & Li 2018). While SES and parental expectations have been found to negatively influence career aspirations (Al-Bahrani et al., 2020).

Considering the many negative factors mentioned above, especially those factors which educators or students have little control over such as gender, race and SES, this study seeks to explore two cognitive factors which may be controlled or moderated: gender stereotyping beliefs (Charlesworth & Banaji, 2022) and cognitive flexibility (Shukla et al., 2020). The first, gender stereotyping beliefs, defined as a person's views and attitudes toward their own stereotyping biases (Mills et al., 2012), examines how stereotyping beliefs have been internalised and seeks to

explore how a person's belief system may influence (or predict) their career aspirations (Mills et al., 2012). The second, cognitive flexibility, defined as the ability to overcome and adapt to new and challenging circumstances (Dennis & Vander Wal, 2010), is largely under researched within the career aspirations literature. However, it should be noted that the concept of flexibility is increasingly being embraced within the career construction theory (Kirikkanat, 2022; Savickas, 2002). This theory of career development sees researchers exploring two key constructs, career adaptability and adaptivity (Hirschi et al., 2015; Savickas & Porfeli, 2012). Cognitive flexibility is a compelling factor when considering its relationship to career aspirations, as recent literature has shown it to be a predictor for increased positive career attitudes in university students (Yildiz-Akyol & Boyaci, 2020).

As discussed above, an exploration of gender stereotyping beliefs and cognitive flexibility has significant value to school practitioners because both of these factors may be changeable (Charlesworth & Banaji, 2022; Shukla et al., 2020) and therefore possible to improve through education. Few studies are able to take a theoretical exploration of constructs and so readily achieve practical classroom application. It is hoped that this study will provide educational practitioners and policy makers with insight into how modeling more gender neutral and more flexible behaviors can have a direct, positive influence on students' aspirations potentially with long-term positive outcomes.

1.3 Research Context

This study seeks to broaden the way we view late adolescent career aspirations and expand our understanding by considering how gender stereotyping beliefs and cognitive flexibility, both under researched concepts within this context, influence career aspirations.

However, while this is an under researched area, it is even more novel within the context of this study's setting, the islands of Bermuda.

As such, the rationale for this research is multilayered and operates from three levels: a global context, the Bermuda context and my personal perspective as an educational practitioner. Each level represents the positioning from which the study is considered and will be addressed in detail in the sections below.

1.3.1 Global Context

In order to position this study within a global context, one must first begin to understand the population on which this study focuses, the late adolescent, known as Generation Z or Gen Z (born after 1996). However, this study's focus is on the more recent births between 2001 to 2003, considered the late adolescent because they were 16-to 18-years old at the time of data collection. Adolescence is considered to be a unique period in human development and critical to laying down the foundations for good health (World Health Organisation, 2021). As the Gen Z adolescent aspires to his or her future, it is one which has been irrevocably altered due to the Covid-19 pandemic (Parker & Igielnik, 2020; Prince's Trust, 2021). In fact, the late adolescent faces more of an uncertain future than any time in recent history, with current literature classifying the pandemic as a career shock (Akkermans et al., 2020), defined as a "disruptive and extraordinary event" (Akkermans et al., 2018:4). The implication for students is having to confront a situation outside of their control and then considering or reconsidering their career (Akkermans et al., 2020). As a result, the ramifications on Gen Z's career aspirations are just beginning to be acknowledged and studied. However, what is known so far of this group is that Gen Z's career aspirations are influenced by four different factors – intrinsic (attitudes,

relationships, etc.) and extrinsic drivers (environment, family, etc.), career expectations and perceived career development (Barhate & Dirani, 2021).

Critically, these late adolescent students will be entering a workforce with many obstacles, which will no doubt impact on their career aspirations. Aside from the implications of Covid-19, the progress of women's participation in the workforce has yet to come close to gender parity (World Economic Forum, 2022). Unfair pay practices continue to be the norm with women's average pay being generally less than men's, in all countries, inclusive of all age ranges and for all levels of education (UN Women, 2020). In addition, mental health for this generation has become a global concern. Recent reports attribute 16% of people aged 10- to 19-years old as having a mental health condition (World Health Organisation, 2021). Encouragingly, having intrinsic goals and career aspirations has been found to be a predictor for adolescent psychological well-being (Davids et al., 2017). Further, Dudovitz, et al. (2017) found that simply asking a late adolescent, "What do you want to be when you grow up?" (p.153) can provide insight into their level of hopelessness and self-efficacy.

Therefore, what should be clear from the above is that when trying to understand adolescent aspirations, only considering gender as a factor associated with career aspirations is not enough, on the grounds that gender representation has not achieved gender equality, social mobility, economic growth and wellbeing. A more nuanced exploration of the role gender stereotyping beliefs and its association with career aspirations is needed.

Moreover, this research also aims to examine cognitive flexibility, a factor which has the potential to be a protective factor against negative stereotypes (Ginevra & Nota, 2017; Zuo et al., 2019) and to support coping skills and well-being (Demiritas, 2020; Dennis & Vander Wal,

2010; Stange et al., 2017), yet it is under-researched in this context and the relationship is unclear.

1.3.2 Bermuda Context

Bermuda is very much a microcosm of the global context (Hayward et al., 1982). It is a small, remote island, with international business contributing the greatest amount to the local economy (National Economic Report of Bermuda, 2022). Bermuda is routinely ranked as one of the world's most expensive places to live (Numbeo, 2022, 2023), with a highly competitive and skilled workforce within its two main industries: international business and tourism. As a result, Bermuda requires an educated and skilled workforce to sustain itself, to not only survive but to remain competitive and thrive.

However, traditionally, Bermuda has not been able to fill many of the professional jobs needed to meet the demands of the international business sector, which are frequently the most sought-after jobs and command the highest median wages (Employment Brief, 2021). Consequently, an imbalance exists between the local Bermudian population employed in this sector and overseas workers recruited to meet these additional needs. To compound matters, Bermuda has not been exempted from the effects of the global pandemic, with reports from local Bermudians confirming that the pandemic has affected the economic well-being of a large share of households (CARICOM Covid-19 stats, 2020).

Education and career guidance can play a key role in meeting the imbalance within the Bermudian context (Clay, 2012). However, there has been only limited research on the experience of career development (deShield, 2014), and none, to this researcher's knowledge, on career aspirations. In addition, as a result of a decreasing population and a perceived "divide between public and private education" (Douglas, 2012:5), there is a highly competitive

environment for student enrollment and little collaboration within and between the public and private education sectors.

Thus, this research is of particular relevance, as Bermuda struggles to internally meet the wide and varied career demands it faces against a backdrop of global uncertainty and local divisions. As a result of the limited research in education, within the Bermudian context, the research which does exist is typically restricted in its exclusive representation of the public education sector.

1.3.3 Practitioner's Perspective

This study is informed by a professional career of over 30 years of experience and observation of children, adolescents and adults in educational and other settings as they navigate a world where career aspirations are often driven by gendered norms and expectations have affected or influenced decisions. I have observed firsthand how the late adolescent student can lower their aspirations to conform to their environment and the messages of those surroundings, despite the academic potential they possess, and I have been in awe of those students who go far beyond expectations.

In addition, my experience has confirmed for me, unlike what is frequently portrayed in the media both globally and in Bermuda, that young people are highly motivated. They have hopes and dreams for their future, and are willing to work hard, especially if they feel valued and motivated and want to contribute as productive and responsible members of society. However, these beliefs have been reinforced more so, over the last 8 years, when I returned to teaching and working as a university career counsellor. It was one thing to observe from an administrative perspective, but it has been quite another to be teaching and counselling Gen Z, late adolescent students on a day-to-day basis. I now work, firsthand, with students who I observe with

significant intellect, but fail to meet their potential either in university or in their working life, and others who succeed beyond all expectations. Additionally, some of the students, usually female, with seemingly significant potential and proven academic track records, struggle with mental health issues and ultimately achieving the career success they desired and were expected.

It is through these convictions based on my observations and professional practice that I felt compelled to explore the gaps between such positive hopes and dreams for some students whose reality after they graduate, is not always what they envisioned for themselves. As such, it was critical for this research to provide the opportunity for students to speak for themselves and share their experiences and perceptions. As an educator, I saw too frequently, students who were academically very capable but never realised their dreams or their potential. As an educator, I felt the frustration of questioning what could I have done differently to support or encourage students to aspire and succeed with their aspirations. This researcher's hope was to provide educational practitioners, school counsellors and policy makers with a greater understanding of gender stereotyping beliefs and cognitive flexibility, which may influence and support students' career aspirations.

1.4 Aim of the Study and its Significance

The present study aimed to expand our understanding of the career aspirations of late adolescents by exploring two cognitive processes: gender stereotyping beliefs and cognitive flexibility. This study is significant for a number of reasons. Firstly, the study provides a voice for late adolescent students by directly asking for their opinions, beliefs and attitudes. As a result of the mixed method design, this study was able to address the lack of research giving voice to late adolescents, especially this current Gen Z (Barhate & Dirani, 2021). Students were afforded the opportunity to share their experiences and perceptions of career aspirations, gender

stereotyping beliefs and cognitive flexibility. Secondly, as this study relates to gender stereotyping beliefs, gender inequality is taken as a given, allowing the research to explore the potential role of gender stereotyping beliefs versus a more typical focus on gender as it relates to career aspirations. In addition, and to fill a sizeable gap within the literature, the relationship between cognitive flexibility and career aspirations is also explored.

Further, this study hopes to highlight the potentially harmful influences of gender stereotyping beliefs and offer the possible protective influence of cognitive flexibility in supporting the late adolescent students' career aspirations. Carol Dweck's (2009) previous work on growth mindset had already established cognitive flexibility as a protective factor against harmful stereotypes relating to a students' cognitive performance. In addition, this study hopes to provide teachers and school counsellors with a greater understanding of these concepts and how their own opinions, beliefs and actions may influence a student's career aspirations. Moreover, this study hopes to inform educational practitioners on professional development and affect change not only through the frontline practitioners but guide future education policy. Finally, both Bermuda and the current late adolescent Gen Z student are under-researched, especially in the areas of career aspirations, gender stereotyping beliefs and cognitive flexibility. This study will provide practitioners and policy makers in Bermuda and globally with a greater understanding of how to support and encourage this particular group of young people during their critical period of adolescence.

1.5 Research Goal

The goal of this research is to provide a greater understanding of the career aspirations of students in Bermuda at a critical junction in their secondary school experience, and how they may be influenced by two cognitive factors. The study hopes to do this by using a mixed

methods design, which integrates both quantitative and qualitative research (Bryman, 2014), providing the study with both breadth and depth. Further, the mixed methods design is best suited for the purposes of this study, to adequately address the complexity of this study's research aim (Creswell & Plano Clark, 2018).

The objectives are as follows:

1. To explore the relationship between career aspirations, gender stereotyping beliefs and cognitive flexibility of 16- to 18-year-old adolescents living in Bermuda (using standardised surveys).
2. To document the experiences of and perspective on career aspirations, gender stereotyping beliefs and cognitive flexibility of a sample of 16- to 18-year-old adolescents using semi-structured interviews, providing context for the theoretical constructs of the study, and giving practical application for educational practitioners and school counsellors to increase students' career aspirations.
3. To inform education practices for teachers, counsellors and administrators and guide educational policy.

1.6 Organisation of the Thesis

This thesis is organised into eight individual chapters.

Chapter One focuses on the background and rationale of the study. It provides a breakdown of the rationale into a global and local (Bermuda) context and discusses the researcher's perspective as an educational practitioner. The aim and the significance of the study is explained, and the research goal and objectives presented. **Chapter Two** is structured into three main sections. It first provides a description of the research context in Bermuda and then

reviews the relevant literature of the study, including a theoretical grounding of the key concepts (career aspirations, gender stereotyping beliefs and cognitive flexibility) and how they intersect. It concludes with a reporting of main gaps arising from the literature, and the research questions emerging from those gaps.

Chapter Three explains the philosophical worldview which supports this study and then describes the research design, providing a rationale for the use of mixed methods. Key benefits of the design are discussed along with relevant ethical considerations. **Chapter Four** focuses on the use of surveys for the quantitative phase of this study. It discusses the methods and data collection, providing an outline of the three surveys used. Data analysis is explained. **Chapter Five** focuses on the use of semi-structured interviews for the qualitative phase of this study. Methods and data collection are discussed with the development of the interview guide explained. Method of data analysis is reviewed, and the trustworthiness and credibility of the research is discussed.

Chapters Six and Chapter Seven report the data analysis for both the quantitative and qualitative phase of this study. Chapter Six presents the descriptive statistics for the surveys and then reports the results of the correlations and regression analysis from the surveys within the context of the research questions. The exploratory results examining gender are then presented. Chapter Seven reports the qualitative findings from the semi-structured interviews. The demographics of each participant are presented and the results from the thematic analysis are then reported. As with Chapter Six, the data is then analysed within the context of the research questions.

Chapter Eight provides the reader with a summary of the key findings of the study, which reflects both the quantitative results and qualitative findings as they relate to our current

understanding of the literature. In addition, Chapter Eight provides the reader with an understanding of the originality with which this study contributes to our professional knowledge and practice in both the education and counselling fields. Finally, Chapter Nine concludes with the study reflecting on the limitations of the research and the implications to theory, policy and practice. Future research is then discussed and concluding remarks are made.

Chapter Two – Research Context and Literature Review

2.1 Overview of the Chapter

This chapter is divided into three main sections: the research context, the literature review and the main gaps which arise from the literature resulting in the research questions. The research context provides the reader with an understanding of Bermuda, as the educational research context, which positions the research. The second section presents a critical investigation of the existing literature within the parameters of the research aim. The literature review starts with the development of the conceptual frameworks for career aspirations, gender stereotyping beliefs and cognitive flexibility. It then focuses on the current literature available showing how these three variables intersect with each other.

The last section of this chapter then explains the main gaps and limitations of the literature which have arisen as a result of the literature review. Finally, this chapter concludes with the study's three research questions.

2.2 Research Context – Bermuda

“Bermuda is truly a microcosm of the entire planet; finite in size, limited in resources, and containing a complex mixture of races, nationalities, and lifestyles” (Hayward et al., 1982:330). Bermuda's small size, geographical positioning and the complexity of its people create a unique environment for its students. The demands for an educated and talented labor force are significant as Bermuda seeks to diversify in a highly, and increasingly competitive, global economy. As a result, it is imperative that Bermuda strives to cultivate high career aspirations for all its students and prepare them for higher education, whether it be in the form of future vocational/technical or professional careers (Clay, 2012; Mincy et al., 2009). While this conclusion was drawn approximately twenty years ago, these findings are now more relevant

than ever before. An educated and skilled workforce is critical to Bermuda's future (Employment Convening Report, 2019), thus making Bermuda a unique and critical environment for research into adolescent career aspirations development.

2.2.1 Educational Context

Bermuda's present educational context has evolved within a complex historical background of colonialism, slavery, gender inequity and significant school-system restructuring in the 1980s. Up until the 1980s the educational context was based on two key factors: technical education and a public school system aligned to the British education system. Bermuda's technical education, a one hundred- and fifty-year-old tradition, was arguably an exemplary technical education which saw both black and white male students achieve technical education and apprenticeships preparing them for future employment (Coats, 2009; Ebbin, 2018; Tankard, 2018). At the onset of the 1980s the Bermuda public school system was the predominant education setting for school age students, relying on the Secondary School Entrance Examination (SSEE) to select students for various educational pathways. These pathways included a choice of five neighborhood secondary schools, and two elite secondary schools providing college preparation (Christopher, 2015; Outerbridge, 1999). At that time, there were just four private schools, two based on religious instruction and two based along the lines of gender (one, all male and one, all female school).

Critically, during the 1980s, a large-scale school-system restructuring was implemented, which included a shift away from technical education, the desegregation of Bermuda's schools (Christopher, 2015), and a physical restructuring of the public school system (Christopher, Outerbridge, 1999). The intent of these changes was to move more Bermudian students towards an academic focus to encourage and prepare students for higher education and eventually

provide human resources to a growing international business-based economy (Mincy et al., 2009; Clay, 2012). This restructuring led to the closure of all special schools, the formation of five middle schools (following the US system), closure of the five preexisting neighborhood secondary schools, retention of the two elite secondary schools and the creation of one, much larger, additional secondary school. In addition, an expansion of the Bermuda College happened alongside this restructuring, providing Bermuda's youth with alternative higher education options outside of overseas institutions. However, as a result of the restructuring, one of the two original elite secondary schools transitioned into a private, co-educational school (Christopher, 2015).

The restructuring of the public school system continues to be challenged, starting as early as 1987, with the changes and the effectiveness of those changes being debated (Williams, 2011). As a result, informed by Bermuda's historical perspective and then subsequent education decisions, the present educational context in Bermuda has been shaped. Up until June 2022, Bermuda's current educational context consisted of compulsory education for children between the ages of 5 to 16 years and was based on a mixture of English and American influences. Students are taught using the Cambridge curriculum, with some students sitting IGCSEs. However, the school structure follows an American system with school levels broken into three transition points: primary level attending six years of schooling (5 to 11 years), middle level attending three years (11 to 14 years) and senior high schools attending four years (14 to 18 years). Students must attain 104 credits during their time in senior high school in order to officially graduate (Bermuda Government, n.d.). There are still two feeder secondary public schools, but the number of private schools has now grown by an additional two.

More recently, and relevant to this study, the Education Convening Report (2017) identified the quality of education, and access to higher education, as a significant concern and a priority in contributing to the quality of life in Bermuda. Furthermore, the Education Convening Report (2017) reported a perceived disparity in the quality of public vs private education with 73% of respondents rating public education as only fair to poor, while private education was rated as good to excellent (82%). This perception is not new and is rooted in the historical perception of “*inequities and outcome deficits in the public education system*” (Curtis-Tweed, 2021:60).

As a result, Bermuda’s educational context is unique from a global perspective with almost half of its secondary student population attending a fee paying, private education, low completion rates for public school students in lower secondary (S1 and S2) and the number of adolescent students not attending secondary school. The year 2020 saw the lowest secondary school enrolment on record (Department of Statistics, 2021). The high rate of students attending private schools significantly outpaces the average global trend by approximately 27% (UNESCO, 2021). Table 1 reflects the percentage of students attending public and private schools during the data collection phase for this research.

Table 1

Bermuda Secondary (S1 – S4) School Enrolment 2019 – 2020 during data collection.

School	Enrolment	Percent of Total Students
Public Schools	1204	58%
Private Schools	857	42%
Total	2061	

In addition, Bermuda’s lower secondary (S1 and S2) school completion rates provide an insight into the Bermudian public’s perceived concern of quality in the public education, which is compounded by the seeming lack of reporting data. From the limited statistics available, Bermuda’s lower secondary completion rate is on a decreasing trajectory of male students successfully completing their lower secondary education, with 84% completing in 2001, falling to 71% in 2012 (UNESCO, 2021). Female students fared considerably better at 92% (2001) but decreasing to 85% in 2012 (UNESCO, 2021). Moreover, the numbers of adolescents out of school in the male lower secondary school age group was 22% (2011), while 12% (2011) of females were out of school (UNESCO, 2021). In addition, the last officially reported graduation statistics for the public school system was in 2018, with one Government secondary school reporting 97% females and 85% males graduating, while the other Government secondary school reported 88% females and 80% of males graduating for that school year (Bermuda Government, July 2018).

To round out the educational context in Bermuda, the most recent available Census (2016) reported 16% males and 12% females left school with no formal certificate, 37% male and 34% females left with a high school certificate, 22% males and 23% females left with

technical/vocational or an associate diploma and 26% of males and 32% females obtained at least a first degree. As a result, high dropout rates, uneven graduation rates between males and females, low confidence in the public school system and a significant percentage of the secondary population attending private schools creates a unique and critical environment worth exploring. All of these factors help to constitute Bermuda as a unique educational setting and justify the present research to support and inform future practice and policy. The following section will present a critical review of the literature for career aspirations, gender stereotyping beliefs and cognitive flexibility, with particular attention to late adolescents and how these concepts may intersect with each other.

2.3 Conceptual Framework Development

This section considers the relevant theories and current literature for career aspirations, gender stereotyping beliefs and cognitive flexibility to inform and guide this study.

2.3.1 Definitions of Study's Variables

As stated in Chapter 1.2., career aspirations are broadly defined and inclusive of leadership, achievement, and educational aspirations (Gregor & O'Brien, 2016) and, while different from career expectations (Berrington et al., 2016; Gorard et al., 2012), the integral relationship between career choice and expectation must be acknowledged and considered within the construct of career aspirations for the purposes of this study. Gender stereotyping beliefs have been defined as a person's views and attitudes toward their own stereotyping biases (Mills et al., 2012), while cognitive flexibility is the ability to overcome and adapt to new and challenging circumstances (Dennis & Vander Wal, 2010). These three variables will be explored separately as well as how they interact both globally and within the Bermudian context.

2.3.2 Gender Stereotyping Beliefs and Cognitive Flexibility's Influences on Career

Aspirations: Theoretical Approaches

The negative impact of gender stereotyping beliefs on the career aspirations of both males and females is still very much a reality for present day late adolescent, Gen Z students (Brussino & McBrien, 2022; Culhane & Bazeley, 2019; Haines et al., 2016). Concerningly, gender stereotypes have been found to be just as strong in 2014 as they were in 1983. Factors such as confirmation bias and cultural lag continue to support stereotype maintenance, despite the progress made to date (Haines et al., 2016). One cognitive process which may act as a protective factor against these harmful gender stereotyping beliefs, and was considered in this study, is cognitive flexibility (Ginevra & Nota, 2017; Gocłowska et al., 2012; Tufekcibasi & Sahin, 2021).

Thus, the remainder of this section will examine four theoretical models to determine the best approach to take for the purposes of this study. Careful attention will be given to finding the best fit for the Gen Z late adolescent student as it relates to their career aspirations. The theories include, Gottfredson's Theory of Circumscription and Compromise (1981, 2005), Social Cognitive Career Theory (Lent, Brown & Hackett, 1994), Career Construction Theory (Savickas, 1997, 2002) and Expectancy-Value Theory (Eccles, 1994; 2011).

The first, Gottfredson's Theory of Circumscription and Compromise (TCC 1981, 2005) is a developmental theory of children's career aspirations concerned with career development and choice processes. These two processes, career development and choice, either eliminate or embrace occupational choices based on a child's self-concept and preferences driven through four stages of development. Gender stereotyping beliefs are considered within these stages, but narrowly, within the context of prestige. From 14 years and up, there is an increase in

introspection about occupations. These occupations may be rejected for several reasons or a combination of reasons, such as not having sufficient prestige, not fitting in with a gender stereotype of what may be acceptable, or there is a question of a likelihood of attainment based on ability. Finally, towards the end of high school, according to Gottfredson (1981), students will begin to make choices based more on pragmatics and accessibility as opposed to their interests. As a result, students make compromises in order to attain their “*better bets*” (1981:549). Gottfredson’s TCC (1981, 2005) is limited, in the context of this study, by its view of stereotypes set within the construct of how much a child values prestige. This view is too narrow for the purposes of this study and does not take into consideration that all children may not view careers within the constraints of prestige.

A second theory considered is the Social Cognitive Career Theory (SCCT Lent, Brown & Hackett, 1994) which offers an alternative perspective to TCC, focusing career development not just on a student’s career choices, but also their interests, academic performance and their persistence towards these interests and choices. This framework has its foundation in Bandura’s social cognitive theory (1986) and focuses particularly on self-efficacy beliefs, outcome expectations, interests and goals and how these variables interact with a person and their environment. SCCT explains that these interactions will go on to shape the course of a person’s career development (Lent & Brown, 2006a). A strength of SCCT is its focus on gender role socialisation (Lent et al., 2000). However, for the purposes of this study, SCCT is limited by its broad sweep of several internal factors, not just self-efficacy but expectations, interests, goal setting and their interactions with the environment and how they, in turn, may influence career development. This emphasis on a number of cognitive processes, most specifically self-efficacy, makes SCCT less relevant for the current study because of the conflicting focus between two

cognitive processes: self-efficacy versus cognitive flexibility. Critically, SCCT does not consider the role values play in career aspirations but rather the focus is on how capable a person believes themselves to be which motivates them to achieve their aspirations. It may be argued that as a theory, it needs developing to more widely include key factors that may influence aspirations. It presents a varied, but narrow view and ultimately creates a gap in fully understanding career aspirations and thus limiting what may be found to be changeable and therefore possible to alter via education.

A third theory, Career Construction Theory (CCT Savickas, 1997, 2002) is a multidimensional and hierarchal theory concerned with a person's ability to adapt and be adaptable within a career context. This theory differs significantly from TCC, SCCT and later discussed Expectancy Value Theory in that it is not a developmental theory and views career development as being driven from external factors, leading a person to adapt all aspects of their career to their environment as opposed to internal factors driven by maturity (Savickas, 2013). In addition, and significant to the present study, Savickas (2013) operationalised adaptation as "*readiness, resources, and results*" (157) referencing the Latin word to adapt as "to fit". Savickas (1997, 2013) went on to define four dimensions of career adaptability (concern, control, curiosity and confidence), which has since been used by researchers when assessing career adaptability (Hirschi, 2009). This theory looks for the student to adapt or adjust or "*be flexible*" to their present environment; however, it appears to assume that both male and female students have equal access and opportunities, affording them an equal playing field to be able to adapt. This theory lacks consistency over the definition and operationalisation of the term adaptability (Hirshi et al., 2015).

Finally, the Expectancy-Value Theory (EVT Eccles, 1994; 2011) focuses on an individual's choices and how highly those choices are valued and then aligned with that individual's expectation of their chance for success relative to those choices. In addition, EVT posits that educational and career choices are based on individual differences within each gender, but also goes a step further, and explores how a person is impacted by differences in their expectations for success and their subjective values towards their educational or career choice. Both an individual's expectations and values are subjective and thus open to the influences of gender stereotyping beliefs. This point is significant for the positioning of this study, as the study examines the influences of gender stereotyping on career aspirations and cognitive flexibility, not gender influences. In addition, this model takes into consideration the role gender socialisation plays within the different contexts of home, peers and school and how these factors may influence self-perceptions and values.

Importantly, EVT does not intend value to be viewed within a non-gendered lens, but rather acknowledge a value laden bias when comparing men and women and considers the cultural context which informs women's decision-making as they make educational and occupational choices (Eccles, 1994; 2011). Thus, this theoretical framework is better suited to an individual and their personal values as opposed to the more defined values of other models. While EVT focuses on values and expectations and considers how gender stereotyping beliefs may affect those values and expectations, there is a gap to explore other factors, such as cognitive flexibility. Critically for this study, "*E-V beliefs are the most proximal psychological predictors of career plans and aspirations*" (Gao & Eccles, 2020:2).

In addition, while exploring the literature for a theoretical framework to support this research the present study is committed to meeting this generation where they are and finding the

best fit for Gen Z students. Gen Z has been described as self-confident with a strong sense of their own self-perception (Barhate & Dirani, 2021) making them a less than ideal group to be characterised with having a mindset to adapt or be adaptable. It seems less likely that this generation of students will change to suit their environment. In contrast, this generation is motivated by their values and their desire to make a meaningful difference in the world (Bohdziewicz, 2016). Thus, a career adaptability framework may be better suited to earlier generations, but the EVT framework which acknowledges personal values and considers how gender stereotyping beliefs may influence values and expectations is the best fit for this study.

2.3.3 Gender Stereotyping Beliefs versus Gender

The discourse surrounding gender stereotyping beliefs goes back millennia, where embedded gender roles and stereotypes were absorbed into our culture, history and psyche, resulting in the present-day patriarchal structure (Bem, 1993). As such, in this study, gender stereotyping beliefs will be distinguished from gender, to highlight and explore the role that gender stereotyping beliefs play in career aspirations of late adolescents.

A defining moment for modern history was the breakthrough of the second wave of feminism in the 1960/70s. While the first wave was no less impactful, its aims and intents were for basic equal rights. The second wave of feminism sought to break down invisible barriers and challenge ingrained stereotypes. To support this challenge, female researchers began positioning empirical research to confront the assumptions of gender-based stereotypes of the time such as theoretical bipolarity of masculinity and femininity (Constantinople, 1973) to new and relevant issues such as sex-biased job advertising (Bem & Bem 1973) as more and more women entered the labor market. Significantly, Bem's (1974) theory of psychological androgyny helped to acknowledge that there were people who did not fit the traditional masculine or traditional

feminine lens. The concept of androgyny opened the discourse to a nuance of the genders, encompassing *both* masculine and feminine characteristics or a lens which spoke more of neutrality or a lack of traditional traits all together. Thus, these researchers began the conversation of what and how the role gender stereotyping beliefs play in all aspects of a woman's life going forward.

This is a particularly relevant investigation to have within the context of Bermuda because while much of the western world was experiencing the second wave of feminism, Bermuda was just breaking through from the first. To illustrate this point, women in the UK were given the right to vote in 1918 if they met property qualifications; however, it would take until 1944 before Bermudian women were able to vote (providing they met property qualifications). Despite being a British colony, Bermuda was considerably behind other British colonies such as Canada, New Zealand, Australia, India and parts of the Caribbean (Bourbonnais, 2018). It was not until 1963, and significant social upheaval, that Bermuda changed its constitution to allow for true universal adult suffrage and the first democratic elections were held (Jones, 2004). This is significant, given the lack of female representation in traditional male roles during this time period. Bermudian women were more focused on representation and participation rather than challenging gender stereotypes and expanding the traditional masculine or feminine view.

From a developmental perspective, gender stereotypes have significant implications depending on the gender of the child. For example, gender stereotypes can negatively influence career choices when girls avoid STEM subjects (Bian et al., 2017), or they can lower reading expectations for boys resulting in lower reading skills (Mutoni et al., (2020). It is believed that gender stereotypes peak around 5 to 6 years of age, but some children don't ever grow out of the stereotypes they develop at this early age (Halim, 2016). Halim (2016) commented, "*children*

exhibit gender rigidity by embracing what is deemed appropriate for one's gender (e.g., girls love of dresses), rejecting what is deemed appropriate for the other gender (e.g., girl's refusal to wear pants), or a combination of the two" (p.155). Concerningly, a review of the evidence found that gender rigidity can have implications for well-being, (Halim, 2016; Halim et al., 2017) confirming that the harmful effects of gender stereotyping can start early and stay with a person throughout their life.

Unfortunately, the danger with stereotypes is that people can begin to change their behavior and act to conform to a stereotype even though they may not believe it to be true (Steele & Aronson, 1995). For example, as early as 6 years old, girls start to avoid activities that are deemed for "*really, really smart children*" (Bian et al., 2017:389). If these effects are seen at such an early age, it is critical to further investigate gender stereotyping beliefs of the late adolescent, which were highlighted by Igbo et al. (2015) when they found that gender stereotypes favored male students and were a harmful influence on female students' self-concept and academic achievement. Unsurprisingly, further evidence has shown females in late adolescence view STEM subjects as a male domain even more so than their male counterparts (Makarova et al., 2019).

Therefore, when considering the effect of stereotypes on both males and females, it is essential to gain a deeper understanding of how gender stereotyping beliefs influence late adolescents, especially as it relates to their career aspirations. This study will address this concern by using Bem's Gender Schema Theory as its overarching theoretical lens. Gender schema theory will be used to highlight the advantages and disadvantages of the genders and will be discussed in further detail in section 3.3.

2.3.4 Gender Stereotyping Beliefs and Career Aspirations

It is increasingly clear that gender representation is not enough to bring equity into the workforce, with occupational stereotypes continuing to influence career selection, promotion and performance evaluations (Matheus & Quinn, 2017). These concerns are supported by the OECD (Brussino & McBrien, 2022), who have identified the importance of eradicating harmful gender stereotyping beliefs in all levels of the school experience. More exploration into our understanding of gender stereotyping beliefs and their relationship with career aspirations could provide valuable information on how we educate and counsel the late adolescent in their final years of school. This is important because it could not only provide students with more opportunities for a wider variety of occupations but also positively contribute to the labor force with a more varied and diverse talent pool. This would result in more diversity within and across employment sectors, helping to normalise differences and reduce stereotypes.

Historically, women have faced significant attitudinal barriers concerning their career aspirations (Bem & Bem, 1973; O’Leary, 1974; Ruble et al. 1984). Bem & Bem’s (1973) early work on sex-biased job advertising found that advertising not only created and perpetuated biased preferences, but unbiased advertising could alter and reverse those preferences. Unsurprisingly, “*for an employer to advertise as if there were ‘male’ jobs and ‘female’ jobs is to produce a self-fulfilling prophecy*” (1973:16). In addition, Peplau (1976) established that identification with a traditional sex-role was associated with lower career aspirations. Thus, there is an organic connection between workplace discrimination, gender stereotyping beliefs and, ultimately, a young adult’s career aspirations. Today, “*we still organise and stereotype our world based on gender*” (575) with critical outcomes for girls and women (Starr & Zurbriggen, 2017).

In the 1970s internal factors for females, such as fear of failure, low self-esteem, role conflict and perceived consequences for having career ambitions were all found to be contributing factors to impeding a woman's career aspirations (O'Leary, 1974). These internal factors were then compounded by external factors such as societal gender stereotypes resulting in negative attitudes towards a woman's competency (O'Leary, 1974). Over forty years and despite the progress which has been made, concerns such as sex discrimination, lack of confidence, multiple roles and conflicts between children and careers are still very much a significant concern for women in the 21st century (Watts et al., 2015).

2.3.4.1 Permanence in and Through Change

Consideration of any progress must be tempered with Bourdieu's reality check at the turn of the millennium. In the context of both education and work, Bourdieu summed up a woman's reality when he wrote, "*permanence in and through change*" (2001:91). He observed that previously male dominated positions were, on the one hand, becoming more accessible to women, while on the other, being devalued and "*feminised*" (91), with men exiting those careers. Bourdieu concluded that the progress which women had made, up and until that point, was regulated by a gap that was maintained between the sexes and especially relevant for senior and executive positions.

Bourdieu's observations were substantiated when Begeny et al. (2020) found that as women make gains in representation, discrimination still persists and often by the very people who espouse that discrimination is no longer relevant. Using a double-blind experiment Begeny et al. (2020) found that biases persisted within the field of veterinary medicine, even when women were well represented. Concerningly, those individuals who maintained that bias did not exist, were in fact the "*key drivers of it*" (2020:1). This common belief that representation signals

a lack of long held and ingrained gender stereotyping beliefs supports the continued need to closely monitor this relationship and better support late adolescent students, so they are better prepared to cope with stereotypes they may later face within the workplace.

2.3.4.2 The Role of Value

As previously mentioned (see 2.3.2), it is important to not only consider but expand our understanding of the role value plays, outside the narrow view of prestige, when exploring career aspirations. One study which used EVT to explore values beyond prestige was Weisgram et al. (2010). In Study One, they examined how gender related conditions, such as gender stereotypes, influence a person's "occupational values" and then subsequently play a role in a person's occupational interests. The researchers found that across all three age groups (children, adolescents and adults), masculine jobs were perceived as providing money and power values while feminine jobs were considered to provide greater family values. This study showed that ingrained gender stereotypes ran through all age levels, concluding that gender stereotypes may play a "*causal role in individuals' occupational interests*" (793).

Weisgram et al. (2010) then examined how the values associated with certain jobs were influenced by the gender of the worker in Study Two. The results indicated that both adolescents and adults developed an occupational schema linking money and power and altruism and family values (Weisgram et al. 2010). In this study, Weisgram et al. (2010) found that across all ages, men were more interested in jobs valued high in money as opposed to the exact same job valued high in power, family or altruism while women across all ages were identical to the men's findings with the exception of altruism. The findings showed that altruism was the only value which could be associated with gender differences in occupational interest, with females

showing significantly more interest in pursuing jobs valued high in altruism than their male counterparts (Weisgram et al., 2010).

In contrast, a study which explored gender-role stereotyping and career aspirations with gifted early adolescent boys and girls (11 to 14 years) found that girls were interested in a significantly greater number of careers (Raffaele Mendez & Crawford, 2002). Raffaele Mendez & Crawford (2002) noted that girls had a higher degree of “*gender role flexibility*” (96), while boys aspired to careers requiring more education and a higher level of prestige in their career aspirations. However, this study focused on gender stereotypes through the theoretical standpoint of Gottfredson's TCC (1981: 2005) allowing only a narrow view of the role value plays, therefore limiting our understanding of early adolescents' career aspirations.

2.3.4.3 Developmental Perspective of the Effects of Gender Stereotyping Beliefs on Career Aspirations

From a developmental perspective, the *Drawing the Future* (2018) survey highlights the importance of better understanding the relationship between gender stereotyping beliefs and career aspirations (Chambers et al., 2018). This large, international survey found that progress was not as advanced as expected with the UK results confirming that gender stereotyping beliefs are set from the age of 7-years-old in relation to careers, and children's aspirations develop as a result of their preconceived understandings of gender in relation to specific jobs. Unsurprisingly, it was also found that boys still “*overwhelmingly aspire to roles in traditionally male dominated sectors and professions*” (2018: iv). These international findings confirmed that career expectations are driven by gendered stereotypical masculine/feminine roles with similar findings for STEM related aspirations, while critically, the jobs which were chosen by 7-year-olds also “*mirrored*” the jobs chosen by 17-year-olds (Chambers et al., 2018). These findings support the

need to expand our understanding of the factors which contribute to gender stereotyping beliefs and explore practical ways in which teachers and counsellors can broaden students' interests and flexibility beyond stereotypical careers aspirations.

Concerningly, while the serious impacts of early stereotypes on young children are now more widely recognised (Brussino & McBrien, 2022; Chambers et al., 2018), a need for better understanding of the impact on the late adolescent is critical. The discourse around career aspirations and gender stereotyping beliefs continues to highlight the challenge young women face as they aspire to a future career. This was evident in a study showing that a significant number of 18-year-old women, who initially aspired to work in male dominated positions, had changed their career aspirations by the time they were 25 based on their desire for job flexibility to accommodate having a family (Frome et al., 2006). This study is significant in that its theoretical approach used EVT (Eccles, 1994; 2011) thus extending what is known about why the women changed their aspirations and the role values played. In addition, this study offers a longitudinal perspective of how an 18-year-old female student's hopes and dreams while still in school are so dramatically impacted by their subsequent reality of life after school. The study highlights how gender stereotyping beliefs influence young women entering and exiting the workforce.

Fewer studies could be found exploring the relationship between gender stereotyping beliefs and career aspirations of the late adolescent. Recent large scale literature reviews focus on gender stereotypes in early childhood (Brussino & McBrien, 2022; Culhane & Bazeley, 2019) and early adolescence (Kagesten et al., 2016) but no large-scale review could be found for the late adolescent. Interestingly, much of the research for the late adolescent investigates career aspirations and gender (Bolat & Odaci, 2017; Gadassi & Gati, 2009; Gutman & Schoon, 2012;

Miller & Hayward, 2006; Schuette et al., 2012; Watts et al., 2015) or, increasingly common, career aspirations and gender stereotyping within the context of STEM (Chan, 2022; Dicke et al., 2019; Dunlap & Barth, 2019; Hadjar & Aeschlimann, 2015; Makarova et al., 2019). Outside of those studies associated with STEM careers, studies exploring the relationship between gender stereotyping beliefs and career aspirations in the late adolescent have found that students between the ages of 16 and 19 years perceive most jobs as being both gender stereotyped and segregated (Ginevra & Nota, 2017). Thus, it is becoming increasingly clear that there is a need for better understanding of how gender stereotyping beliefs, versus gender, influence a late adolescent's career aspirations.

2.3.5 The Bermudian Student

A review of the literature in adolescent career aspiration development finds limited research through which to provide an understanding of what inspires and supports Bermuda's students, especially the late adolescent.

2.3.5.1 Adolescent Career Aspiration Development in Bermuda

One significant development, resulting from the system-wide review and restructuring (see 2.2.1), was the design and implementation of a career development programme for younger adolescents (Outerbridge, 1999). In 1999, Bermuda developed a formal guidance and counselling curriculum for middle school students (aged 11-14 years). This new counselling curriculum represented a "*major paradigm shift by the Bermuda Government School System*" (Outerbridge, 1999:119), moving from one of crisis management to a developmental model of prevention focusing on lifelong learning skills and career goals to better support students in developing their problem solving and decision-making skills for future success (Outerbridge, 1999).

However, within a decade of the implementation of the Middle School Guidance and Counselling Program, significant concerns were raised about the dropout rates of students, particularly young Black males (Mincy et al., 2009). As a result, the Bermuda Government commissioned a study with Columbia University's Centre for Research on Fathers, Children and Family Well-Being (Mincy et al., 2009). Mincy et al. (2009) conducted 18 semi-structured interviews from one government public school and reviewed data from the 2000 census. It was concluded that Black, male students were underrepresented as wage earners and educational attainment in employment in Bermuda. In addition, the study found that Black male students tended towards career aspirations in sports or entrepreneurial businesses such as, electrical, carpentry or IT but had little aspirations for "*professional or managerial work*" (Mincy et al., 2009: vii). This data has been significant within the Bermuda educational context and widely referenced within the context of educational adolescent youth research in Bermuda (Douglas, 2012; Duncan, 2012).

Critically, over two decades on from Bermuda's system wide restructuring (see 2.2.1) and the Mincy report, only a few doctoral theses have explored the progress of the young Black male (Douglas 2012; Duncan, 2012). One study (Duncan, 2012) investigated Black male students in the middle years, exploring concerns of marginalisation within the public education system. The study used semi-structured interviews, interviewing 37 middle school students, 13 middle school teachers and seven males who had gone through the middle school Government education system (along with two school principals and one administrator). Amongst the study findings were the identification of an apathetic learning environment which adversely affected academic performance pointing to the fact that Black males defined success through the attainment of personal goals, such as "*obtaining a lavish house, acquiring good health,*

cultivating a spiritual foundation, etc.” (42). This finding is significant and relevant to this study, as it does not appear that the students interviewed identified career goals or aspirations as a means of defining success. In addition, Duncan (2015) followed up his thesis with a reflection of current data available in 2015 and concluded that “*the academic achievement and social success of Black males has deteriorated in Bermuda since the implementation of middle schools and the restructuring of senior schools in 1997*” (44).

A different angle was taken by Douglas (2012) who built on Mincy et al.’s (2009) research to explore how Black males form identities, define success and cross borders through community based pedagogical spaces outside of a traditional educational setting. Douglas (2012) interviewed twelve Black Bermudian males of varying ages and challenged educators to look beyond the statistics of failure and consider their conceptualisation of success and their own ideologies which rely on traditional spaces and structures. While this study did not directly address career aspirations, it highlighted the need for a better understanding of what influences the career aspirations of the late adolescent student in Bermuda.

More closely aligned to this present study, career development was explored by deShield (2014) who conducted a comparative study investigating students’ perceptions of their career development experiences and preparedness for postsecondary aspirations. The study used the Hope Centered Career Development Competencies (Niles et al., 2010) and compared two high school experiences, consisting of two freshman colleges (16-58 years) one in Pennsylvania and one in Bermuda. deShield (2014) found that students from both schools had similar competencies (self-reflection, self-clarity, visioning, goal setting and implementing and adapting); however, the students from Pennsylvania scored significantly higher on the hope competency than the students from Bermuda. These results seem to indicate that Bermudian

students appear to feel less hopeful than their American counterparts concerning their career and college aspirations, and view college as less accessible and achievable.

These are concerning findings for Bermuda's youth and supports the need for a better understanding of students' career aspirations in Bermuda, especially for the late adolescent. In addition, the existing literature is skewed towards a bias reflecting male, public secondary school students. The present study would significantly add to our understanding by including a wider representation of Bermuda's youth. This is particularly timely given the most recent official youth unemployment rate reporting 32.1% of persons aged 16 to 24 years old as unemployed (Bermuda Government, 2020). Therefore, this research offers, for the first time to this researcher's knowledge, a novel opportunity to explore perceptions and influences of career aspirations from all aspects of the local Bermudian context, capturing both the public and the private school experience.

2.3.5.2 Gender Stereotyping Beliefs and the Bermudian Student

It is critical to better understand the relationship between gender stereotyping beliefs and career aspirations of the late adolescent student given the complex legacy of gender inequality in Bermuda. Currently, Bermudian women are consistently more educated than their male counterparts (Bermuda Government, 2016); however, increased education does not translate into political power. Perhaps, as a result of having a minority voice in decision-making for the country, statistics gathered for women's issues are seldom collected, with little research to inform accurate and relevant legislation and policy. The most recent indicators to monitor the UN's sustainable development goals saw Bermuda reporting only 6.7% of indicators from a gender perspective (UN Women Count, 2020). Critically, there were gaps in key areas, such as violence against women, unemployment rates and gender pay gap.

From a political leadership perspective, Bermuda has had three female premiers; however, their tenures have all been short-lived with the last two victims of political overthrows within their own party. In 2020, of the thirty-six members of Parliament representing their individual constituencies, only nine (25%) women sit at the table, making a slight increase from 2013 when 22% were women (Department of Statistics, 2013). Further, only four women hold ministerial positions out of a possible 12. Anecdotally, examples of male politicians making inappropriate and misogynistic comments have provided an insight into the depth and breadth of Bermuda's patriarchal, and at times misogynistic society (Appendix C). This cultural context is significant, as these incidents are all within recent memory of the male and female late adolescent students who participated in this study.

Interestingly, only one study was found which explores gender stereotypes within the Bermudian context. Jethwani (2015) studied the gender gap in educational attainment among Black, Bermudian adolescents by examining the intersectionality of gender and racial stereotypes (Jethwani, 2015). She interviewed 30 Black male and female early adolescents in their first year of a public, secondary school and found that while girls engaged in more behavioral and disciplinary issues, they were less likely than boys to compromise their academic performance. The girls were perceived by both girls and boys to be more academically focused, better behaved and more readily accepting of emotional support when needed. This study suggests that gender stereotypes exist in the Bermuda public school setting, which perceive boys as "troublemakers and less emotionally focused than girls" (p.356), in addition, boys were perceived as less likely to seek help when needed. This study is significant as it provides an understanding of the early adolescent experience of gender stereotyping beliefs that may influence Bermudian students and their career aspirations. This is important given the late entry Bermudian women have had in

both the first and second wave of feminism and the lack of female representation in both the historical and present-day political power structure in Bermuda.

2.3.6 Cognitive Flexibility

2.3.6.1 Developmental Perspective

Cognitive flexibility is one aspect of executive functioning (Diamond, 2013). Executive functions are domain-general cognitive processes responsible for regulating domain-specific processes, such as problem solving, memory and attention (Diamond, 2013). In fact, executive functions have been described as “... *like having an air traffic control system at a busy airport to manage the arrivals and departures of dozens of planes on multiple runways*” (Center on the Developing Child at Harvard University, 2011:1). Numerous studies have attributed cognitive flexibility to increased well-being, psychological health (Demirtas, 2020; Jen et al., 2019; Kashdan & Rottenberg, 2010) and hope (Akdeniz & Ahci, 2023). Importantly, cognitive flexibility has also been found to be a reliable indicator of a child’s future academic achievement for both adolescents and university students (Esen, et al., 2017; Kercood et al., 2017) and contributes to creativity (Gocłowska et al., 2012; Zuo et al., 2019) and life satisfaction (Odaci & Cikrikci, 2019).

From a developmental and global perspective, cognitive flexibility has been found to be critical to children as they transition through various stages of their educational experience (Hauser et al., 2015), and their development (Gopnik et al., 2017). Higher cognitive flexibility has been found to be a predictor for better academic outcomes in students between the ages of 9 and 11 years (Magalhaes et al., 2020). Similarly, cognitive flexibility has been found to positively correlate with academic achievement and general, academic, social and emotional self-efficacy for 15- to 18-year-old high school students (Esen et al., 2017). Exploring a similar

age group, Onen and Kocak (2015) found that there was a significant positive relationship between cognitive flexibility and students in between the ages of 14 and 16 years and their attitude towards studying. However, Gopnik et al. (2017), using an experimental design, found American adolescents were less flexible in their learning, but more flexible socially, concluding that there may be “*important developmental transitions in flexibility*” (7892) for young and late adolescents. Finally, cognitive flexibility has been shown to significantly contribute to not only a late adolescent’s learning but also with increased mental health and well-being (Appendix D).

2.3.6.2 Measuring Cognitive Flexibility

In order to establish an understanding of cognitive flexibility it is important to examine how cognitive flexibility is measured, which is based on two different yet similar perspectives: objective (neuropsychological tasks) or subjective (self-report) assessment (Johnco et al., 2014). The objective definition comes from a cognitive neuroscience perspective, and neuropsychological tests have historically been the most common and frequently used as measures. This measurement tool typically requires a person to follow a series of rules, which will often switch tasks unexpectedly, to throw up new and competing alternatives. From a developmental perspective, the literature operationalises cognitive flexibility “*as the ability to sort a series of stimuli first by one rule, and then by another*” (Blakey et al., 2016:514). To measure a child’s cognitive flexibility, an objective measure frequently used is the Dimensional Change Card Sort (Zelazo, 2006), which measures flexibility through the child’s ability to switch tasks by sorting shapes and colors of cards, while being required to switch back and forth as the rules change. There are similar instruments used for late adolescents and adults, such as the Wisconsin Card Sorting Test (WCST; Heaton, 1993).

Interestingly, clinical practitioners have started to use a shorter adult version of the WCST, M-WCST, for neuropsychological examinations (Kopps et al., 2021). Recent research (see Appendix D) has indicated evidence linking decreased cognitive flexibility with psychiatric disorders (Highgate & Schenk, 2020), such as bipolar disorder (O'Donnell et al., 2017) and obsessive-compulsive disorder (Gruner & Pittenger, 2017). However, it is important to note that the neuropsychological instruments mentioned are dependent on other non-executive neurological processes such as attention, memory and/or abstract reasoning and thus do not exclusively measure cognitive flexibility. As a result, when conducting research, construct validity may be weaker and thus less valid when trying to make associations between variables (Highgate & Schenk, 2020). Objective measures (as described above) provide detail on the limits of an individual's cognitive flexibility within a specific, isolated, lab-based task. Criticism has been given that examining cognitive flexibility from a purely objective view is too narrow and reductionist (Yu et al., 2019), and does not reflect or measure how executive processes such as cognitive flexibility function or are applied in day-to-day 'real world' dynamic and complex tasks (Miyake et al., 2000).

However, cognitive flexibility can also be assessed through a self-report that measures subjective definitions of cognitive flexibility. These definitions vary depending on the researcher's view of what cognitive flexibility is and what elements it involves. For example, Martin and Rubin (1995) saw cognitive flexibility within the context of communication and defined it as the ability to provide varying explanations, create and convey multiple solutions and perceive problems as manageable. Different again, researchers in the field of clinical psychology (Kashdan & Rottenberg, 2010) interchanged cognitive flexibility with psychological flexibility and described it as the ability to adapt to changing demands, reconfiguring mental resources,

changing perspective and balancing competing desires within the context of one's interactions with people and their environment. Yet, other researchers view problem-solving abilities (Ginevra & Nota, 2017; Heppner et al., 2004) and decision-making skills (Hauser et al., 2015; Laureiro-Martinez & Brusoni, 2018) as closely associated with cognitive flexibility. Significantly for this research, cognitive flexibility is viewed as the ability to overcome and adapt to new and challenging circumstances and to replace maladaptive thoughts with adaptive thinking (Dennis & Vander Wal, 2010).

In essence these definitions speak to the same process, a person's ability to adapt to changes and make decisions when confronted with new circumstances; however, an objective definition aims to capture and isolate a single process, typically more relevant in a laboratory setting, and measured through standardised assessments. Importantly, researchers have found similar results when using both objective and subjective measures as seen with Gopnik et al. (2017) and Magalhaes et al. (2020) who used objective (neuropsychological) measures, while Esen et al. (2017) and Onen and Kocak (2015) used subjective self-reports all of which found that cognitive flexibility was critical to development and supported students in their learning.

Importantly, literature in both the clinical and neuroscience fields have shown that higher cognitive flexibility indicates increased well-being with some mental health professionals considering cognitive flexibility as a mediator and therapeutic tool (Demirtas, 2020; Kashdan & Rottenberg, 2010; Oishi et al., 2018). However, despite the inconsistencies in definitions used by clinicians, and the subsequent variety of measurement tools, the results, similar to that of learning, support the association that increased cognitive flexibility leads to increased well-being are surprisingly consistent (Dennis & Vander Wal, 2010; Jen et al., 2019). Therefore, given the

numerous established benefits cognitive flexibility has for both learning and wellbeing, it is certainly worth considering if it could be a supportive factor for the late adolescent student.

2.3.7 Cognitive Flexibility and Career Aspirations

It is critical to investigate what association there may be between cognitive flexibility and career aspirations given recent research which supports the importance of having high career aspirations and its positive association with both achievement (Lekfuangfu & Odermatt, 2022) and wellbeing (Dudovitz, et al., 2017; Manuel, et al., 2020; O'Lenik-Shemesh, et al., 2018).

It has been well established that women and men tend to choose occupationally stereotyped careers (Basfirinci et al., 2019; Tomoko, 2014), reducing their options and narrowing their flexibility for nontraditional careers. Therefore, the significance of investigating a relationship between career aspirations and cognitive flexibility lies in the possibility that cognitive flexibility may support a student to be more open-minded to a variety of career choices. When exploring the role of cognitive flexibility with aspects of career development, a positive relationship was found in the only two studies identified by this review. Kercood et al. (2017) concluded that students with higher cognitive flexibility had more confidence when making career choices than those with lower cognitive flexibility. Yildiz-Akyol and Boyaci (2020) established that a high level of cognitive flexibility is associated with career readiness skills in university students and that cognitive flexibility is a significant predictor of career adaptability. Both studies explicitly examined cognitive flexibility but defined them differently, with Kercood et al. (2017) defining cognitive flexibility as the ability to provide varying explanations, create and convey multiple solutions and perceive problems as manageable (Martin & Rubin, 1995), while Yildiz-Akyol and Boyaci (2020) defined cognitive flexibility as the ability to cope and shift to new and challenging circumstances (Dennis and Vander Wal, 2010).

Therefore, this is an important link to establish with considerably more research needed to examine whether cognitive flexibility is actually a relevant factor for the late adolescent student as they aspire to a future career. Current research can build upon what is already established to explore the extent to which cognitive flexibility is associated with career aspirations and whether, as suggested, it could be a factor that predicts higher career aspirations.

2.3.8 Cognitive Flexibility and Gender Stereotyping Beliefs

The OECD (*Education Working Paper* No. 271, 2022) has recently acknowledged that gender stereotypes continue to persist in education and has published key policy areas for countries to work towards to protect students from their harmful effects. Thus, it is critical for schools to work not only to educate but prevent students from the influences of gender stereotyping beliefs. It is therefore important to explore the extent to which cognitive flexibility can act as a protective factor, and thus help mitigate and protect against harmful stereotyping beliefs. This is critical because research has shown that harmful stereotypes continue to influence the late adolescent student when considering future occupations, reducing their range of options to occupational stereotyped professions (Ramaci et al., 2017), and affecting their ability to use coping strategies in different ways (Renk & Creasey, 2003). Moreover, children as young as six years old are internalising stereotypes which one day may narrow their range of careers (Bian et al., 2017; Culhane & Bazeley, 2019).

In order to critically review the relationship between cognitive flexibility and gender stereotyping beliefs one can, again, start with Sandra Bem (1975). While Bem (1975) did not mention cognitive flexibility, she hypothesised that androgynous participants would be more likely to be able to shift and adapt across situations, at any given moment, regardless of their sex appropriate stereotype. Bem (1975) conducted two experiments with undergraduate students to

explore behavioral outcomes of sex role stereotyping. Subjects were initially screened using the Bem Sex Role Inventory (BSRI: 1974) and allocated as either masculine, feminine or androgynous. The masculine and feminine self-concepts were typically stereotyped, with the male gender role reflecting independence, assertiveness and dominance and the female gender role reflected playfulness, sensitivity and sociality. The androgynous, or mixed self-concept, allowed for an individual to embrace both masculine and feminine traits. Bem concluded that the participants who identified as androgynous, were consequently armed with a sex-role adaptability and better able to engage in a variety of situations without undue influence from stereotypes. Bem asserted that people with androgynous behaviors stood a better chance of overall “*psychological health*” (1974:643). In addition, she found that participants who strongly identified with a gender stereotype would have deficits (lacking in playfulness or independence) or rigidity in their behaviors with feminine individuals having little independence and thus the greatest deficits.

Interestingly, two of the earliest studies identifying cognitive flexibility by name, and using the BSRI, gave varying results (Anderson, 1986; Carter, 1985). Both studies surveyed university students but had contradictory results. One study found that androgynous participants scored higher in cognitive flexibility than feminine and undifferentiated individuals, but no difference was found between androgynous and masculine persons (Carter, 1985). Similar to Bem (1974), these results also highlight the risk to participants who identify with the traditional feminine role. The second study sought to clarify the relationship among masculinity, femininity and androgyny (Anderson, 1986), but contrary to expectations, it found that men who identified as androgynous were “less flexible and more conforming” (p.275). In addition, the study provided no support that androgyny was associated with psychological flexibility. Similar to

Bem (1974) and Carter (1985), Anderson (1986) highlighted the association of high masculinity with flexibility (Anderson, 1986). In addition, Carter (1985) noted that the literature was inconsistent and further investigation was needed between individuals that identify as androgynous versus a strong masculine or feminine sex-role orientation and cognitive flexibility. These initial studies suggest how strongly a person who identifies with a gender stereotyping belief may influence not only how flexible and open an individual is, but also cognitive flexibility may act as a particularly relevant factor against gender stereotyping beliefs.

From a developmental perspective, a pattern in children emerged from the literature proposing that gender stereotyping beliefs move through three consecutive steps of rigidity/flexibility: phase one, when a child first becomes aware of gender stereotyping behavior (preschool years), phase two, a period of learned rigidity in adhering to gender stereotyping characteristics (between 5 and 7 years) and lastly, gender stereotyping characteristics start to become more flexible around eight years old (Ruble & Martin, 1998; Signorella et al., 1993; Trautner, 1992). However, Trautner et al. (2005) sought to determine whether childhood rigidity and flexibility of gender stereotypes should be considered from a cognitive-developmental stage or an individual difference perspective. The researchers used a longitudinal study to explore 5- to 10-year-old children and found evidence to support a cognitive-developmental perspective showing a period of rigidity as part of the normal developmental trajectory and not an individual characteristic of a child. Critical to this study, the late adolescent is outside of this cognitive-developmental phase of rigidity and moving towards increased flexibility, and therefore, not predictive of the adolescents' later beliefs (Trautner et al., 2005). As a result, when examining cognitive flexibility, one can conclude that other factors, outside of the late adolescents'

cognitive development, are involved and therefore must be changeable based on individual differences and how gender stereotyping beliefs may be influenced.

Few studies explicitly investigate a possible relationship between cognitive flexibility and gender stereotyping beliefs. Gocłowska et al. (2012) used gender counter-stereotypes and posited that stereotypes inhibit one's ability to think flexibly. They used two experimental conditions to explore if a primed gender counter-stereotype would have a positive association with cognitive flexibility. Cognitive flexibility was defined as the "*ability to go beyond immediately activated knowledge*" (Gocłowska et al., 2012:219). University students were primed using either a gender stereotype (male mechanic) or a counter-stereotype (female mechanic) and found that thinking of a counter-stereotype can activate a "*cognitive flexibility mindset*", meaning more flexible and creative thinking (Gocłowska et al., 2012:222). In contrast, Ginevra and Nota (2017) directly linked cognitive flexibility with problem-solving skills and gender stereotyping beliefs with occupational stereotypes. As previously mentioned (section 2.3.4), Ginevra and Nota (2017) concluded that increased problem-solving abilities were associated with decreased perception-based gender stereotyped jobs, resulting in a more flexible outlook for career choices free from limiting gender stereotypes. From a different angle, Tufekcibasi and Sahin (2021) found that cognitive flexibility played a significant role in predicting gender role attitudes for adults (18 to 30 years).

The relationship between gender stereotyping beliefs and cognitive flexibility is clearly a topic worth considering. It appears that, outside of a cognitive-developmental window in childhood, the greater a person's flexibility the more open they are to combatting explicit sex role stereotyping, particularly of occupations. Thus, both cognitive flexibility and gender stereotyping beliefs are two cognitive processes that have the potential to be changed through

education, with cognitive flexibility acting as a protective factor against harmful gender stereotyping beliefs.

2.4 Gaps Arising in Current Literature

The review of existing literature determined several limitations and gaps. The literature suggests that cognitive flexibility has been found to be a significant factor for career readiness of university students (Yildiz-Akyol & Boyaci, 2020). Further, gender stereotypes have been found to be harmful to overall wellbeing (Lin et al., 2021), negatively influence (Culhane & Bazeley, 2019) and limit (Canessa-Pollard et al., 2022; Ramaci et al., 2017) career choices. However, there is limited research exploring associations between cognitive flexibility, gender stereotyping beliefs, and career aspirations and even less so within the context of Bermuda. The present study addresses this gap by focusing on the late adolescent population in Bermuda and investigating if there are any associations between these three variables.

Second, there is a gap in the literature exploring if cognitive flexibility could act as a significant factor for career aspirations and against the negative influences of gender stereotyping beliefs. The literature pays particular attention to the role gender plays in career aspirations, which has been well documented (Bian et al., 2017; Gutman & Schoon, 2012; Huang 2009; Miller & Hayward 2006). However, the contribution of gender stereotyping beliefs is less understood (Kollmayer et al., 2018). Currently, the effects of gender stereotyping beliefs appear to be largely featured in career aspirations literature focusing specifically on STEM careers (Edwin et al., 2019; Makarova et al., 2019) with less insight into the extent that gender stereotyping beliefs influence career aspirations generally with research pointing to conflicting results (Kimaro & Lawuo, 2016; Raffaele Mendez & Crawford, 2002). In addition, there are mixed results in the literature when exploring gender stereotyping beliefs and cognitive

flexibility with some research finding that a traditional view of gender stereotyping beliefs is associated with either an increase or a decrease in cognitive flexibility (Anderson, 1986), while contrasting research supports that the less a person identifies with a traditional stereotyping role the more cognitive flexibility they have (Bem 1975; Ginevra & Nota, 2017). There is even less research exploring cognitive flexibility with career aspirations, with only two studies found (Kercood et al., 2017; Yildiz-Akyol & Boyaci, 2020). This is important, as it is worth exploring whether cognitive flexibility could act as a significant and protective factor against the harmful effects of gender stereotyping beliefs or to influence higher career aspirations. This study addresses this gap by exploring if cognitive flexibility or gender stereotyping beliefs are predictive factors for the career aspirations of the adolescent student in Bermuda.

Lastly, from a methodological standpoint, a large majority of cognitive flexibility, gender stereotyping beliefs and career aspirations literature relies heavily on quantitative research. A limitation of a reliance on quantitative research when examining these human phenomena is the danger of providing only a narrow, reductionist approach in the literature. This study addresses this limitation by using a mixed methods design, which provides an opportunity for the research to collect authentic, lived experiences from Gen Z's, late adolescent students in Bermuda, an under researched population. This is especially important given that this generation is less motivated by money and prestige and more so with finding their dream job (Magano et al., 2020) and working for an organisation that aligns with their personal and organisational values (Bohdziewicz, 2016).

2.5 Research Questions

As a result of this literature review, three research questions emerged as relevant to this study:

RQ1 - What is the relationship between cognitive flexibility, gender stereotyping beliefs and career aspirations of 16- to 18-year-old late adolescents in Bermuda?

RQ2 – What factors predict career aspirations of the late adolescent in Bermuda?

RQ3 – What are students' perceptions and experiences of gender stereotyping beliefs and cognitive flexibility as they relate to their career aspirations?

2.6 Chapter Conclusion

This chapter provided both a historical and present-day view of the research context and the educational context of Bermuda. The second section offered the reader a critical review which examines the most relevant and significant literature available concerning cognitive flexibility, gender stereotype beliefs and career aspirations. This section also examined these variables separately and then explored the available literature for possible relationships. The chapter closes with the main gaps and limitations of the literature and the resulting three research questions which emerged from the review.

Chapter Three provides the reader with the philosophical and theoretical underpinnings of how this researcher will explore the research questions. In addition, a rationalisation for the mixed methods research design used with an explanation of why the convergent design (parallel variant) was chosen as the best fit for this study and the triangulation this design has provided. Finally, the relevant ethical considerations applicable to this study are discussed, along with variations and changes made to accommodate unanticipated issues.

Chapter Three – Methodology

3.1 Overview of Chapter Three

This chapter serves as a framework for this study and provides the reader with an understanding of how the research was conducted. This chapter also presents the less tangible, but more critical, philosophical underpinnings addressing why and how the research was conducted. From the onset, the research attempts to stay true to the philosophical tenet offered by Carr, “*to accept that philosophy and values cannot be expunged from educational research is not to concede that educational research cannot be a scientific pursuit*” (1995:88). As such, this chapter conveys how the study navigates between a pragmatist worldview, while being supported by a gender schema theoretical lens using a mixed methods research design.

Finally, this chapter will address ethical considerations. Particular attention is given to implications of the research within the geopolitical context of Bermuda and anonymity within the confines of a small island.

3.2 Research aims and research questions

This study aimed to expand our understanding of the career aspirations of late adolescents by exploring two cognitive processes: cognitive flexibility and gender stereotyping beliefs. Both quantitative (RQ1 & 2) and qualitative (RQ3) methods are used to explore the research questions.

Research question 1 (RQ1) – What is the relationship between cognitive flexibility, gender stereotyping beliefs and career aspirations of 16- to 18-year-old late adolescents in Bermuda? The surveys used in the current study allowed the researcher to explore the possibility of a positive or negative correlation between these three variables, and hypothesised that:

- If a student had high cognitive flexibility their career aspirations, in turn, would be higher and vice versa, a student with low cognitive flexibility would have lower career aspirations.
- Students who held more traditional gender stereotyping beliefs would have lower career aspirations, while students who perceived male and female roles as shared or equal responsibility would have higher career aspirations.
- If a student had high cognitive flexibility, they would perceive the male or female role as more shared or equal responsibility, while students with low cognitive flexibility would hold more traditional gender stereotyping beliefs.

Research question 2 (RQ2) – What factors predict career aspirations of the late adolescent in Bermuda? It was hypothesised that:

- Participants’ cognitive flexibility would be a predictor of their career aspirations.
- Participants’ gender stereotyping beliefs would be a predictor of their career aspirations.

Research question 3 (RQ3) - What are students’ perceptions and experiences of gender stereotyping beliefs and cognitive flexibility as they relate to their career aspirations? The semi-structured interviews allowed the researcher to explore the students’ attitudes, opinions and beliefs based on their perceptions and experiences of gender stereotyping beliefs and cognitive flexibility within the context of career aspirations. This research question also provided a greater understanding of what influences the career aspirations of Gen Z, a late adolescent student in Bermuda.

3.3 Philosophical (Worldview) Paradigm

Guba described a paradigm as “*a basic set of beliefs that guide action*” (Guba, 1990:17). For the purposes of this research, a paradigm will be referred to as a worldview. Creswell and Plano Clark (2018) provided a framework for identifying elements of worldviews which give context to implications for research practice. Their elements consisted of ontology, epistemology, axiology, methodology and rhetoric. In using Creswell and Plano Clark’s (2018) elements and implications, a best fit for the researcher and this research was the pragmatic philosophical worldview. To appreciate the philosophical underpinnings and given the research aim and questions, it was essential that from an ontological position, multiple realities and perspectives were sought and acknowledged. While the theoretical lens will be one of gender schema (Bem, 1981a), it is essential that at the heart of the research all perspectives and realities are allowed to be seen and heard. Epistemology describes the processes that we use to get to understand that reality (Bazeley, 2018). “*Practicality (“what works” to address the research question)*” (Creswell & Plano Clark, 2018:38) was essential in exploring the themes of cognitive flexibility, gender stereotyping beliefs and career aspirations within the target participant group of adolescents. Pragmatism is essentially the philosophical underpinning for a mixed method design with Onwuegbuzie and Leech arguing that, “*methodological pluralism should be promoted. The best way for this to occur is for as many investigators as possible to become pragmatic researchers*” (2005:381).

However, pragmatism was decided not solely because it lends itself so well to a mixed methods design, but it also views the research as occurring in not just the research setting, but within the context of historical, social and political settings (Creswell, 2009). Thus, pragmatism provides a theoretical framework which values and supports social justice aims (Creswell, 2009),

differing from a transformative worldview, which is primarily situated in social justice and human rights (Mertens, 2009).

Consequently, true to its social justice essence, Bem's (1981) gender schema theory will serve as the theoretical lens and will provide an oversight for the study. In managing this balance, the researcher took the "*bi-focal lens (i.e., both quantitative and qualitative data)*" (2005:383) analogy as used by Onwuegbuzie and Leech and has gone a step further to offer a progressive lens view, where there is a transformative hue mediating between both the quantitative and qualitative focus on the research question. In offering a progressive lens view of the research, the researcher was able to "*operationalise the social good*" (Onwuegbuzie & Leech, 2005:330) and values from a transformative paradigm and use it as a bridge between the philosophical worldview of pragmatism and the theoretical framework of gender schema theory.

3.4 Theoretical Framework

Gender schema theory (GST) is a cognitive development theory of how children process and learn what it means to be male or female within the context of gender stereotyping beliefs (Bem, 1981a). GST built on the concept of sex-typing, which is when a person acquires sex-related appropriate preferences, skills, personality attributes and self-concepts, which can largely be attributed to gender-schematic (or polarising) processing of the culture an individual is in (Bem, 1983). Bem's (1981a) theory essentially posits that sex-typing originates as our "self-concept ... gets assimilated to the gender schema" (p.354). This means that when a child is ready to encode and organise certain information, it will do so based on the cultural parameters of where the child finds themselves, depending on what it means to be a male or a female (Bem, 1983).

GST has developed over time to be frequently used as a general “*overarching framework*” (2017:569) and is often found in the literature as a study’s theoretical framework or in conjunction with a discipline specific theory (Starr & Zurbriggen, 2017). For example, GST is increasingly used in psychological research, as seen with present day issues such as mental health issues (Ozbay et al., 2020), gender diverse children (deMayo et al., 2022) and gender and disease (Longpre-Poirier et al. 2022). In addition, GST is being used to investigate other disciplines outside of psychology such as business and communication (Starr & Zurbriggen, 2017), as evidenced in business journals exploring board diversity (Furlotti, et al., 2019; Lewellyn & Muller-Kahle, 2020), marketing (Ye et al., 2019), and workplace perceptions beyond man/woman gender binary (Dray, et al., 2020). More recently, a literature search shows the extent that GST is being used in the information technology (IT) field (Baloglu et al., 2018; Lim et al., 2021; Tolbert & Drogos, 2019). These investigations using GST have the added advantage of highlighting the relevancy of this theory for use with Gen Z late adolescent students.

Thus, GST (Bem, 1981a) provides the theoretical framework which guides this study. This is especially relevant, as this study explores the influences of gender stereotyping beliefs on the late adolescent student and in particular on their career aspirations. GST allows for the depth and richness needed to complement a pragmatic worldview, while also honoring the historical and social backdrop in which half of the female, late adolescent population operate. In addition, GST provides this study with the value laden, transformative oversight to help address axiological concerns within the pragmatic context, which means that the pragmatic view that examines what works, will be guided by the axiological concern of what works for whom (Biddle & Schafft, 2015). It is from an axiological or value-laden role that the significance of a

gender schema theoretical lens supplies the values essential to capture the nuances and history that are ever present and are the essence of this research study.

3.5 Research Design

The study employed a mixed method design by utilising the quantitative research method of a survey and the qualitative research method of semi-structured interviews. The quantitative phase investigated RQ1 & 2, while the qualitative phase explored RQ3 and provided complementary data to view multiple perspectives of 16- to 18-year-old late adolescents and how cognitive flexibility and gender stereotyping beliefs influenced their career aspirations.

The mixed method design was deemed to be the best fit for this study because it allows for the most thorough exploration of the research questions with oversight to ensure that all participants are honoured when data is interpreted, and conclusions are made. For this study, the quantitative phase allows for the schoolwide data collection using surveys (RQ1, 2), which serves to provide insight into late adolescent students' understanding of career aspirations, gender stereotyping beliefs and cognitive flexibility. In addition to the quantitative data collection, the qualitative (interviews) phase allows for a smaller sample of the students surveyed to provide their experiences and perceptions (RQ3) through the use of interviews to give real life context to the variables.

By its very name, a mixed methods design provides the research with method triangulation. Triangulation can best be described as “*checking information that has been collected from different sources or methods for consistency of evidence across sources of data*” (Mertens, 2010:258). A significant advantage for this study, in using the mixed methods design, is the increased credibility it provides the study giving it a rich, contextual data source.

Triangulation allowed for the study's quantitative research (surveys) method to be contrasted and

compared against the qualitative research (interviews) exploring the experiences and perceptions of the participants.

The added advantage of using a mixed methods design is that the triangulation is in the form of two separate research methods: quantitative and qualitative. This creates a significant advantage for the research as it supports quantitative research with construct validity and qualitative research with credibility. However, ultimately, the practicality and suitability of a mixed methods design (Morrison, 2007) is the main rationale for using one for this present study. It offered the best of both worlds, allowing for the scientific rigor of quantitative research and the richness and texture of qualitative research packed within one design. Critically, using mixed methods provided this research study with two distinct data sources to better understand the research question (Creswell & Plano Clark, 2018) and then interpret the data.

3.5.1 Convergent Design (with a parallel-design variant)

The current study employed a convergent design with a parallel-design variant. This design was ideal as it allowed for flexibility when administering both the surveys and semi-structured interviews, accommodating two participants to arrive at the same time with one completing the survey while the other participating in the interview. In addition, for the vast majority of those participants who were only participating in the surveys, they were able to be independently administered, with the aid of Standardised Instructions (Appendix M) in the school setting.

The convergent method also facilitated a greater depth with data analysis, as the researcher made use of the parallel design variant to utilise more data and address the limitation of convergent designs. Convergent designs may present a problem when trying to merge two different samples and two different sample sizes (Creswell & Plano Clark, 2018). The study

addressed this issue by ensuring that all participants who took part in the semi-structured interviews, as mentioned above, also completed a survey. In addition, this research made use of the parallel-databases variant, meaning the surveys and the interviews were conducted and analysed in parallel with each other, but were brought together during interpretation (Creswell & Plano Clark, 2018).

3.6 Ethical Considerations

The ethics for this study were fully compliant with the rigor and standards as set by both Bristol University's Ethics Committee and The British Psychological Society's Code of Human Research Ethics. A SoE Research Ethics Form (Appendix A) was approved by the University of Bristol's Ethics Committee taking into careful consideration the geopolitical context in which the study was set. In addition, a confirmation email of ethics approval (Appendix B) was received before data collection. Key ethical considerations which were particularly relevant for the present study are presented in the sections below.

3.6.1 Researcher Access

Bermuda is a small, isolated island of 21 square miles, in the middle of the Atlantic Ocean. Our motto, *Quo Fata Ferunt* (whither the fates carry us) speaks to our fierce independence and adaptability as a small nation. However, as typical of small communities, gatekeepers are an integral fabric of Bermuda life. Acknowledging the small community within which the research context is set, trust was a critical element to secure access as described by the British Educational Research Association (BERA), "*Trust is a ... essential element within the relationship between researcher and researched*" (2018:5). As such, this study worked in close collaboration and engagement with the Ministry of Education in Bermuda, who are the ultimate gatekeeper for both the public and private secondary schools. Through discussion with the

Ministry of Education, it was agreed that the demographic data to be collected would be gender, age and public/private or alternative educational setting. This ensured that the study stayed true to the theoretical lens of GST. As a result of this collaboration, permission for the research was secured under the auspicious of a public/private partnership between the two school systems.

The next step was to secure participation from each secondary school through the school principal and their completing and returning the Principal's Consent Form (Appendix E). As a result, 7 out of the possible 8 school principals agreed to allow their students to participate in the research. Unfortunately, one of the public schools did not take part due to the beginning of the Covid-19 pandemic and subsequent lock down of schools for the remainder of the school year (March 2020). This research offers, for the first time, an opportunity to explore perceptions and influences on career aspirations from both the public and private school settings in the Bermudian context. Every effort has been made to secure a balance of gender and educational setting, to ensure, as much as possible, a sample that reflects the local context.

3.6.2 Anonymity and Confidentiality

Within the local context of this study, anonymity and confidentiality was critical. All interviews were held in a private room to ensure responses could not be overheard. In addition, an assurance of data protection, not just in accordance with the University of Bristol's regulations but also compliant with Bermuda's Personal Information Protection Act 2016 was adhered to. All raw data, once collected, was held at the researcher's office, at home, locked and anonymised. All electronic data was safely saved at the University of Bristol's password protected webserver only.

In addition, at the onset of administration of either the surveys or interviews, participants were reminded of their right to withdraw at any time and assured of the confidentiality of the results.

3.7 Chapter Conclusion

This chapter aimed to provide the reader with an understanding of the philosophical underpinnings supporting this study. A pragmatic approach has been offered, guided by a theoretical lens of GST. Justifications for using a convergent design, utilising a parallel design variant, from a mixed methods research approach was presented. The chapter concluded with a discussion of the strict ethical considerations this study rigorously adhered to providing the study with integrity and credibility in the local context.

The following chapter (Chapter Four) provides the methodology for the quantitative phase of this present study by providing a rationale for the use of the quantitative phase of the research and a description of the methods and methods of the data collection and data analysis.

Chapter Four – Surveys

4.1 Overview of Chapter Four

This chapter aims to provide a description of how the quantitative phase of this research was conducted within the mixed methods design. The chapter starts by describing the survey participants, including the sampling method and participant details. It then discusses the methods of data collection, justifying the use of surveys and describing the research materials, including demographic information and measurement instruments. A rationale and description for each research instrument is provided including the reliability and validity. The chapter provides an overview of the pilot study, concluding with a description of the method of data analysis and the scoring instructions for each research instrument and their respective subscales.

4.2 Survey Participants

4.2.1 Survey Participants Sampling Method

This study included both opportunity (or convenience) and volunteer sampling. Both methods were chosen by the researcher as the best means to reach as many participants as possible while making the most efficient use of time. In terms of the opportunity (or convenience) sampling technique each secondary school that agreed to take part in this study was provided with a package of Parental Consent Form - Survey (Appendix F) for every student in the school between the ages of 16 and 18 years. Students could opt out, Parent Consent Forms – Survey amended (Appendix G) if they did not want to participate. The second sampling method used was volunteer sampling, with participants volunteering through friendships or connections the researcher had with the participants' parents or the participants themselves. The volunteer participants and/or their parents were provided with a Parental Consent Form – Survey (outside of school) (Appendix H) and were administered the surveys at a prearranged setting mutually

agreed between the researcher and the parents (if under the age of 18 years) or if participants were 18 or over, they were given the Participant Consent Form (Appendix K).

4.2.2 Survey Participant Details

Three hundred seventy-seven participants took part in the study from a target population of late adolescents between the ages of 16- and 18-years-old. Six of the participants completed less than 75% of the survey and were excluded from the study. Thus, the final sample consisted of 371 participants. Participants included 214 (58%) female and 157 (42%) male participants. Ages ranged from 16- to 18-years, with 166 (45%) 16-year-old, 182 (49%) 17-year-old and 23 (6%) 18-year-old students. Data was collected from six out of a possible eight secondary schools and one alternative education setting located in the islands of Bermuda. Educational settings consisted of 148 (40%) public school students, 217 (58%) private school students and six (2%) students from an alternative setting. The alternative education setting was a non-profit school for students aged 16 years through adulthood working towards their General Education Diploma.

4.3 Methods of Data Collection

A survey was used for the quantitative phase of this study to address the two research questions below:

RQ1 - What is the relationship between cognitive flexibility, gender stereotyping beliefs and career aspirations of 16- to 18-year-old late adolescents in Bermuda?

RQ2 – What factors predict career aspirations of the late adolescent in Bermuda?

4.3.1 Surveys

A survey best provided the researcher with a reliable instrument to collect quantifiable data in relation to the variables under investigation for a sample population of students within the

16 to 18-year-old age range. Surveys provided insight into relationships between the variables of cognitive flexibility, gender stereotyping beliefs and career aspirations and allowed for an exploration of the predictive power of cognitive flexibility and gender stereotypes on career aspirations.

4.3.2 Research Materials

After an extensive literature review, a rigorous and considered approach was used to select the most appropriate instruments to address the two research questions. The research instruments chosen were Career Aspirations Survey- Revised (Gregor & O'Brien, 2016), Gender Role Stereotypes Scale (Mills et al., 2012) and Cognitive Flexibility Inventory (Dennis & Vander Wal, 2010)

In addition, an ad hoc questionnaire, Participant Survey (Appendix L), was developed and divided into four parts: demographic information (gender, age, date of birth and school setting) and an amalgamation of all three surveys separated into Part A (Cognitive Flexibility Inventory), Part B (Gender Role Stereotypes Scale), Part C (Career Aspirations Survey-Revised).

4.3.2.1 Demographic Information

Students were asked to respond to the following questions: gender, age, date of birth and school setting. The information was open, allowing the student to write what they chose as opposed to categories. This provided the student with the opportunity to identify with their own interpretation of the question regarding gender.

It should also be noted, as previously explained (see section 3.5.1 & 8.6) that the racial and ethnic demographic of the students was not collected.

4.3.2.2 Part A – Cognitive Flexibility Inventory (CFI)

The CFI was chosen because it was a subjective self-report, offering a reliable two-factor structure, which measured a participant's ability to overcome and adapt to new and challenging circumstances (CFI, Dennis & Vander Wal, 2010). The CFI consists of 20 declarative statements targeting beliefs, feelings and attitudes, in which the participant reports the degree to which they agree or disagree with the statements. Questions such as, "*I often look at a situation from different viewpoints*" or "*I feel I have no power to change things in difficult situations*" measure the degree of rigidity or flexibility of the participants. A 7-point Likert scale with response options which range from strongly disagree (1) to strongly agree (7) provides a range of choice to determine a participant's cognitive flexibility.

CFI required reverse scoring of selected items to be categorised into two subscales and a summing up of the total items to which the participant responded. The subscales are as follows: Factor 1: Alternatives (Items 1, 3, 5-6, 8, 10, 12-13, 14, 16, 18-20) and Factor 2: Control (2*, 4*, 7*, 9*, 11*, 15 & 17*) with negatively worded items* reverse coded and the score of each subscale totaled. The subtests may be combined to represent a Total Cognitive Flexibility score (Total CF score). Dennis and Vander Wal (2010) predicted that higher scores indicate a greater degree of cognitive flexibility, "*which was ... associated with greater cognitive adaptability when encountering stressful situations*", while a lower score is attributed to increased cognitive rigidity, "*which was ... associated with less cognitive adaptability when encountering stressful situations*" (2010:245).

The CFI was used in this study because it provided a self-report that was most closely aligned with the aim of this research. In addition, it differentiates itself from other cognitive flexibility scales as the lower CFI score measures the degree of cognitive rigidity of a participant

and indicates that they are more likely to use maladaptive coping styles, while a higher CFI score measures the degree of cognitive flexibility and that they are more likely to use adaptive coping styles (Dennis & Vander Wal 2010). Significantly, the CFI correlated with the Beck Depression Inventory – II (BDI-II; Beck et al., 1996), indicating that the greater the cognitive rigidity a person reported the increased depressive symptoms were reported on the BDI-II (Dennis & Vander Wal, 2010), thus helping to support cognitive flexibility as a protective factor which may influence a change in behavior. In addition, the CFI differentiates itself from other self-report scales (CFS; Martin & Rubin, 1995) by offering a reliable two-factor structure: the Alternatives (the ability to perceive multiple alternative explanations for life's occurrences and the ability to generate multiple solutions to difficult situations) and Control (the ability to perceive difficult situations as controllable).

CFI was originally developed using a target population of 196 undergraduate students from a midwestern, American university. The mean age of the students was 20.20, \pm 1.5 years, 75% of which were females. The validity was supported through positive correlations with another subjective self-report for cognitive flexibility (Cognitive Flexibility Scale; Martin & Rubin, 1995) and coping (Ways of Coping Checklist-Revised; Folkman & Lazarus, 1985). Test-retest reliability scores, conducted across Time 1 and Time 2, for the unidimensional measure were acceptable at .81 and .75 (*Alternatives*) and .77 (*Control*) for the subscales. Cronbach's alpha for the CFI (Time 1 = .90; Time 2 = .91), *Alternatives* subscale (Time 1 = .91; Time 2 = .91), and *Control* subscale (Time 1 = .86; Time 2 = .84) (Dennis & Vander Wal, 2010). In addition, CFI has been tested for reliability and validity and translated into Iranian (CFI-I, Shareh, Farmani and Soltani 2014), Russian (CFI-R, Kurginyan and Osavolyuk 2018), Italian

(Portoghese et al., 2020) and most recently, Indonesian (Rahayu et al., 2022) supporting the generalisability of this tool across diverse cultures and ethnicities.

In this present study, the Cronbach alpha coefficient for the unidimensional measure was acceptable at .85 and .87 (*Alternatives*) and .79 (*Control*). The mean score for the Total CF score was 102.36 ($SD = 13.36$), mean score for the *Alternatives* subscale was 68.85 ($SD = 9.7$) and the mean score for the *Control* subscale was 33.51 ($SD = 7.00$). In this present study, the mean score and standard deviation for the Total CF score and *Alternatives* was similar to that of the original study, while the *Control* score was slightly lower than the original. Further information concerning the original development of CFI can be found in Appendix N.

4.3.2.3 Part B - Gender Role Stereotypes Scale (GRSS)

The GRSS was chosen because it was felt that it was the most relevant in representing Gen Z' views and attitudes towards his/her gender role stereotyping biases (Mills et al., 2012). The GRSS is a brief self-report consisting of eight declarative statements assessing perceptions of gender role stereotypes. It was developed as a two-factor model in which four stereotypically masculine tasks (items 1, 3, 4, 8), such as sample item “*propose marriage*”, representing the traditional masculine role factor, while four stereotypically feminine tasks (items 2, 5, 6, 7), such as sample item “*wash, fold and put away laundry*”, representing the traditional feminine role factor (Mills et al., 2012). The GRSS uses a 5-point Likert scale which represents the degree to which the person believed the statement. Examples of response options ranges from *should always be done by the man* (1), *equal responsibility* (3), and *should always be done by the woman* (5). Each participant receives both a male stereotype and a female stereotype score which reflects their attitude towards both the male and female gender role. When a participant scores high, they are considered to identify with a more traditional feminine stereotype role, and if an

individual scores low, they are considered to identify with a more traditional masculine stereotype role. When an individual scores close to 3.0, they are considered to believe that either the male or female (or both) stereotype is reflective of a more shared or equal responsibility gender role.

GRSS requires scoring of selected items to be categorised into two subscales (Male and Female Stereotype) and a summing up of the four items from each subscale and then calculating the mean score for each. The subscales are as follows: Male Stereotype Scale: (Items 1, 3, 4, 8) and Female Stereotype Scale: (2, 5, 6, 7). A lower score on the male stereotype scale represents a more traditional, male gender role stereotype while a higher score for the female stereotype subscale represents a more traditional, female gender role stereotype. A mean score of 3.0, represents a view of equal or shared responsibility of roles (Mills et al., 2012).

It is important to note that GST helped to provide this study with its theoretical lens, the Bem Sex Role Inventory (BSRI, Bem, 1974) was not the tool chosen to measure gender stereotyping beliefs. The BSRI (Bem, 1974) measures the two independent dimensions of masculinity and femininity and reflects the way an individual describes themselves as relevant to perceived desirable standards of behavior for men and women. While this tool of measurement has stood the test of time and is still commonly used today, there were a number of concerns, for its use in the current study, including, dated items that are no longer relevant for modern gender stereotypes (Colley et al., 2009; Donnelly & Twenge, 2017) and questions concerning construct validity between some of the definitions used (Starr & Zurbriggen, 2017).

In contrast, GRSS was identified to use in this study because it is more readily adapted to embrace the complexities of gender in a modern age, and a better fit for the Gen Z student. For example, the GRSS has been used to provide a tool to measure the degree to which a person

identified with a traditional binary view of gender roles (Greenburg & Gaia, 2019) and explore gender role stereotypes in humanoid robots (Parlangelli et al., 2022). GRSS provides a modern and updated measurement of gender role attitudes, viewing gender as two-factor, inclusive of not one (female) or the other (male), but both, and thus provides an alternative measurement to the more traditional or outdated (Gender Role Beliefs Scale, Kerr & Holden, 1996) inventories and scales. GRSS differentiates itself from other scales, by measuring attitudes towards both men and women, as opposed to men, (Status Norm Scale, Thompson & Pleck, 1986) or women separately (Attitude toward Women Scale, Spence et al., 1973). The GRSS also measures the perception of a stereotype as opposed to the perception of a gender norm, and finally, the GRSS focuses specifically on gender role stereotypes versus gender stereotypes (Mills et al., 2012).

GRSS (Mills et al., 2012) was developed using 800 American undergraduate students (Appendix N). The mean age of the students was 19.34 and had approximately 64% females to 36% males in their original sample with little ethnic diversity. Construct validity was established through correlating the GRSS with other relevant measures such as the Attitudes toward Women Scale (Spence et al., 1973), the Status Norm Scale (Thompson & Pleck, 1986) and the Sexual Harassment Attitudes Scale (Mazer & Percival, 1989), which all indicated good construct validity. Test-retest reliability scores for the unidimensional measure were acceptable at .80 and approaching acceptability for the two subscales (Mills, et al, 2012). Cronbach's alpha coefficient (α) of the Male Stereotype Scale was .64 and for the Female Stereotype Scale .72, with an adequate internal consistency for scales with fewer than 10 items, generally accepted at an alpha coefficient of .5 or over (Pallant, 2016). A later study by Greenburg and Gaia (2019) examining predictors of attitudes towards transgender individuals, 110 undergraduates with a mean age of

19.73 years of age, also established acceptable internal consistency with .80 and .71 for the Male and Female Stereotype Scales respectively.

In this current study, the Cronbach alpha coefficient was .65 for the Female and .78 for the Male Stereotype Scales. For the two-factor gender role stereotypes, the mean score for the Male Stereotype was close in approximation with the midpoint of the scores ($M = 2.29$, $SD = .56$; Median = 2.25), with scores ranging from 1 to 4. The mean score for the Female Stereotype was slightly off the midpoint of the scores ($M = 3.23$, $SD = .35$; Median = 3.00). Scores ranged from 2.25 to 5. In this present study, the male stereotype gender role reflected somewhat of a more traditional attitude or bias towards the male stereotypical gender role, while the female stereotype reflected attitudes that were closer to a shared or equal responsibility.

4.3.2.4 Part C - Career Aspirations Survey – Revised (CAS-R)

The CAS-R (Gregor & O'Brien, 2016) was chosen because it most closely aligned with the theoretical approach of the present study, developed using the Expectancy-Value Theory (Eccles, 1994; 2011) and measuring the views and attitudes a person has towards their career aspirations. The CAS-R is inclusive of leadership (aspiring to leadership or positions of influence), achievement (aspiring to be the best in the field and recognised for their work) and education (aspiring to further education and competency) aspirations (Gregor & O'Brien, 2016).

The CAS-R is a brief self-report of 24 declarative statements assessing career aspirations with three subscales, each with 8 statements. The subscales include Leadership (items 1, 2, 4, 5, 7, 12, 15, 24), sample item; "I hope to become a leader in my career field", Achievement (items 3, 8, 9, 13, 17, 20, 21, 22), sample item; "I want to become the very best in my field" and Education (6, 10, 11, 14, 16, 18, 19, 23), sample item; "I plan to reach the highest level of education in my field". A five-point Likert scale is used, which represents the degree to which a

person believes the statement to be true. Response options ranged from Not at all true of me (0) to Very true of me (4). A participant who scores a high total score is considered to have high career aspirations while a high subscale score indicates high aspirations in the relevant subscale, for example, a high score in the Leadership subscale means high leadership aspirations. CAS-R requires item numbers to be categorised into one of the three subtests, as follows: Factor 1: Leadership Aspirations (Items 1, 2*, 4*, 5, 7, 12*, 15, 24), Factor 2: Achievement Aspirations (3, 8, 9, 13, 17, 20*, 21, 22*) and Factor 3: Educational Aspirations (6, 10, 11, 14, 16, 18, 19, 23) with negatively worded items* reverse coded and the score of each subtest totaled. The subtests are then combined to represent the Total Career Aspirations score. A higher Total Career Aspiration score indicates a higher level of career aspirations (Gregor and O'Brien, 2016).

The CAS-R was chosen as the most relevant scale for this study as it was originally developed (O'Brien, 1996; Gray & O'Brien, 2007) and revised using only females and later normed with males (Gregor et al., 2017), thus staying true to this study's commitment to use a gender schema theoretical lens. In addition, the CAS-R was developed using the theoretical approach of the Expectancy Value Theory, which is the approach used for this study when operationalising career aspirations.

The original Career Aspirations Survey (CAS: O'Brien, 1996) was developed using 282 adolescent women in their last year of an all-female private high school, with a mean age of 17.28 (SD = .49) (Appendix O). The original CAS was designed to "assess the degree to which individuals not only valued their careers, but also aspired to leadership positions within their careers" (1996:264). Interestingly, the original sample bears a striking resemblance to the pilot for this study, of an all-female private high school with a similar mean age. CAS was revised to the CAS-R (Gregor and O'Brien, 2016) using three separate studies with a total of 583

undergraduate and graduate students from a large, mid-Atlantic university with little ethnic diversity. Students' ages, across the three studies, ranged from $M = 19.52$ ($SD = 1.82$) to $M = 28.11$ ($SD = 4.78$). Further information can be found in Appendix M.

The validity was supported through positive correlations with work role salience, Work Role Salience Scale-Short Form (WRS; Greenhaus, 1973) and achievement motivation, Work and Family Orientation Questionnaire (WOFO; Spence & Helmreich, 1983). Test-retest reliability scores conducted across Time 1 and Time 2 were not reported for the unidimensional measure but were acceptable at .68 (Achievement), .81 (Leadership) and .81 (Education) across the three subscales. Similar to the test-retest reliability score for the unidimensional measure, the Cronbach's alpha score was not reported for the CAS-R score (Time 1 or Time 2), Achievement subscale (Time 1 = .74; Time 2 = .80), Leadership subscale (Time 1 = .79; Time 2 = .82) and Education subscale (Time 1 = .87; Time 2 = .84) (Gregor & O'Brien, 2016).

The CAS-R has repeatedly demonstrated good psychometrics and has been scaled for use in South Korea (Kim, O'Brien and Kim 2016), normed to include males (Gregor, O'Brien and Sauber 2017), both male and female medical students in Pakistan (Zahid, 2019), and most recently with male and female students from a diverse community college in the US (Gregor, et al. 2020). The test-retest reliability for CAS-R exhibited adequate reliability with the validity of the subscales "supported through positive correlations with work role salience and achievement motivation" (Gregor & O'Brien, 2016:567).

In this present study, the Cronbach alpha coefficient for the unidimensional measure was acceptable at .89 (.896), .70 (*Achievement*), .80 (*Leadership*) and .86 (*Education*). The mean score for the Total Career Aspirations score was 72.31 ($SD = 14.21$), mean score for the *Achievement* subscale was 25.78 ($SD = 4.69$), mean score for the *Leadership* subscale was 23.59

($SD = 6.09$), and mean score for the *Education* subscale was 22.92 ($SD = 5.94$). A high score represents the degree to which a person aspires to a leadership role, is willing to advance their education and seek recognition in their future career (Gregor et al., 2017). Further information concerning the original development of CFI can be found in Appendix N.

4.4 Pilot Study

The Participant Survey (Appendix L) was piloted by the researcher on 13 participants, during two different testing sessions. A pilot study serves to ensure that not only do the survey questions flow but that the research instrument works well while conducting the research, giving the researcher the opportunity to get feedback and revise if needed (Bryman, 2012). The first administration consisted of girls who were in Term 1 of their final year of their sixth form (16- and 17-years of age). The second administration was conducted with girls in the beginning of their first year of sixth form (aged 16). The pilot was implemented in September 2019, before data collection for the main study began. The target population was recruited from a sample of opportunity of students from the researcher's International Baccalaureate (Year 12 & 13) psychology classes using the opportunity (or convenience) sampling method. The students all attended a private, girls' school where the researcher is employed.

Thirteen participants were read the Standardised Instructions (Appendix M) and then administered the Participant Survey (Appendix L). The administration of the Participant Survey (Appendix L) took between ten and fifteen minutes. The pilot test participants were asked to give their feedback on all aspects of the administration and completion of the Participant Survey (Appendix L) in an open classroom forum and encouraged to share any questions, concerns or general feedback. As a result of pilot participants' feedback, one question was amended on the Cognitive Flexibility Inventory (CFI; Dennis & Vander Wal, 2010) section of the survey.

Question 1, on the CFI read, “*I am good at sizing up*” situations, it was found that the expression “*sizing up*” caused confusion from participants and needed clarification. As a result, the question was changed to read, “*I am good at carefully thinking about a situation before I decide how I should act*”. Another change which was made as a result of the pilot, was at the start of the questionnaire, where demographic items were asked, a line was left blank called “*ID Number*”. This item was to be used for administrative purposes, as identification numbers for each participant were assigned. However, this item was deleted to avoid confusion by the participants. Finally, a typo was corrected on the survey. No concerns were reported by the pilot participants about the length of the survey.

4.5 Procedure

Data was collected over a six-month period from September 2019 to March 2020. A Principals’ Consent Form (Appendix E) was obtained from six secondary schools, with a seventh received verbally, out of a total of eight secondary schools in Bermuda. In addition, consent was obtained from the Executive Director of one alternative education setting, which participated in the study.

The implementation of this study was managed over three phases. Principal Consent Forms (Appendix E) were sent out in three phases, as the researcher wanted to adequately manage the process around employment commitments. In addition, the first school approached was the researcher’s place of employment and the site for the pilot of both the surveys and the interviews. Parental consent for the surveys were sought using the Parental Consent Form – Survey (Appendix F) and Parental Consent Form – Interviews (Appendix I). It was quickly noted that the return of Parental Consent Forms for the surveys was delayed. Students indicated that they wanted to participate but, as a result of all their other priorities, consent forms were

frequently not returned. As such, and after consultation with the researcher's primary dissertation supervisor, it was agreed that the Parental Consent Form would be amended to an "opt out" option (Appendix G). As a result, students between the ages of 16 and 17 years would only need to return the Parental Consent form if they or their parents decided not to participate in the study.

In addition, after Phase 2 was implemented and an additional three principals were invited to join the research, a significant delay occurred in receiving permission to conduct the study in the schools. As a result, letters for both the survey and interview were amended to target those students or parents personally known by the researcher. The amended letters were only changed to reflect that the survey (Appendix H) or interview (Appendix I) was not taking place within the school setting or with school approval. The amended letters still reflected that the Ministry of Education in Bermuda had granted permission for the research to be conducted. For those interviews and surveys conducted outside of the school, a prearranged time and place was agreed with the individual student and/or parent. A process of following up with school principals was implemented with a return rate of permissions of 3. Phase 3 of the invitations took place in a much more strategic fashion, with the researcher seeking out introductions to school principals or another point of contact within the school to advocate for school participation. Future research within the Bermudian context could be approached more strategically, with the many layers of gatekeepers contacted well in advance.

The Participant Surveys (Appendix L) were delivered to each school and were administered through pen and paper survey format, during the school day, at a time convenient to the individual school. Standardised Instructions (Appendix M) were provided to each person administering the survey, which required them to read the instructions out loud to the participants. Participant Surveys (Appendix L) were also administered during individual sittings

with the survey administered in conjunction with the semi-structured interview using the Interview Guide (Appendix O). Surveys took approximately 15 minutes whether in a group or individual format. In addition, outside of the school setting, family and friends of the researcher also referred late participants between 16 and 18 years old. As a result, six additional students volunteered outside of their school setting, representing one additional secondary school and one home school.

4.6 Method of Data Analysis

The data were analysed using the Statistical Package for Social Science (SPSS), Version 27. Descriptive statistics were initially reported to present the means, standard deviations (*SD*) and range of the variables under investigation, namely cognitive flexibility, gender stereotyping beliefs and career aspirations.

Following this, correlations were used to measure relationships between variables. The Pearson's correlation method was used when conditions of normality were met, and the Spearman Rank correlations were used when conditions of normality were not met.

Finally, a standard multiple regression was used to explore whether gender stereotyping beliefs and/or cognitive flexibility could be a predictor for career aspirations.

4.6.1 Analysis of Career Aspirations Survey – Revised (CAS-R)

Research Question 1, exploring the relationship between cognitive flexibility and career aspirations was tested using the Pearson's correlation method as a result of the conditions of normality being met. In order to explore the relationship between gender stereotyping beliefs and career aspirations, the Spearman Rank method was used as conditions of normality were not met, indicating there were extreme values in the data set.

Research Question 2, a standard multiple regression was used when exploring what factors predict career aspirations of the late adolescent in Bermuda. The two subscales of cognitive flexibility (Control and Alternatives) and Male and Female Stereotypes were entered in the regression model as independent variables and career aspirations as the dependent variable.

4.6.2 Analysis of Gender Role Stereotypes Scale (GRSS)

Research Question 1, exploring the relationship between gender stereotyping beliefs and career aspirations was tested using the Spearman Rank correlations as conditions of normality were not met, indicating there were extreme values in the data set. In addition, exploring the relationship between cognitive flexibility and gender stereotyping beliefs was tested using the Spearman Rank correlations as conditions of normality were not met, indicating there were extreme values in the data set.

Research Question 2, a standard multiple regression was used when exploring if gender stereotyping beliefs predict career aspirations of the late adolescent in Bermuda. Male and Female Stereotypes were entered in the regression model as independent variables and career aspirations as the dependent variable.

4.6.3 Analysis of Cognitive Flexibility Inventory (CFI)

Research Question 1, exploring the relationship between cognitive flexibility and career aspirations, was tested using the Pearson's correlation method as a result of the conditions of normality being met. In addition, exploring the relationship between cognitive flexibility and gender stereotyping beliefs was tested using the Spearman Rank correlations as conditions of normality were not met, indicating there were extreme values in the data set.

Research Question 2, a standard multiple regression was used when exploring if cognitive flexibility predicts career aspirations of the late adolescent in Bermuda. The two subscales of cognitive flexibility (Control and Alternatives) and Male and Female Stereotypes were entered in the regression model as independent variables and career aspirations as the dependent variable.

4.7 Chapter Conclusion

This chapter provided a description of the rationale for the use of surveys for this research. In addition, an overview of the research questions and their corresponding hypotheses was presented. The chapter went on to discuss the methods and materials used in the study while an in-depth description of each of the materials used for data collection was provided. The pilot study was described, and details of changes made to individual surveys as a result of feedback from participants were reported. Lastly, a description of the method of data analysis used in the current study was reported.

In Chapter Five, the reader is introduced to an overview of the semi-structured interviews, which is provided alongside the method of data analysis used.

Chapter 5 - Semi-Structured Interviews

5.1 Overview of Chapter Five

Chapter Five provides the reader with an understanding of how the qualitative phase of this research was conducted using the mixed methods design. The chapter starts by describing the interview participants, including sampling method and participant details. The method of data collection then presents the research question followed by a description of the semi-structured interviews and the development of the Interview Guide (Appendix O). The pilot interview and the development of the Self-Reflexivity Guide (Appendix P) is discussed. The method of data analysis is then presented, and the use of thematic analysis is explained and described within the context of this study.

Chapter Five also explores the study's trustworthiness and credibility using method triangulation, member checking and researcher reflexivity.

5.2 Interview Participants

5.2.1 Interview Participants Sampling Method

There were two forms of sampling techniques used to recruit participants for the semi-structured interviews: volunteer sampling and snowball sampling (Bryman, 2012). Participants who took part in the surveys were also offered the opportunity to take part in the semi-structured interviews. Participants who agreed to participate in the interviews also recruited their friends.

5.2.2 Interview Participant Details

A target population of late adolescents between the ages of 16 and 18 years old and attending a secondary education setting were identified to take part in this phase of the study. Participants were recruited as follows: four females from a same-sex, private secondary school;

four females from a co-educational public secondary school setting (representing the two public schools in Bermuda); four females from a private co-educational secondary school; four males from a private co-educational setting; and two males from an alternative setting. Unfortunately, consent forms from three males from a co-educational, public secondary school had been received to participate in the study; however, a national lockdown in Bermuda, because of the Covid-19 pandemic, prevented the interviews from taking place. It should be noted that schools did not reopen until the new school year in September 2020.

In total, the data was collected from students representing seven secondary (five private, two public) schools, out of a possible eight, and two home school settings during term 1 and 2 of the 2019 – 2020 academic year. In total, there were 12 (67%) female and 6 male (33%) students who participated in the semi-structured interviews.

5.3 Methods of Data Collection

A semi-structured interview was used for the qualitative phase of this study to address the research question below:

RQ3 - What are students' perceptions and experiences of gender stereotyping beliefs and cognitive flexibility as they relate to their career aspirations?

5.3.1 Semi-Structured Interviews

Semi-structured interviews enabled the study to capture a more holistic understanding of participants' experiences (Morrison, 2007). There were two over-arching reasons why semi-structured interviews were used for this study.

The first was to create a space for the student's voice to be heard allowing each participant to be treated as a unique respondent (Bush, 2007). The surveys described in Chapter

Four provided a systematic and structured exploration of the variables. However, the use of semi-structured interviews allowed the researcher to explore participants' lived experiences, allowing for the participants' perceptions and experiences to emerge. The semi-structured interviews added nuance and context to the investigation of RQ3.

The second was the importance of allowing room for gender stereotyping beliefs to surface, which perhaps had not yet been recognised as such by the participants. The perspective of a gender schema lens allowed for a more subjective understanding of the participants and for the study to uncover attitudes, beliefs or values that may still be hidden from the student (Hesse-Biber 2006). In addition, the semi-structured interviews allowed for participants' subjective values, in line with Expectancy-Value Theory (Eccles, 1994; 2011), to provide context for participants' career aspirations. Unlike a structured interview, which is viewed as traditional and paternalistic (Punch, 2004), semi-structured interviews allowed the voices of all participants to be heard.

5.3.2 Development of Interview Guide

The Interview Guide (Appendix O) was developed by first identifying the variables investigated in the present research: career aspiration, gender stereotyping beliefs and cognitive flexibility. Using the surveys as a basis, the themes from each survey were transformed into open-ended questions, providing the interviewee with an opportunity to elaborate further on the three variables. The questions were designed to allow the participants to personalise their responses and provide examples from their own life experiences. The benefit of these questions allowed the interviewee to become more reflective of their own personal attitudes, values and beliefs, which provided a much richer and deeper context to the themes under investigation. In addition, personalised questions allowed for the interviewee to convey their own lived

experience, thus providing the research with an authenticity that could not be captured with data collected from the closed-ended questions used in the surveys. The Interview Guide (Appendix O) also provided the interviewee with the opportunity to give feedback on other factors, not captured in this study, but which may be identified as influencing career aspirations.

For ease and clarity, the Interview Guide (Appendix O) was divided into sections, capturing each variable under investigation. Section I captured demographic information of the participants, Section II explored participants' experiences and perceptions of cognitive flexibility, Section III asked questions relating to a participant's gender stereotyping beliefs and Section IV explored the experiences and perceptions of a participants' career aspirations. The sections started off with open-ended questions designed to set the scene and draw out the interviewee's perceptions and experiences relevant to each variable. In addition, the Interview Guide (Appendix O) encouraged the participants to end each section with a reflection of how the theme pertains personally to the interviewee. As a result, the researcher was provided with a very rich description and context of each participants' perceptions and experiences of the variables.

5.4 Interview Pilot

A pilot study was conducted during September 2019, before data collection began. One student was recruited from a volunteer sample of students, whom the researcher taught in an International Baccalaureate Year 13 class. The school is a same-sex, girls' private school. The female student was 16 years old and will be referred to as Pilot 001. Pilot 001 read the standardised instructions and gave verbal consent for the interview to be taped. The interview was taped on the researcher's IPAD, using the voice recorder app. In addition, the interviewer also took notes during the interview.

After the interview was completed, the researcher debriefed the interviewee, sharing the research aim. The interviewee was then given the chance to add anything additional to the interview, now that they were aware of the research purpose. The interviewee responded that she felt that “*peer group has an influence on your career aspirations...like my friends, personally I am very thankful for them because they all have good goals and aspirations...so that makes me want to do better as well*”. The interviewee was then asked if there was anything else that she would like to add or get clarified, to which she confirmed there was nothing further.

As a result of the pilot, there were no amendments or revisions made to the actual Interview Guide (Appendix O), however the standardised instructions were amended to correct wording in two cases to make the directions clearer. In addition, as a result of the interviewee personally knowing a number of the students or their parents, changes were made to the Self-Reflexivity Guide (Appendix P). An additional question was added in order to establish the relationship between interviewer and the interviewee (“*My relationship to the interviewee is?*”). This served to acknowledge the power relationship that the interviewer may have had with the interviewee and consider what, if any influence, there may have been.

5.5 Procedure

Semi-structured interviews were administered either before or after the administration of the Participant Survey (Appendix L) in a single session. Parental Consent Form (Appendix I or H) or Participant Consent Forms (Appendix J) were either obtained directly from the school or the interviewee brought them when they came for the interview. All interviews were held at either the participant’s school, the researcher’s place of employment or at the participant’s home as arranged by a parent. Data was collected over a five-month period from September 2019 to March 2020 in parallel with the quantitative research.

The interviews took 10 to 20 minutes. All interviews were recorded electronically using a digital voice recorder, Olympus WS-852. Before the interviews began, all participants were read the standardised instructions from the Interview Guide (Appendix O), which included confirming informed consent, the right to withdraw at any time and right to withdraw the interview up to two weeks from the data being collected. Following that, a definition of cognitive flexibility was read out and the interviewee was asked to confirm if they needed further clarification. At the conclusion of the interview, participants were debriefed, meaning they were informed what the research aim for the study was and given the opportunity to add or change their responses. Finally, all participants were thanked for their time and participation in the study.

5.6 Method of Data Analysis

This study used thematic analysis, created by Braun and Clark (2006) to analyse semi-structured interviews. Braun and Clark (2006) define thematic analysis as essentially the process of identifying patterns within qualitative data. To support the use of thematic analysis, Braun and Clark (2006) developed a system of phases (Table 2) to provide the researcher with a more accessible and flexible approach to analysing qualitative data.

Table 2

Phases of Thematic Analysis (Braun & Clarke 2006).

Phase	Description of the process
1. Familiarise yourself with your data:	Transcribing data, reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all relevant data to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic ‘map’ of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names of each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

All interviews were initially transcribed using either the speech-to-text option in Google Docs or the computer assisted qualitative data analysis software, NVIVO 10 (password protected). Both methods were only used as an initial data management source. Primary transcription was done by the researcher for each interview, through careful word-by-word transcription from the voice recorder onto a word document. Upon completion, the researcher then used the Self-Reflexivity Guide (Appendix P) and journaled each interview.

The coding for each transcript took place after the journal entry was completed for each interview. As a result, coding was done shortly after the transcription and the journal entry, while

the interview was fresh. As the coding of interviews was completed, patterns began to emerge, and potential themes were flagged. As themes began to solidify, a working thematic map was developed (Table 12). Once the transcriptions were completed, themes and subthemes were defined and finalised with a separate column to reflect examples of quotes. The process was very organic and relied heavily on a participant's voice (quotes) to guide the process.

5.7 Trustworthiness and Credibility of the Research

While the use of surveys helped to provide this study with reliability, the semi-structured interview supported the trustworthiness and credibility of the study findings. Credibility, in qualitative research, speaks to how confident the researcher can be in the findings of the research. This researcher continually challenged the results asking, what is the truthfulness (Lincoln & Guba, 1985) and trustworthiness (Tracy 2010) of the findings. Consequently, three strategies were used to support the credibility of this research: method triangulation, member checking and reflexivity.

5.7.1 Method Triangulation

Method triangulation provided this researcher with the opportunity to explore the truthfulness of the data. Method triangulation requires the researcher to compare at least two sources of data collection from different methods to explore the same research questions (Bush, 2007). In this study, surveys were used as a complementary research method of data collection to the semi-structured interviews and provided this researcher with a lens to view multiple angles and obtain a deeper understanding of the research questions (Tracy, 2010).

5.7.2 Member Checking

To ensure that the findings can be trusted, member checking was used to support the credibility of the qualitative phase. Member checking consisted of a sample of four participants who were provided a transcript of their interview via email. The participants were asked to review the transcript and given 5 days to confirm that it accurately reflected their interview. The participants all confirmed the transcript's accuracy and one of the participants provided additional information pertaining to the questions.

5.7.3 Researcher Reflexivity

Researcher's reflexivity can best be described by Lincoln and Guba (1985) as, "*The process of critical self-reflection about oneself as researcher (own biases, preferences, preconceptions), and the research relationship (relationship to the respondent, and how the relationship affects participant's answers to questions)*" (p.121). Thus, for this researcher, reflexivity provided an opportunity to not only reflect on my own attitudes, beliefs and values but also my assumptions within the context of the research and how these factors may impact the interviewee. In addition, researcher reflexivity allowed me to continually challenge my own biases and motivations and ask whether this may affect my research decisions throughout the qualitative phase of the research.

To stay authentic and true in managing the process of reflexivity within the qualitative research phase, a Self-Reflexivity Guide (Appendix P) was developed based on questions Tracy (2010) posed to qualitative researchers in her article, *Qualitative Quality: Eight "Big Ten" Criteria for Excellent Qualitative Research*. Tracy (2010) wrote, "*One of the most celebrated practices of qualitative research is self-reflexivity, considered to be honesty and authenticity with oneself, one's research, and one's audience*" (2010:842).

The Self-Reflexivity Guide (Appendix P) was needed almost immediately when my passion and convictions around gender stereotyping beliefs were triggered during the pilot. Pilot 001 seemed to speak directly to my beliefs, attitudes and values. Here was an intelligent young woman confessing that she believed she could attain the highest degree, at a top university, but because her priority was to have a family, she was giving up on her dream to pursue medicine, so she could ensure her children had a good life. Pilot 001 reported,

“I know in my heart that I could, literally, go for a PhD in medicine, which is what I originally wanted to do and have kids. So, in a way, I want to like shoot for the stars but then in another way, I’m like – do I want all that money and have to be working so hard, or I want to have a little bit less, and be able to spend more time with my kids and just be a happier person. Because I feel like people that work all the time ... maybe it’s not true for everybody, but I feel like it’s more stress and then you have less time with your family and that’s very important to me to have children, it’s like my main priority”.

Prior to journaling the interview, this researcher attributed these values to the role gender stereotyping beliefs played in this young woman’s thinking. After journaling the interview and using the Self-Reflexivity Guide (Appendix P), the possibility that this belief by the interviewee was solely attributable to gender stereotyping beliefs was challenged and the possibility of decreased cognitive flexibility emerged. When Pilot 001 was asked how she would describe herself as a flexible or inflexible person, she had replied,

“I’m probably a mix of both. Like, I’m not exactly a balance of both; but maybe more towards the inflexible side...”.

Upon a substantial amount of self-reflection with the pilot interview and acknowledging this researcher's assumptions and biases, I was able to expand my initial conclusions to consider other possibilities.

One of the main threats to the use of semi-structured interviews is the potential for researcher bias (Bush 2007). Researcher bias may best be described as the researcher allows their attitudes, beliefs or values to intrude on the attitudes, beliefs or values of the participants taking part in the research. While it may be argued that it is impossible to remain completely objective, during the data collection and analysis of research, there are checks and balances which may be implemented to reduce researcher bias.

In this study, this researcher was the sole researcher for administering the 18 interviews. As a result, the Self-Reflexivity Guide (Appendix P) was developed to assist the researcher with journal writing during the semi-structured interviews. Each interview was documented using the Self-Reflexivity Guide (Appendix P) to explore attitudes, beliefs or values of this researcher that may intrude on what was being heard or how it was being interpreted to help prevent researcher bias. The journal writing was then used as a system of checks and balances during the thematic analysis of the data, to try and filter out any form of researcher bias and to examine the data as objectively as possible.

As such, it is important to acknowledge that Braun and Clark meant their phases of thematic analysis to be more of a starting place as opposed to a how-to-guide (Braun, Clarke & Hayfield 2019). As a result, reflexivity was embedded throughout the thematic analysis of the interview data. This researcher has attempted to ensure that her own assumptions and positionings (Braun & Clarke 2019) were continually challenged and exposed. Therefore, the

researcher's journal was used as a reflexivity tool to inform the thematic analysis process and support establishing trustworthiness of the data analysis (Nowell et al., 2017).

5.8 Chapter Conclusion

This chapter provided a context for how and why the researcher went about integrating qualitative research throughout the data collection process. Chapter Five described the interview participants and sampling method and then addressed the methods used for data collection. In addition, the development of the interview guide, pilot and procedure were explained, concluding with the methods of data analysis and addressing the trustworthiness and credibility of the research.

Chapter Six will provide the reader with an overview of the results of the quantitative phase of this study. Descriptive statistics will be provided first to give an understanding of the participants who took part in the study. The quantitative results of this study will then be provided within the context of the two research questions; restating the hypotheses, presenting the tests used and then reporting what was found.

Chapter Six – Quantitative Results (Surveys)

6.1 Overview of the Chapter

Chapter Six reports the quantitative results from the three surveys administered to the participants. The chapter initially presents the characteristics of the participants, followed by the descriptive statistics for each variable: cognitive flexibility, gender stereotyping beliefs and career aspirations. After the descriptive statistics are presented, the assumptions of normality are explored using the Kolmogorov-Smirnov test and depending on the outcome the relevant parametric or non-parametric test is reported for each variable.

Chapter Six then reports the results of the surveys, through the two research questions, using the relevant parametric or nonparametric correlational measures. Each research question states the hypothesis and then reports on how the research question was answered, providing the results of the relevant tests. The strength of the relationship between each of the relevant variables is provided in table format. Then, in keeping with the theoretical lens of gender schema theory, an exploratory section examines whether there was a significant difference between the genders of the three variables and reports the results. Finally, in order to address the second research question, a multiple regression analysis is conducted to investigate whether cognitive flexibility and gender stereotyping beliefs could be predicting factors of career aspirations.

6.2 Descriptive Statistics, Reliability Estimates and Assumptions of Normality

The present study was able to collect a total of 42% of the students enrolled in the public and private schools between the ages of 16 and 18 years of age in Bermuda as seen in Table 3.

Table 3

Participation Rate in the study of Bermuda Secondary School Students

<i>School</i>	<i>Total School Enrolment *S3 – S4 (16 – 18 years) in Bermuda</i>	<i>Participated in the study</i>	<i>Percentage of total school population</i>
Public			
Public Total	541	164	30%
Private			
Private Total	379	226	60%
TOTAL	920	390	42%

* Senior 3 and Senior 4 (16 to 18 years old)

The demographics for the survey participants can be found in Table 4, based on key characteristics including gender, age and type of educational setting they attended.

Table 4*Characteristics of Survey Participants*

<i>Characteristics</i>	<i>Surveys</i>	<i>n</i>	<i>%</i>
<hr/>			
Gender			
Female		214	58%
Male		157	42%
Age			
16 years		166	45%
17 years		182	49%
18 years		23	6%
Educational Setting			
Public		148	40%
Private		217	58%
Alternative		6	2%

6.2.1 Career Aspirations

To measure career aspirations, participants completed the Career Aspirations Scale-Revised (CAS-R; Gregor & O'Brien, 2016). Due to items being omitted on the Achievement and Leadership scales, the number of participants for each scale varied, resulting in the number of successfully completed Career Aspirations Total scores reduced to $N = 369$. Descriptive statistics and reliability estimates are found in Table 5.

Inspection of the histogram for the career aspiration scores showed the data was negatively skewed (-.617) with a positive kurtosis value (.031). This impression was supported

by the results of the Kolmogorov-Smirnov test which suggested violation of the assumption of normality, $D(369) = 0.090, p < .001$; however, as recommended by Tabachnick and Fidell (2013) the values of the kurtosis and skewness range fell between +1 and -1, so the data was considered to have a normal distribution. As a result, tests for parametric data were used and reported in Section 6.3.1.1.

6.2.2 Gender Role Stereotypes

To measure gender role stereotyping, participants completed the Gender Role Stereotypes Scale (GRSS; Mills et al., 2012) with descriptive statistics and reliability estimates, for this study, found in Table 5. Due to items being omitted on the male and female stereotype scales, the number of participants was decreased by one, resulting in the number of successfully completed scores reduced to $N=370$ as seen in Table 5.

Inspection of the histogram for the Female Stereotypes scores showed that the distribution of the scores were positively skewed (1.95) with a positive kurtosis (6.20), while the Male Stereotypes scores showed the distribution of the scores was negatively skewed (-.36) with a negative kurtosis (-.48). A high kurtosis value indicates either an error in the data or a high number of outliers in the dataset (Pallant, 2016). This impression was supported by the results of the Kolmogorov-Smirnov test which suggested a violation of the assumption of normality, $D(370) = 0.254, p < .001$ for the Female Stereotypes scores and $D(370) = 0.124, p < .001$ for the Male Stereotypes Scores, with values of the kurtosis and skewness range falling outside of the +1 and -1 range (Tabachnick & Fidell, 2013). It was determined that there were a high number of outliers reflecting the authentic beliefs of the participants. As a result, tests for non-parametric data were used and reported in Section 6.3.2.1.

6.2.3 Cognitive Flexibility

To measure cognitive flexibility, participants completed the Cognitive Flexibility Inventory (CFI; Dennis & Vander Wal, 2010) with descriptive statistics and reliability estimates found in Table 5. The results from this study's CFI Total score and Alternatives Subscale were similar to that of the original CFI inventory (Dennis & Vander Wal, 2010), while the Control scores from this study were lower than the original scores (see Appendix L).

Inspection of the histogram for the CFI Total score showed the data was negatively skewed (-.089) with a negative kurtosis value (-.293). Deviations from normality did not appear to be systematic and may have been a reflection of the relatively large sample size. This impression was supported by the results of the Kolmogorov-Smirnov test which indicated the normality of the distribution of scores, $D(371) = 0.033, p = .200$. In addition, the values of the kurtosis and skewness range fell between +1 and -1, so the data was considered to have a normal distribution (Tabachnick & Fidell, 2013). As a result, parametric analysis was used and reported in Section 6.3.1.3

Table 5*Descriptive Statistics and Reliability Estimates for Variables*

Variable	N	Mean (SD)	Median (IQR)	Min.	Max.	α
Cognitive Flexibility	371	102.36 (13.36)		62.00	136.00	.85
Control Scale	371	33.51 (7.00)		14.00	49.00	.79
Alternatives Scale	371	68.85 (9.65)		39.00	90.00	.87
*Female Stereotype	370		*3.00 (.25)	*2.25	*5.00	.72
*Male Stereotype	370		*2.25 (.75)	*1.00	*4.00	.64
Career Aspirations	369	72.31 (14.21)		27.00	96.00	.90
Educational Aspirations	370	22.92 (5.94)		3.00	32.00	.86
Leadership Aspirations	371	23.59 (6.09)		1.00	32.00	.80
Achievement Aspirations	369	25.78 (4.69)		8.00	32.00	.70

*Non-parametric statistics – reporting Median and Inter-Quartile Range

6.3 Quantitative Research Results

6.3.1 Research Question 1 - What is the relationship between cognitive flexibility, gender stereotyping beliefs and career aspirations of 16- to 18-year-old late adolescents in Bermuda?

6.3.1.1 What is the relationship between cognitive flexibility and 16- to 18-year-old late adolescents' career aspirations?

It was hypothesised that if a participant had high cognitive flexibility their career aspirations, in turn, would be higher and vice versa, a participant with low cognitive flexibility would have lower career aspirations. This hypothesis was tested using the Pearson product-moment correlation coefficient (Table 6), which investigated the relationship between cognitive flexibility, as measured by the CFI (Dennis & Vander Wal, 2010 and its subscales (Control and

Alternatives) and career aspirations, as measured by the CAS-R (Gregor & O'Brien, 2016) and its subscales (Educational, Leadership and Achievement Aspirations). Preliminary analysis was performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity, as reported in Sections 6.2.1 and 6.2.3.

A medium, positive correlation was found, in line with the hypothesis. As a result, the results supported the hypothesis that higher values of cognitive flexibility correspond to higher values of career aspirations ($r = .408, n = 369, p < .001$). In addition, higher values of the Alternatives Scale (an ability to perceive multiple alternative explanations for life's occurrences and ability to generate multiple solutions to difficult situations) also correspond with higher values of career aspirations ($r = .342, n = 369, p < .001$) including higher values of Educational ($r = .318, n = 370, p < .001$), Leadership ($r = .248, n = 370, p < .001$) and Achievement Aspirations ($r = .314, n = 369, p < .001$). Further, it was found that higher values of the Control scale (an ability to perceive difficult situations as controllable) correspond to higher values of career aspirations ($r = .306, n = 369, p < .001$) including higher values of educational ($r = .257, n = 370, p < .001$), leadership ($r = .284, n = 370, p < .001$) and achievement aspirations ($r = .236, n = 369, p < .001$).

Table 6*Correlations of Cognitive Flexibility and Career Aspirations*

Pearson Product-moment Correlations Between Cognitive Flexibility (CFI) and Career Aspirations (CAS-R)

Scale	1	2	3	4	5	6	7
1. Total Cognitive Flexibility	-						
2. Control Scale	.718**	-					
3. Alternatives Scale	.863**	.269**	-				
4. Total Career Aspirations	.408**	.306**	.342**	-			
5. Educational Aspirations	.364**	.257**	.318**	.814**	-		
6. Leadership Aspirations	.328**	.284**	.248**	.868**	.492**	-	
7. Achievement Aspirations	.350**	.236**	.314**	.868**	.560**	.708**	-

** Correlation is significant at the 0.01 level (2-tailed)

Therefore, it may be concluded that participants between the ages of 16 and 18 years old who have high cognitive flexibility are likely to have high career aspirations, while students who have low cognitive flexibility are more likely to have low career aspirations.

6.3.1.2 What is the relationship between gender stereotyping beliefs and career aspirations of 16 to 18-year-old late adolescents?

It was hypothesised that participants who held more traditional gender stereotyping beliefs would have low career aspirations, while participants who perceived the male and/or female role as shared or equal responsibility would have high career aspirations. This hypothesis was tested using the Spearman Rho correlation coefficient (Table 7), which investigated the extent to which gender stereotyping beliefs, as measured by the GRSS (Mills et al., 2012) and its

subscales (Female and Male Stereotypes) have on career aspirations, as measured by the CAS-R (Gregor & O'Brien, 2016) and its subscales (Educational, Leadership and Achievement Aspirations). Preliminary analysis was performed with a violation of normality found as reported in Sections 6.2.1 and 6.2.2.

A weak, negative correlation was found in contrast with the hypothesis. As a result, participants who perceived the male role as a more traditional male stereotypical role (*Median* = 2.25) correspond to higher levels of career aspirations ($r = -.203, n = 368, p < .001$). Further, it was found that those participants who perceived the male role as a more traditional male stereotype role (*Median* = 2.25) correspond to higher levels of the three subscales: Educational ($r = -.115, n = 369, p < .027$), Leadership ($r = -.236, n = 369, p < .001$) and Achievement Aspirations ($r = -.207, n = 369, p < .001$). It should be noted that the Male Stereotype was reverse coded, which explains why the negative correlation is attributed higher levels of career aspirations.

In addition, there was no evidence for correlation between those participants in the sample who perceived a shared or equal responsibility female stereotype role (*Median* = 3.0) and higher career aspirations ($r = .065, n = 368, p < .210$). In addition, a weak, positive correlation was found in line with the hypothesis. As a result, those participants who perceived the female role as more shared or equal responsibility correspond to higher levels of Leadership Aspirations ($r = .108, n = 369, p < .038$).

Table 7*Correlations of Career Aspirations (CAS-R) and Gender Stereotyping Beliefs (GRSS)*

Spearman's Rank Correlations Between CAS-R and GRSS						
Scale	1	2	3	4	5	6
1. Total Career Aspirations	-					
2. Educational Aspirations	.793**	-				
3. Leadership Aspirations	.859**	.458**	-			
4. Achievement Aspirations	.863**	.528**	.726**	-		
5. Female Stereotype	.065	.019	.108*	.066	-	
6. Male Stereotype	-.203**	-.115*	-.236**	-.207**	-.581**	-

** . Correlation is significant at the 0.01 (2-tailed); * . Correlation is significant at the 0.05 level (2-tailed).

Therefore, it may be concluded that participants who perceive the male role as a more traditional male stereotypical role are likely to have high career aspirations, inclusive of high educational, leadership and achievement aspirations, while participants who perceive the female role as a shared or equal responsibility role are more likely to have higher leadership aspirations.

6.3.1.3 What is the relationship between cognitive flexibility and gender stereotyping beliefs of 16- to 18-year-old late adolescents?

It was hypothesised that a participant who had high cognitive flexibility would perceive the male and/or female role as one of shared or equal responsibility, while participants with low cognitive flexibility would perceive the male and/or female role as a more traditional, stereotypical gender role. This hypothesis was tested using the Spearman Rho correlation coefficient (Table 8), which investigated the relationship between gender stereotyping beliefs as measured by the GRSS (Mills et al., 2012) and its subscales (Female and Male Stereotypes) and

cognitive flexibility as measured by the CFI (Dennis & Vander Wal, 2010) and its subscales (Control and Alternatives). Preliminary analysis was performed with a violation of normality found as reported in Sections 6.2.2 and 6.2.3.

A weak, negative correlation was found in contrast with the hypothesis. As a result, participants who perceive the male role as a more traditional male stereotypical role (*Median*=2.25) correspond to higher levels of the Control subscale ($r = -.120, n = 370, p < .021$). Therefore, it may be concluded that participants between the ages of 16 and 18 years old who perceive the male role as a more traditional stereotypical role have an increased ability to perceive difficult situations as controllable. It should be noted that the Male Stereotype was reverse coded, which explains why the negative correlation is attributed higher levels of cognitive flexibility.

Table 8

Correlations of Cognitive Flexibility and Gender Stereotyping Beliefs.

Spearman’s Rank Correlations Between CFI and GRSS					
Scale	1	2	3	4	5
1. Total Cognitive Flexibility	-				
2. Control Scale	.724**	-			
3. Alternatives Scale	.847**	.284**	-		
4. Female Stereotype	.063	.037	.042	-	
5. Male Stereotype	-.046	-.120*	.026	-.581**	-

** . Correlation is significant at the 0.01 (2-tailed); * . Correlation is significant at the 0.05 level (2-tailed).

6.4 Gender Variations in Career Aspirations, Gender Stereotyping Beliefs and Cognitive Flexibility

An exploratory investigation was conducted on career aspirations, gender stereotyping beliefs and cognitive flexibility, to determine if there were gender variations between female and male 16- to 18-year-old participants. These investigations were conducted to ensure that the data underwent rigorous testing to expose any gender differences between the participants in consideration of the gender schema theoretical lens from which this present study is guided.

6.4.1 Gender and Career Aspirations

An independent-samples t-test was conducted to compare the Career Aspiration Total scores for males ($n = 155$) and female participants ($n = 214$). According to Levene's test, the variances of career aspirations in the two groups were equal ($F = .06, p = .804$), so no adjustment was made for unequal variances. On average, female participants had higher career aspiration scores ($M = 73.33, SE = .98$) than male participants ($M = 70.90, SE = 1.13$). However, this difference of 2.43 points was not statistically significant, $t(367) = 1.63, p = .105$ (two-tailed).

Following, an independent-samples t-test was conducted to compare the Educational Aspiration scores for male ($n = 156$) and female participants ($n = 214$). According to Levene's test, the variances of educational aspirations in the two groups were equal ($F=.26, p=.611$), so no adjustment was made for unequal variances. On average, female participants had higher educational aspirations ($M=23.58, SD=5.89$) than male participants ($M=22.01, SD=5.91$). This difference, 1.57 ($r = .13$) was small according to Cohen's rules and was statistically significant, $t(368) = 2.52, p = .012$ (two-tailed).

In addition, an independent-samples t-test was conducted to compare the Leadership Aspiration scores for male ($n = 156$) and female participants ($n = 214$). According to Levene's test, the variances of career aspirations in the two groups were equal ($F = 1.86, p = .174$), so no adjustment was made for unequal variances. On average, female participants had higher leadership aspirations ($M = 23.84, SE = .41$) than male participants ($M = 23.25, SE = .5$). However, this difference of .59 was not statistically significant, $t(368) = .92, p = .361$ (two-tailed).

Finally, an independent-samples t-test was conducted to compare the Achievement Aspiration scores for male and female participants. According to Levene's test, the variances of career aspirations in the two groups were equal ($F = .03, p = .867$), so no adjustment was made for unequal variances. On average, female participants had higher achievement aspirations ($M = 25.91, SE = .32$) than male participants ($M = 25.59, SE = .38$). However, this difference of .32 was not statistically significant, $t(367) = .641, p = .522$ (two-tailed).

6.4.2 Gender and Gender Role Stereotype Beliefs

A Mann-Whitney U test was conducted to compare the gender stereotyping beliefs scores for male ($n = 156$) and female participants ($n = 214$). The median female stereotype level for female participants ($Md = 3.0, IQR = .25$) was lower than male participants ($Md = 3.25, IQR = .50$). The mean rank was also lower for the female participants (177.33) and higher for the male participants (196.71). A two-tailed Mann-Whitney U test accepted the null hypothesis that there was no statistical difference between the distribution of female stereotype across gender, $u = 18440, p = .064$. The distribution of female stereotype is statistically the same across categories of gender, with $r = .096$.

The median male stereotype level for male participants ($Md = 2.25$, $IQR = 1$) was lower than the female participants ($Md = 2.50$, $IQR = .75$). The mean rank was also lower for the male participants (167.44) and higher for the female participants (198.67). A two-tailed Man-Whitney U test rejected the null hypothesis that there was no statistical difference between the distribution of male stereotype across gender, scores $u = 13874$, $p = .005$. The distribution of male stereotype is not the same across categories of gender. The results indicated a small to medium difference between male and female participants. Male participants perceived the male role as a more traditional, stereotypical role, whereas female participants perceived the male role to be closer to a more shared or equal responsibility. The effect size of the difference, $r = .15$, indicated a small to medium effect according to Cohen's rules.

6.4.3 Gender and Cognitive Flexibility

An independent samples t-test was conducted to compare the Cognitive Flexibility Total scores for male ($n = 157$) and female participants ($n = 214$). According to Levene's test, the variance of the cognitive flexibility scores between male and female participants were equal ($F = 1.21$, $p = .272$), so no adjustment was made for unequal variances. On average, male participants had higher cognitive flexibility scores ($M = 102.53$, $SE = 1.13$) than female participants ($M = 102.24$, $SE = .88$). However, this difference of .29 points was not statistically significant, $t(369) = -.203$, $p = .839$ (two-tailed).

Following that, an independent samples t-test was conducted to compare the Control Scale scores for male ($n = 157$) and female participants ($n = 214$). According to Levene's test, the variance of the control scores between male and female participants were equal ($F = .60$, $p = .441$), so no adjustment was made for unequal variance. On average, male participants had higher control scores ($M = 34.26$, $SE = .54$) than female participants ($M = 32.96$, $SE = .49$). However,

this difference of 1.30 points was not statistically significant, $t(369) = -1.77, p = .078$ (two-tailed).

Lastly, an independent samples t-test was conducted to compare the Alternatives Scale scores for male ($n = 157$) and female participants ($n = 214$). According to Levene's test, the variance of the alternatives scores was unequal ($F = 4.884, p = .028$), so the assumption of equal variance has been violated and therefore is not assumed. On average, female participants had higher alternative scores ($M = 69.28, SE = .63$) than male participants ($M = 68.27, SE = .82$). However, this difference of 1.01 points was not statistically significant, $t(312.783) = .981, p = .327$ (two-tailed).

6.5 Research Question 2 - What factors predict career aspirations of the late adolescent in Bermuda?

As a result of the significant correlations found between Cognitive Flexibility and Career Aspirations and Male Stereotype with Career Aspirations it was determined that a further exploration should be undertaken. A multiple regression analysis using the CAS-R Total score as the outcome and dependent variable (DV) was used to examine the relationship between career aspirations and the two subscales of cognitive flexibility and gender stereotyping beliefs. The regression analysis was conducted with CAS-R as the outcome and the two subscales (Control and Alternatives scales) as well as Male Stereotype as the independent variables (IV), were used to test the above hypothesis. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity.

6.5.1 What variables predict participants' career aspirations?

Based on the significant correlations between cognitive flexibility, gender stereotyping beliefs and career aspirations, it was hypothesised that cognitive flexibility and gender stereotyping beliefs would be a predictor of participants' career aspirations see Table 9.

A multiple regression was run to predict career aspirations scores from the Control and Alternatives subscales scores of the Cognitive Flexibility scale and the Male Stereotype and Female Stereotype scores. All of the four assumptions mentioned in Section 6.5 were met. Three of the four variables, statistically significantly predict career aspiration, $F(3, 364) = 30.604, p = < .001, R\text{-squared} = .201, \text{adjusted } R\text{-square} = .195$. Control (have an increased ability to perceive difficult situations as controllable), Alternatives (an ability to perceive multiple alternative explanations for life's occurrences and ability to generate multiple solutions to difficult situations) and Male Stereotype (perceives a more traditional, stereotypical male role) added statistically significantly to the prediction. Around 19% of the variance in career aspirations can be explained by Control, Alternatives and Male Stereotype scores. Critically, the adjusted *r squared* is relatively low, so there is still potential for future research for additional factors contributing to career aspirations.

Table 9

Summary of Multiple Regression Analysis for Cognitive Flexibility (and its subscales) and Male and Female Gender Stereotype as Predictors of Career Aspirations

<i>Variables</i>	<i>B</i>	<i>SE</i>	<i>β</i>	<i>t</i>	<i>p</i>	<i>95% Confidence Level</i>	
(Constant)	40.195	5.194		6.797	<.001	28.565	51.825
Alternatives	.432	.072	.291	5.966	<.001	.289	.574
Control	.409	.009	.203	4.119	<.001	.214	.604
Male Stereotype	-4.940	1.190	-.197	-4.152	<.001	-7.280	-2.600

It should be noted in Table 9 that reverse scoring was used for the Male Stereotype score, as a result, the coefficient was negative. However, it can be interpreted that the more traditionally masculine values someone holds the higher their career aspirations.

6.6 Chapter Conclusion

The first research question examined the relationship between cognitive flexibility, gender stereotyping beliefs and career aspirations. A moderate, positive correlation was found between cognitive flexibility and career aspirations, in line with hypotheses. In addition, a small to moderate positive relationship was found between the two subscales of cognitive flexibility with all three subscales of career aspirations. Therefore, the data supports the conclusion that higher cognitive flexibility is related to higher career aspirations in participants within the age range of 16 to 18 years.

In addition, the extent to which gender role stereotyping may relate to career aspirations was examined. The results supported that the perception of a more traditional male stereotype role was negatively correlated with all aspects of career aspirations, including education,

leadership and achievement. On the other hand, perception towards a more shared or equal role of responsibility, in the female stereotype role, was positively correlated with leadership aspirations.

Finally, the relationship between gender stereotyping beliefs and cognitive flexibility was explored. A small negative relationship was established between the traditional male stereotype role and the ability to perceive difficult situations as controllable for 16 to 18 years old late adolescents.

The exploratory section examined if there were significant gender differences in cognitive flexibility, gender stereotyping beliefs and career aspirations. There were no significant gender differences found with cognitive flexibility or any of its subscales. When gender role stereotyping beliefs were examined for gender differences, there was no difference found in the way participants perceive the female stereotype; however, there was a small significant difference between the way participants perceived the role of the male stereotype. Male participants were found to perceive the male stereotype role as adhering to a more traditionally male role, while the female participants perceived the male stereotype role to be closer to a shared or equal responsibility. In addition, there were no significant gender differences found in the overall career aspirations or its subscales: leadership and achievement aspirations. However, a significant difference was found with educational aspirations, as female participants were found to have significantly higher educational aspirations than their male participant counterparts.

The second research question investigated whether cognitive flexibility or gender stereotyping beliefs could predict the late adolescent participants' career aspirations. It was

established that subscales of cognitive flexibility and a traditional male stereotype role could predict career aspirations.

Chapter Seven provides the reader with an overview of the findings of the qualitative phase of this study. An analysis of the semi-structured interviews is conducted with themes and subthemes identified and applied to the research questions. An in-depth analysis of the participants' responses within the context of the themes and subthemes provides evidence for the results of the qualitative phase of this study.

Chapter Seven – Qualitative Findings (Semi-Structured Interviews)

7.1 Overview of Chapter Seven

The previous chapter underpinned a pragmatic approach of the quantitative data collected with consideration of a gender schema theoretical lens. This chapter frees itself from the structure and confines of an inherently positivist manipulation of the data and explores the rich, qualitative offerings from the participants who so openly shared their experiences and beliefs. This chapter allows the voices of the participants to be heard but is also cognisant of my own voice as the researcher. Thus, this chapter presents the authentic voice of the participants but acknowledges and honours my own voice within the journey and is mindful of my own “unarticulated assumptions” (Braun & Clarke, 2019:590).

As previously mentioned, the interview data is viewed through a gender schema lens and results are analysed for obvious differences between males and females. Particular attention will examine how differences are transformed into disadvantages for females (Bem, 1993). This chapter presents the results through the themes which were developed from a reflexive exploration of the interviews and will be embedded within the context of the third research question.

7.2 Demographics of Interview Participants

This section provides the demographics of the participants who took part in this study.

Table 10 illustrates an overview of the characteristics of the interview participants, while Table 11 provides a breakdown of the interview participants by gender.

Table 10

Characteristics of Interview Participants by Gender, Age and Educational Setting

<i>Characteristics</i>	<i>Participants</i>	<i>n</i>	<i>%</i>
Gender			
Female		12	67
Male		6	33
Age			
16 years		12	67
17 years		5	28
18 years		1	5
Educational Setting			
Public		4	22
Private		12	67
Alternative		2	11

The characteristics of the interview participants are represented by gender, age and educational setting.

Table 11*Characteristics of Interview Participants by Gender*

<i>Characteristics</i>	<i>Female</i>	<i>n</i>	<i>%</i>	<i>Male</i>	<i>n</i>	<i>%</i>
<i>Age</i>						
16 years		7	39	5	28	
17 years		4	22	1	5	
18 years		1	5	0	0	
<i>Educational Setting</i>						
Public		4	22	0	0	
Private		8	44	4	22	
Alternative		0	0	2	11	

There were 18 participants, 12 female and 6 males with the female participants outnumbering the males by 2:1. An issue which emerged from the female participants, in one form or another, was their need to be “heard”. In line with Gender Schema Theory, it may be that a 2:1 advantage will allow more space for their voices.

7.3 Qualitative Research Data

In reflecting on the interview data, five overarching themes and sub-themes were generated, which are discussed in this section and presented in Table 12.

Table 12

Themes and Sub-Themes

Themes	Sub-Themes
Flexibility and Future Success	<ul style="list-style-type: none">• Flexibility allows you to juggle your life well; inflexibility limits you.• Flexibility is important.
Awareness and Influence of Occupational Stereotypes	<ul style="list-style-type: none">• Girls' awareness of occupational stereotypes.• Boys' awareness of their advantage in occupational stereotypes.
Internalised Stereotypes	<ul style="list-style-type: none">• Girls believe their gender is a disadvantage in the workplace.• Girls work harder to be heard.
Limiting Beliefs	<ul style="list-style-type: none">• Boys are strong; girls are disadvantaged physically.• Girls struggle to play competitive sports.• Girls limit their opportunities based on their beliefs and experiences.
Influence of Others	<ul style="list-style-type: none">• Parents contribute to occupational stereotypes.• Female role-models are important to girls.

7.3.1 Research Question 3 - What are students' perceptions and experiences of gender stereotyping beliefs and cognitive flexibility as they relate to their career aspirations.

7.3.1.1 Flexibility and Future Success

When analysing the interview data, the theme of 'Flexibility and Future Success' was developed. This theme was supported by two subthemes, *flexibility allows you to juggle your life well; inflexibility limits you* and *flexibility is important*. This theme was identified from the participants' general understanding of flexibility and inflexibility and the importance they attached to it. For the participants, their understanding seemed to come from a multitude of different perspectives and personal experiences.

7.3.1.1.1 Flexibility allows you to juggle your life well; inflexibility limits you

The first subtheme revealed that a common understanding from the participants was that flexibility allows a person to juggle their life well, while inflexibility limits you. The data showed that participants saw flexibility within a variety of contexts, with a couple of participants using the word "juggle" but doing so in contrasting contexts and showing different perspectives. Participant 8 (female) reported that a flexible person was "able to juggle around their schedule" and gave the example, "I am a flexible person. If I have plans and stuff, I always find a way to fit in something else at the time. Even if I have to postpone something", while Participant 10 (female), on the other hand, responded, "knowing how to juggle other peoples' feelings with also your feelings" and giving an example, "You could be going through stuff and also people coming to you with their stuff. Just got to know how to juggle them". Other participants described flexibility in terms of a state of mind, "carefree, don't worry too much, not very anxious" (Male, Participant 6), time-management, "having a lot of friends and help them out with things, as well as maintaining a job" (Male, Participant 7) and "handle everything, like good time management"

(Female, Participant 11) and being resilient, *“able to modify their plans based on that of others, so if issues arise they may be able to work around them or come up with innovative solutions”* (Male, Participant 13). The common thread was the ability to manage or juggle all aspects of your life.

The concept of inflexibility had less consensus from participants. Several participants described inflexibility in terms of negative personality characteristics, for example, stubborn, *“stubborn in their own choices, stick to their way”* (Female, Participant 12), rigid and aggressive *“very rigid, aggressive, won’t make time for you”* (Female, Participant 11) and self-centered *“self-centered, very self-centered”* (Male, Participant 6). When the participants were asked to describe themselves, many saw themselves as in between flexible and inflexible, depending on their circumstances at the time. Participant 6 (male) gave an example of himself, *“I sometimes want to do different things, but sometimes I just won’t, just won’t do anything”*, while Participant 2 (female) reported, *“It depends on how I’m feeling. ...when I don’t have any energy, I am very inflexible. I quit out of things. I just say no. But then if certain things come up, and I feel like I can manage everything, then I rearrange my schedule”*. Participant 13 (male) described himself as, *“I’m a pretty flexible person when it comes to issues involving day to day menial tasks. What order I do my work, when and where. But I’m not so flexible psychologically or philosophically, I’m pretty set in my beliefs”*.

Some participants saw inflexibility as more of a need for routine or organisation; however, the essence of the responses saw inflexibility as limiting *“I feel like they...just like a routine sort of, they like to go with things they are used to, and they don’t really do new things”* (Female, Participant 3) or *“someone that’s only strong in one area and doesn’t have many other strengths”* (Male, Participant 19). Some of the participants saw inflexibility as a personal

character flaw while others as a personal management issue; however, a common belief was that inflexibility is associated with limiting an individual. In addition, when examining the data as it relates to career aspirations, different perspectives seemed to emerge for the role of flexibility for male and female participants. One male participant saw flexibility as being able to manage shifting careers or working their way up a career,

“...if you are unable to change your field or move in and work in different ways, you’re not going to make it very far...even though your dream job could be, it’s a long shot, but being a pilot of an airplane. You’re never going to start there. You’re going to have to work at the small jobs first” (Participant 14).

However, a female student saw flexibility as key to getting along at work, *“sometimes, you just can’t think about yourself as far as, like, I’m in the workforce. Think about your coworkers and ... try to be open to different ways of thinking and working”* (Participant 17).

These comments provided an insight into the participants' understanding of what flexibility and inflexibility mean to them within the context of their own lives. The evidence appears to show that the participants gained this understanding through personal life experiences, suggesting that they have “lived” the difference between what flexibility versus inflexibility means to them personally.

7.3.1.1.2 Flexibility is important

In the subtheme, *flexibility is important*, data from the interviews supported the importance both the male and female participants saw in being flexible. One male participant commented on flexibility, *“It is very important. Colleges and universities look for a person that is flexible, someone who can do both schooling and other parts of their life, and it also makes*

you well-rounded and gives you more opportunities” (Participant 15). While a female participant saw flexibility in terms of balancing her life, especially in reference to her future work life, *“You don’t want to be...just one driven thing. So, I think it important to be able to balance and experience multiple things instead of just one”* (Participant 4). In contrast, some participants saw inflexibility as limiting their life in areas such as the workplace environment, missed opportunities and mental health. One female participant responded, *“It is very important, especially with modern life because things happen all the time that you can’t expect, so if you are inflexible it’s going to be very hard for you to cope”* (Participant 12).

These comments provided evidence that there was a consensus from the participants that flexibility was important to their future, even though the participants came to this understanding from a variety of different angles, reflecting their own personal experiences. For example, Participant 17 (female) felt she was flexible because she was able to manage her time and her priorities with an ultimate goal in mind, she reported, *“I try to manage my friends, my social life as far as my school. Obviously, school always takes a kind of like higher realm, because I want to be successful”*. In particular, the data seemed to show that flexibility was important to the participants’ future in areas such as university, future careers and personal growth. In the next theme, awareness and influences of occupational stereotypes, both male and female participants were able to show their awareness of occupational stereotypes and to articulate the influences of those stereotypes.

7.3.1.2 Awareness and Influence of Occupational Stereotypes

When analysing the data, a second theme was developed ‘*Awareness and Influence of Occupational Stereotypes*’. This theme was supported by two subthemes: *girls’ awareness of occupational stereotypes* and *boys’ awareness of the advantage of occupational stereotypes*. For

the participants, two different perspectives along gender lines emerged of the participants awareness and influence of occupational stereotypes. These differing perspectives gave insight into how male and female participants viewed occupational stereotypes.

7.3.1.2.1 Girls' awareness of occupational stereotypes

The subtheme *girls are aware of occupational stereotypes* suggested that the female participants were aware of occupational stereotypes and had mixed feelings of how they would influence their future. One female participant reported, *"I've always loved to play with children and animals. I definitely feel, just because of stereotypes, I have more of an advantage"* (Female, Participant 4), while another explained, *"...the world's getting better. So, I think it's pretty equal now. So, ...I think the field (pediatrician) that I want to take will be better"* (Female, Participant 18). There was even a cautious optimism from some of the female participants, *"Generally speaking, I think females now have more of an advantage than men do"* (Female, Participant 5). However, a number of the female participants' optimism was tempered with qualifiers such as *"getting better"*, *"pretty equal"* and *"I think"*.

However, some female participants appeared to be very aware of occupational stereotypes, and did not see true gender equality as realistic,

"I feel like the world we live in today, where there's so many genders. I know that we still don't have gender equality, and that's definitely something to work on in the future. But I feel like the disadvantage won't be as much as it used to be. I feel like we're working on it and we're getting more equal like every day. So, by the time I am in the workforce...I'd say it be more equal than it is now, but it probably won't ever be actually equal"
(Female, Participant 16).

A few female participants did see their gender as a disadvantage in the future, with one remarking, “...it depends what you are doing, but it could give me a disadvantage in my future. It may just mean that I am going to have to work a little bit harder” (Female, Participant 9).

These comments provided evidence that the females interviewed were aware of occupational stereotypes and had mixed feelings about how they would personally be affected in their future. This awareness seemed to be linked to their personal feelings ranging from positive to negative, and in how much they thought they would be personally influenced by an occupational stereotype. However, most of the female participants expressed optimism that things were improving and that they would have an easier time than previous generations. The evidence showed that a few of the female participants were considering how some inherent stereotypes may work to their advantage in respect to certain careers. In contrast, others felt less hopeful and were anticipating having to work harder than males. However, the interviews seemed to provide evidence that the female participants were feeling relatively optimistic about overall occupational stereotypes.

7.3.1.2.2 Boys’ awareness of the advantage in occupational stereotypes

The second subtheme shows that boys were aware of occupational stereotypes and that they see them as an advantage for their careers. One participant reported that stereotypes were an advantage, “because I am a male, and I think in terms of job interviews. I think it’s sad, I don’t agree with it, but I do think I am at an advantage” (Participant 6), while another male participant agreed that his gender shouldn’t make a difference but acknowledged the reality, “I don’t think it should, but it’ll make a difference” (Participant 15). Male participants also acknowledged that perceived physical strength and stamina gave them increased access to jobs when these qualities were associated with an occupational stereotype. Further, male participants specifically named

careers, which they felt were generally viewed as traditionally “male” and spoke about how being male would facilitate this advantage, “*There is a cultural expectation that women are not as encouraged to join the military as males are and they may have a tougher time joining the military*” (Participant 13), and “*Personally, it gives me an advantage...just looking at the fields I am thinking of...manual labor...cooking fields or maintaining plants*” (Participant 7).

In contrast with the females, the males were aware that occupational stereotypes work to their advantage. The data provided evidence of the male students’ conscious understanding of the privilege their gender will bring, even as early as the job interview phase and, in particular, if an occupation is associated with physical strength. Perhaps as a result of both the participant’s awareness of gender stereotypes but also of those stereotypes they themselves were unaware of, the next theme, internalised stereotypes, was uncovered.

7.3.1.3 Internalised Stereotypes

When analysing the data, a third theme was developed, ‘Internalised Stereotypes’. This theme was supported by two subthemes: *girls believe gender is a disadvantage in the workplace* and *girls work harder to be heard*. For the female participants, the interview seemed to provide them with a place to express and process some of their experiences either in the workplace or their perceptions of what the workplace was like.

7.3.1.3.1 Girls believe their gender is a disadvantage in the workplace

The subtheme, *girls believe gender is a disadvantage in the workplace*, was frequent throughout the interviews, as many of the female participants spoke of already having observed, experienced or heard of being at a disadvantage in a workplace setting. These concerns ranged from job selection, “*businesspeople pick males over females*” (Female, Participant 10), getting

less pay “...from the statistics, I know, women get paid less in the workforce. And then, I want to go into a corporate role, which is a male dominated industry. I feel like it will bring me a disadvantage” (Female, Participant 11) or being respected, “I won’t be necessarily respected as my male counterparts” (Female, Participant 12).

In addition, some female participants were able to give personal workplace experience, such as Participant 2 who reported on not only her experience but on feedback she had been given from a female co-worker, “I know that at the job I was working at this summer, that everybody in the head roles were males. I was talking to this underwriter, and she was like, “Oh, it’s definitely hard if you go into a job and there’s just predominantly male, you are going to feel a lot of friction”. Another example came from Participant 16 (female) during a work shadow experience, “I got to do work study shadowing with them (actuaries) and it’s basically all men. You might have a room of eight, nine men”.

These comments gave contradictory evidence from the fairly optimistic, and perhaps somewhat idealistic mood in the earlier sub-theme, *girls awareness of occupational stereotypes*. The comments provided evidence of the reality that the female participants were already aware of, having either experienced, seen or heard about gender stereotypes in the workplace setting. This sub-theme appears to capture a reality that has been internalised, as concrete real-life examples were numerous and conveyed with emotion when they were shared.

7.3.1.3.2 Girls work harder to be heard

The subtheme, *girls work harder to be heard*, developed as a current running throughout many of the interviews as the female participants described their experiences. One female participant commented about her attempts to be heard while participating in a male dominated sport, *“I didn’t get along with anybody because they were all guys, and being heard, no one listened to me because I was the only girl. I got out and said, listen to me!”* (Participant 5). This Participant’s frustration is captured, but she was able to rise above those feelings of frustration and make herself heard. However, another female participant provided evidence of the frustration and isolation that she had previously felt but did not feel confident in speaking out, *“I mean like, I’m a girl, so I can’t do that. Like, if I wanted to speak, I’d be like, everyone is judging me, I’m a girl!”* (Participant 2). In contrast, another female participant commented about her own personal strategy when she wants to be heard,

“I’m pretty outspoken, like I express myself a lot, and I guess people don’t, stereotypes again, they don’t expect that from a girl, especially of a younger age. I do debate, and I’m pretty up to date with political stuff. So, I like to know my facts and I like to be prepared for whatever I am going to face. And I think a lot of people wouldn’t expect that from a younger woman.” (Participant 16).

In one example, a female participant highlighted the sense of continuous self-monitoring she felt will be necessary when she enters the workforce,

“... for the men in the industry (Finance), I can’t say I am going to do this and this. I need things within the boundaries, so it doesn’t make a commotion...Like me saying something and getting fired from my job”. (Participant 11).

This extreme example highlights the lack of flexibility the female participants are already operating under, even before they attain their chosen career, because of the influence of internalised gender stereotype beliefs.

These comments provided an insight into the female participants' frustration when trying to put themselves out there, getting heard, and their varying degrees of success. In addition, these interviews provided evidence of the different strategies that the female participants use to get "heard", such as demanding to be heard or being very prepared before speaking. The interviews of the female participants also provided evidence of the extent to which their experiences, and subsequent frustrations with gender stereotyping beliefs had become internalised. As a consequence of internalised stereotypes, a pattern of limiting beliefs emerged.

7.3.1.4 Limiting Beliefs

In analysing the interview data, a fourth theme was developed, 'Limiting Beliefs'. This theme was supported by three subthemes: *boys are strong/girls are disadvantaged physically*, *girls are not taken seriously in competitive sports* and *girls limit their opportunities based on beliefs and experiences*.

7.3.1.4.1 Boys are strong; girls are disadvantaged physically

The data suggested that while *boys saw themselves as strong*, *girls saw themselves disadvantaged physically*. Both genders saw strength as an advantage for males within the context of careers and sports. Female Participant 10 summed it up when she commented, "...*males have the upper hand always because they're stronger*." However, Participant 12 commented that her gender had never hurt her in wanting to do something "*other than your*

typical modern strength stuff, like lifting things". This sense of always being disadvantaged physically seemed to play into an inflexible mindset from some of the female participants.

The data showed that there was a notable difference in both the language and the context used between the genders when referring to physical strength. One male participant reported,

"Being a man gives you quite a few more rights, I feel personally. I think it could give me more of an advantage, I definitely feel like, for instance...you wouldn't see a lot of female construction workers even though I am sure a lot of females could do it. People just aren't hiring them because they see women as inferior in that sense, they're not as strong, they're not as fit, they're not as capable for things like that" (Participant 14).

In contrast, Participant 8 reported, *"In the working world, males are more likely to get the job before females...even when it comes to strength and doing stuff, like girls can't do this because you're not strong enough"*.

These comments provided evidence of the contrast between males and females in both context and language. Many of the male participants used the word strength as something which they viewed as positive and saw as giving them an advantage, while a number of the female participants saw strength as a negative and something which would disadvantage them and limit their opportunities. These particular examples are relevant in the context of occupations, but similar findings were also seen in the context of sports.

7.3.1.4.2 Girls struggle to play competitive sports

The subtheme *girls struggle to play competitive sports*, captured the female participants' thoughts on their experience with sports. The data showed that, like physical strength, there was a notable difference in how both genders viewed their ability to play competitive sports. Males

appeared to speak from a position of confidence and ease in their ability to play, if they were good enough, while interview data revealed that females did not feel as if they were taken seriously and were limited by their gender.

One female participant commented about her love of football (soccer) and her desire to be able to play more competitively, *“I have been in situations where I’ve played with a group that was male dominated, and no one wanted to pass to me and when they did, I could tell that they were being nice not like equal”* (Participant 4). However, a different perspective was given by a male Participant who reported, *“When I used to play football, sometimes we had girls on the team as well, but obviously, they didn’t play as much...”* (Participant 6). The use of the word *“obviously”* seems to imply that it was taken for granted that females would not be expected to play as frequently as the males. This view was supported by another male participant who commented, *“I feel like girls are more doubted when it comes to sports, whereas men are supposed to be dominant and always looked upon to be the best in sports, which shouldn’t really be true”* (Participant 19). In this instance, the use of *“shouldn’t”* versus *“isn’t”*, may highlight the male student’s own internalised stereotypes as it still implies that he may have some doubt about whether it is or isn’t true that males are more *“dominant”* and *“the best in sports”*.

These comments provided evidence that through their experiences and internalised stereotypes, many females believe they are not able to fully participate or be taken seriously in competitive sports, especially football (soccer) which was used as an example, more than once, for both genders. In addition, the data appears to support that males come from a position of strength and confidence, while females struggle to play competitively and feel less than equal.

7.3.1.4.3 Girls limit their opportunities based on their beliefs and experiences

The data showed that female participants limited their opportunities based on both physical and emotional reasons as a result of their beliefs and experiences. A few female participants mentioned how having their period prevented them from participating in sports. Participant 2 reported, *“If I want to exercise, but if my period is on, I can’t”*. Another participant commented that she sometimes missed out on participating if she felt outnumbered,

“...There’re obviously some things where I felt more comfortable doing than others because, for example, there might not be as many girls’ activities, so I will be like, oh, do I really want to go and do this, Um, generally no.” (Participant 3).

While another participant, let her beliefs about her desire to become a professional sailor as ultimately incompatible with her ability in having a family.

“Sometimes I think I want to professionally sail because that makes me happy but that’s just looking at myself because I want a family as well, and if I’m sailing all the time, I’m not going to be with my husband and kids if I have any. So, I won’t be happy...”.

(Participant 5)

Moreover, female participants limited themselves because they felt intimidated. Participant 4 explained,

“I think it’s more intimidation because I’ve been in situations where I don’t want to put myself in, because I knew, like oh, they’re probably better or they’re stronger, they’re going to look down at me. So, I feel like we’ve always been underestimated”.

These comments provided evidence that, for a variety of reasons, females often make a conscious decision ahead of time by assuming they cannot or should not do something and then based on that experience or belief, they act on that assumption. A variety of the examples from the female participants were based on experiences such as, being shamed for the clothing they wore or having their period, but it nonetheless resulted in a withdrawal from an opportunity. This evidence suggests that females have a number of limiting beliefs which may disadvantage or limit their future opportunities.

7.3.1.5 Influence of Others

In analysing the interview data, the last theme developed was ‘Influence of Others’. This theme was supported by two subthemes: *parents’ contribution to occupational stereotypes* and *female role models are important to girls*.

7.3.1.5.1 Parents contribute to occupational stereotypes

In analysing the interview data, parents are seemingly wittingly or unwittingly contributing to the reinforcement of occupational stereotypes. A couple of the female participants were able to describe, in detail, when they first became aware that certain careers were gender stereotyped. One female participant described the process of how she was encouraged to stay within the traditional occupational stereotypes,

“When I was young, my daddy was a firefighter and, of course, I didn’t understand and was like, maybe I could be a firefighter. I saw like two or three girls being a firefighter, but of course, as I grew up that was just not...a woman’s career. So that went out. So, of course, I had my parents, well my daddy really, he wanted me to go into more occupations that women go into. He was like, maybe you should become a nurse, maybe

a vet or something like that. Like when I look back now, it is clear to me, like, this is the men's jobs and this is the women's jobs that was being instilled in me". (Participant 2)

Another female participant commented not only on family pressures but also on her own observations of gendered occupations,

"My parents always wanted me to go into higher studies...and then the stereotypes that women are better at languages and history...that to me, like that had a huge impact on me because I wanted to be an actuary. And of course, people were like, oh, that's a man's job because more men are in the field". (Participant 16)

These comments highlighted the tension students felt between familial expectations and occupational stereotypes, which are then reinforced through their own experiences as they grapple with gender expectations and stereotyping beliefs. Female participants expressed not only feeling gendered expectations from their parents as they were considering possible careers, but then having those stereotypes confirmed when they were out in society or specifically the workplace, as expressed above.

7.3.1.5.2 Female role models are important to girls

Lastly, the subtheme *female role models are important to girls* came up frequently from the female participants. For many of the participants, female role models were important and were mentioned in a variety of contexts. Several female participants specifically identified the importance of their mothers as a positive role model. This sentiment was captured by Female Participant 3, who commented, *"my mum is a doctor, so I see it as...no limitations"*. Female Participant 5 emphasised, *"I have my mother who supports me...She's been a great role model.*

Nothing is holding me back'. In addition, another participant commented on the role media is providing them with positive counter-stereotypes for occupational choices, "*for example, Grey's Anatomy, a lot of their surgeons are female*" (Participant 4). Finally, a female participant highlighted the importance of acting as a role model for the younger generation explaining, "*I want my sister to look up to me...I want my life to push her to do more and don't settle for less*". (Participant 10).

These comments provided evidence from the data, that the female participants were positively impacted by female role models, especially their mothers. It appears that the female participants were not only inspired by close family but also more distant role models that countered their own stereotypical beliefs, such as the female surgeons on *Grey's Anatomy*. In addition, female role models also seemed to act as inspiration to become role models in the future.

7.4 Chapter Conclusion

In conclusion, the findings of the qualitative phase of this research produced evidence for five overarching themes: '*Flexibility and Future Success*', '*Awareness and Influence of Stereotypes*', '*Internalised Stereotypes*', '*Limiting Beliefs*', and the '*Influence of Others*'. These themes were used to address the research question and highlight the differences in how male and female students perceive and experience gender stereotyping beliefs, cognitive flexibility and career aspirations.

The next chapter, chapter eight, will provide the reader with the unique contributions of the research. The chapter then carefully interprets the quantitative results from the surveys to answer research questions one and two. Lastly, the qualitative findings from the interviews are then

analysed providing a context for the study through the beliefs and experiences of the participants, addressing research question three.

Chapter Eight – Discussion

8.1 Overview of the Chapter

The present study was a mixed methods investigation exploring cognitive flexibility, gender stereotyping beliefs and career aspirations of 16- to 18-year-old late adolescent students in Bermuda. This chapter presents the results of both the quantitative and qualitative research of the investigation. The chapter begins with a summary of the unique contributions the research has to offer our current understandings.

The chapter then presents the findings as they relate to both seminal and current research, with the theoretical and methodological contributions embedded within the discussion. In addition, and in keeping with the theoretical lens of GST, the results of the exploratory data will be examined by gender and presented.

8.2 Unique Contributions of the Research

The heart of this research has been to better understand factors which will support Gen Z's late adolescents as they aspire towards their future careers. The study made several unique contributions to the literature's theoretical and methodological understanding of how cognitive flexibility and gender stereotyping beliefs influence the career aspirations of 16- to 18-year-old late adolescents.

8.2.1 Theoretical Contribution

From a theoretical perspective, this study has significantly contributed to what we know about the relationship between cognitive flexibility, gender stereotyping beliefs and career aspirations for the late adolescent generally, and specifically in Bermuda. The study found that not only does higher cognitive flexibility correspond with higher career aspirations, but higher

cognitive flexibility can also be considered a predictor for higher career aspirations. This means that the more a late adolescent can overcome and adapt to new and challenging circumstances, the higher their career aspirations. This was inclusive of educational, leadership and achievement aspirations and was true for both male and female participants. In addition, these results were established free from the more typical view of career aspirations found within the parameters of prestige (Beal & Crockett, 2013). This study was in line with expectancy value beliefs, which “*are the most proximal psychological predictors of career plans and aspirations*” (Gao & Eccles, 2020:2).

This study’s findings build on what we already know, that increased cognitive flexibility is associated with confidence in career choices (Kercood et al., 2017), increased career adaptability and optimism (Kirikkanat, 2022) and is a predictor for positive career planning attitudes (Yildiz-Akyol & Boyaci, 2020). These results are significant because higher cognitive flexibility is already established within the literature as associated with positive well-being (Demirtas, 2020; Okan Er & Deniz, 2022; Wu et al., 2021), mental health (Kashdan & Rottenberg, 2010) and plays a mediating role in tolerating uncertainty and perceived stress (Demirtas & Yildiz, 2019). As such, cognitive flexibility may be viewed as a supporting and protective factor to develop and cultivate in students. Increasing a late adolescent student’s ability to shift and overcome challenges can help to support them to increase their flexibility, and better cope with disappointments, ultimately supporting them against factors which may negatively influence their future careers. This means that the more a late adolescent can overcome and adapt to new and challenging circumstances the better able they are to overcome adverse circumstances, such as harmful gender stereotypes.

Further, this study found that those students who perceived the male role as a more traditional stereotypical role are not only associated with higher career aspirations (inclusive of educational, leadership and achievement aspirations) but a traditional male stereotype is also a predictor. This is consistent with some of the literature (Raffaele Mendez and Crawford, 2002) but contradicts others (Ginevra & Nota, 2017; Kimaro & Lawuo, 2016), highlighting the uncertainty which persists. However, this finding was particularly significant within the Bermuda context as it shows that participants saw the male stereotype role as a more traditional role, while the female stereotype role is seen as one of shared or equal responsibility.

Moreover, when gender was taken into consideration, female participants perceived both the male and female role as one of shared or equal responsibility. In contrast, the male participants perceived the male role as a more traditional, stereotypical role, while the female role was perceived as one of shared or equal responsibility. This is a critical finding within the Bermudian context as it highlights a disconnect and implies an unequal distribution of labor between, not only how male and female late adolescents see their roles, but how they are influenced by gender stereotyping beliefs. This disconnect can have both personal consequences (such as unmet expectations and division of labor concerning childcare and domestic chores) and societal (in that it may limit or restrict future career aspirations). This was further evidenced within the Bermudian context when Jethwani (2015) found that teachers' perceptions of gender stereotyping beliefs were negatively influencing male students. Therefore, it is worth considering whether cognitive flexibility could act as a protective factor against harmful gender stereotypes for late adolescent students who do not identify with a traditional male stereotype role in relation to their career aspirations. Flexibility with gender stereotypes has been shown to increase career opportunities (Ginevra & Nota, 2017; Raffaele Mendez & Crawford, 2002).

8.2.2 Methodological Contribution

From a methodological standpoint, this research was novel within the literature in its use of both its design and sample. The research design was a mixed-methods design, incorporating both surveys and semi-structured interviews. It differed from cross-sectional designs (Bolat & Odaci, 2017; Ginevra & Nota, 2017; Hadjar & Aeschlimann, 2015) or research drawing from large datasets from previous generations (Barrett, 2021; Beal & Crockett, 2013; Gutman & Schoon, 2012). As a result of the mixed method research design, the study saw both the quantitative and qualitative research uncover significant evidence for each of the research questions, capturing a layer of texture and authenticity unattainable through solely quantitative research. In particular, this was seen through the discrepancy of the data collected between the quantitative and qualitative data investigating gender stereotyping beliefs. The quantitative research explored the participants' beliefs and views of gender stereotypes, while the qualitative research investigated the participant's perception of gender stereotypes.

The quantitative research established that both men and women who perceive a male stereotype as more traditional have higher career aspirations. In contrast, men and women who perceive a male stereotype to be one of shared and equal responsibility are not associated with higher career aspirations, as originally hypothesized, nor do they have lower career aspirations. However, the triangulation of the qualitative research significantly contributed to the literature by increasing our understanding of the participants perception of harmful gender stereotyping beliefs. The qualitative data highlighted the adverse influences those perceptions had on career aspirations, regardless of how the participants perceive a male stereotype. Critically, the participants from Generation Z were able to give voice to their experiences and perceptions, and at the same time, uncover subjective values towards their career aspirations.

Finally, the research sample was unique, in that it represented an under researched population of late adolescent participants in Bermuda. The quantitative research captured 42% of the 16- to 18-year-old participants who attend either a public or private secondary school and are gender, race and ethnicity diverse. Much of the prior research in Bermuda has investigated career development, capturing Black, male late adolescent students in the public-school setting (Douglas, 2012; Duncan, 2012; Jethwani-Keyser, et al., 2012; Mincy et al., 2009) and a cross section of undergraduate students (deShield, 2014). Critically, there is even less research examining the influences of gender stereotypes and career aspirations with only the one study found, which focused on the early adolescent (Jethwani, 2015).

8.3 Research Questions

8.3.1 RQ1 - *What is the relationship between cognitive flexibility, gender stereotyping beliefs and career aspirations of the 16- to 18-year-old late adolescent?*

8.3.1.1 Cognitive Flexibility and Career Aspirations

This study explored what the relationship was between cognitive flexibility and the career aspirations of the late adolescent. It was hypothesised that if a student had high cognitive flexibility their career aspirations, in turn, would be higher and vice versa, a student with low cognitive flexibility would have lower career aspirations. The results from the surveys showed a significant positive relationship between high cognitive flexibility and high career aspirations for 16- to 18-year-old late adolescents, meaning that higher scores in cognitive flexibility were moderately, positively correlated with higher scores in career aspirations. In addition, cognitive flexibility and both of its subscales, Alternatives and Control scales had small to medium positive correlations with career aspirations and its three subscales: Educational, Leadership and Achievement Aspirations. The results can be interpreted as the more a student is able to adjust

and cope with a variety of life's stresses, the more positive influence it has on all aspects of their career aspirations, including their educational, leadership and achievement aspirations.

The research question, exploring the relationship between cognitive flexibility and career aspirations of late adolescents between the ages of 16- to 18-years-old, addressed a significant gap in the literature. This researcher was unable to identify any other studies that specifically explored and addressed this topic. Similar research has established high cognitive flexibility with positive career futures (Yildiz-Akyol & Boyaci, 2020), and high cognitive flexibility with career adaptability and optimism (Kirikkanat, 2022), both studies operationalising cognitive flexibility the same as the present study. In addition, Kercood et al. (2017) contrasted the present study in methodology, using an experimental design and operationalised cognitive flexibility differently, finding that higher cognitive flexibility was associated with higher levels of confidence in career choices. It is also worth noting, similar to this present study, that an exploratory analysis indicated that there were no gender differences in cognitive flexibility for both the subjective and objective cognitive flexibility results of the survey participants in Kercood et al. (2017).

However, when an exploratory analysis was conducted on the survey results of the career aspirations data in the present study, a significant difference in gender was demonstrated, with the female participants in Bermuda showing generally higher educational aspirations than their male counterparts. This finding was supported by Jethwani (2015) who found a significant educational attainment gap between Black male and female early adolescents in their first year of secondary school. In addition, these results are not novel and are consistent with several large-scale longitudinal studies (Barrett, 2021; Huang, 2009; Schoon & Polek, 2011) and a cross-sectional survey (Ramaci et al., 2017). It is interesting to note, that Schoon and Polek's (2011) longitudinal study reflects the thinking of teenagers born in the United Kingdom between 1958

and 1970, showing consistent results with female participants in Bermuda in 2020. However, Schoon and Polek's study (2011) also differed from the present study when they found that females were more ambitious in their occupational aspirations. Further, Ramaci et al. (2017), similar to this study, surveyed late adolescents and found that Italian female students expressed a greater desire to continue their education, contrary to their male counterparts who instead preferred alternative education such as military careers.

These findings were supported by both the survey results and interview data from this present study, when interestingly, two of the male students expressed their desire for alternative career paths with reduced educational requirements and one expressed a desire to follow a military career. However, concerning within the Bermudian context, when Jethwani-Keyer et al., (2012) interviewed late adolescent Black males from a Bermudian public secondary school, findings revealed that the young men were limiting their educational aspirations because they struggle with the application process and are not being adequately counseled in the school setting (Jethwani-Keyer, et al., 2012). This study's findings and Jethwani-Keyer et al. (2012) support the need for strong, comprehensive career counselling for students within the Bermudian context.

8.3.1.2 Gender Stereotyping Beliefs and Career Aspirations

This study explored the relationship between gender stereotyping beliefs and career aspirations of the late adolescent. It was hypothesised that participants who perceived gender roles as more traditional and stereotypical (either male or female) would have lower career aspirations, while participants who perceived gender roles as one of shared or equal responsibility role would have higher career aspirations. The results from the surveys were mixed and, contrary to the hypothesis, showing a significant relationship between those

participants who perceived the male role as a more traditional stereotypical role had higher career aspirations, meaning that scores associated with a more traditional male stereotype role were small to moderately correlated with higher scores in career aspirations.

Significantly, and again contrary to the hypothesis, the survey results also indicated that participants who perceived the male role to be a more traditional, stereotypical role were positively associated in all aspects of career aspirations. This means that students who perceived a male role to be a more traditional stereotypical role were found to have higher career aspirations, inclusive of future educational, leadership and achievement aspirations. In contrast, and in line with the hypothesis, the survey showed that students who perceived the female role, as one of shared or equal responsibility, were positively correlated and had higher levels of leadership aspirations.

Gender stereotyping beliefs, for this study, were operationalised as views and attitudes towards gender role stereotyping biases (Mills et al., 2012). The research question exploring the relationship between gender stereotyping beliefs and career aspirations explored a different angle of career aspirations literature for the late adolescent. Much of the literature is focused on a gap in career aspirations along gender lines (Barrett, 2021; Gutman & Schoon, 2012; Watts et al., 2015) or focused on gender stereotyping beliefs solely within a STEM context (Hadja & Aeschlimann, 2015; Jasko et al., 2020). However, there is limited research exploring the role gender stereotyping beliefs play in career aspirations and even less is available examining the late adolescent.

As mentioned above, the survey results indicated that participants who perceived the male role to be a more traditional, stereotypical role have higher levels of career aspirations, inclusive of future leadership, educational and achievement aspirations. Building on the present

study's research, these results were similar to Raffaele Mendez and Crawford (2002) who showed that gifted early adolescent students (both girls and boys) who identified with a more traditional male stereotype had higher career aspirations or aspired to more male dominated careers associated with prestige and higher levels of education. What is particularly interesting about Raffaele Mendez and Crawford's study (2002), unlike the present study, is that career aspirations were measured through the lens of prestige, offering a narrower view in capturing what the different genders may value in careers. This is important, because a previous study by Raffaele Mendez and Crawford (2000) had established that gifted girls scored significantly higher on masculinity than their nongifted peers.

Taking these findings and the present study into consideration is important because generally a male stereotype is associated with power while a female stereotype is associated with warmth (Rudman & Phelan, 2010). Therefore, the present study may provide an insight into why Bermudian participants may be identifying with the traditional male stereotype role in the context of career aspirations. Given Bermuda's high cost of living and direct exposure to the international business sector, a greater understanding by the participants, for the need for higher career aspirations may be motivated towards not only surviving but thriving in Bermuda's complex and expensive environment.

Contrary to these results, Kimaro and Lawuo (2016) found no relationship with Tanzanian high school students' gender stereotype beliefs and their career paths. A study by Shin et al. (2019) had different results again and found that a group of South Korean undergraduate female students were negatively affected by implicit gender-career stereotyping beliefs when considering the role self-efficacy plays in the career decision making process. These mixed results drawn from a wide diversity of cultures and demographics highlight the gap in our

understanding of how much gender stereotyping beliefs influence late adolescents' career aspirations especially when considering the cultural context of the sample.

In addition, survey results from the present study also revealed that participants who perceived the female stereotype role, as one of shared or equal responsibility, had increased leadership aspirations. This is significant when addressing the under-representation of female leaders, as leadership aspiration has been found to be a “*key predictor of hierarchical advancement*” (Fritz & Knippenberg, 2020:741). These results indicate a desire from the female participants to aspire to leadership roles but a societal disconnect given the current underrepresentation of female leaders in Bermuda. These results provide an opportunity for educational and youth leaders to focus on leadership development for female late adolescents in Bermuda.

Further, as mentioned in section 6.3.1.3, the analysis of gender stereotyping beliefs found that the participants perceived the male role to be a more traditional, stereotypical role and the female role as one closer to a role of shared or equal responsibility. When the participants' responses were analysed by gender a different view emerged for females, who perceived the male role as one of shared or equal responsibility. This result highlighted a disconnect in expectations in how male and female participants perceived the male role. This disconnect is important to better understand as it has the potential to influence future relationships and expectations for both genders and was especially unsurprising in the more patriarchal Bermudian context (see section 2.3.5.2).

Results of the gender differences in the present study run contrary to previous research and highlight the present study's unique research context. This study's results established a

significant difference between male and female participants. This contrasted with Mills et al. (2012), who did not find a significant statistical difference when developing the GRSS. Similarly, a more recent study by Greenburg and Gaia (2019), using the GRSS to measure gender stereotyping beliefs, while exploring predictors of attitudes towards transgender individuals, found both the male and female gender role stereotype as equal responsibility with only a slight lean towards more traditional attitudes for the male stereotype scale.

It could be argued that the difference in the present study's results may be due to the patriarchal context within the Bermudian setting and help explain why these results were statistically significant. Results might also highlight a possible disconnect for Bermudian men and women as their expectations for gender roles appear to be significantly different. Given that these three studies are almost a decade apart, vary considerably in demographics, and measure gender stereotyping beliefs with the same scale, this supports generalisation for the findings of this present study within different age groups and demographics and indicates that, generally speaking, the male stereotype role is viewed more traditionally than the female stereotype role in Bermuda. These findings have significant implications for both educational practitioners and policy makers, which will be discussed in Chapter Nine.

Importantly, while results over the years have varied, this present study highlights the lack of progress since the Raffaele Mendez and Crawford (2002) study. It appears that twenty years on, male students may still be limiting their access to a variety of careers because of traditional gender role attitudes and beliefs. Additionally, when examining the Raffaele Mendez and Crawford (2002) results against the present study, it offers insight into how early gender role stereotypes are influencing career aspirations and are already becoming ingrained in younger adolescents. To support this conclusion, a recent review on gender stereotypes in early childhood

(0 – 7 years) by Culhane and Bazeley (2019) found that gender stereotyping behaviors begin early in life, limit many children and can cause significant problems not just to an individual but society in general in later life.

This study's data has produced some compelling results which support the hypothesis that, within the current geopolitical context in Bermuda, gender stereotyping beliefs have a significant influence on the career aspirations of 16- to 18-year-old late adolescents. As mentioned in Section 2.2.2, this study's findings support the researcher's belief, based on professional and personal experience, that the research context for this study is situated in a relatively patriarchal context and that the female participants are largely working within these gender stereotyping constructs. This gender stereotyping construct sees males adhering to a more traditional male stereotype role while females balance between a role of shared or equal responsibility. It can be extrapolated from the study's findings that the female participants see themselves as having to balance between the role of a wage earner while also sharing in and, at the least, equal responsibility with household chores and the nurturing and well-being of a family. However, young men see themselves in a more traditional role as the wage earner and provider without the equal responsibility to share in household and family responsibilities. In addition, as the literature has shown these results may also be argued, are representative of a larger context outside of Bermuda.

8.3.1.3 Cognitive Flexibility and Gender Stereotyping Beliefs

This study also explored the relationship between cognitive flexibility and gender stereotyping beliefs of late adolescents. It was hypothesised that a participant who had high cognitive flexibility would perceive gender roles as shared or equal responsibility role, while

students with low cognitive flexibility would perceive gender roles as more traditional. The results from the surveys were mixed showing a significant negative relationship between those participants who perceived the male role to be a more traditional stereotypical role and the Control subscale. Therefore, it may be concluded that participants between the ages of 16- to 18-years who perceive the male role to be a more traditional, stereotypical role have an increased ability to perceive difficult situations as controllable.

This result is similar to historical studies which concluded that a more traditional masculine stereotype led to increased cognitive flexibility (Anderson, 1986) or better mental health (Bassoff & Glass, 1982; Shakya et al., 2019). However, a recent study conducted by Renk and Creasey (2003) provided a more nuanced result establishing gender stereotyping as a good predictor for coping strategies, with those late adolescents identifying high in masculinity demonstrating higher levels of problem-focused coping and those identifying as high in femininity demonstrating higher levels of emotion-focused coping. In addition, contrary to the present study, Ginevra and Nota (2017) found that increased problem-solving skills, which they associated with cognitive flexibility (Heppner, Witty & Dison, 2004) were correlated with a more flexible gender stereotype mindset as it related to jobs. Similar findings were established by Raffaele Mendez & Crawford (2002) who found that gifted early female adolescents were significantly more interested in a variety of careers than males. As one would expect, this translated into female students ruling out fewer careers than the males with males preferring male dominated career options. In addition, the female students were found to have more gender-role flexibility with their career aspirations in studies using the same measurements as the present study (Raffaele Mandez & Crawford, 2002).

These inconclusive results support the important role which the interview findings of this study play in providing a better understanding of the relationship between gender stereotypes and cognitive flexibility.

8.3.2 RQ 2 - *What factors predict career aspirations of the late adolescent?*

It should be noted that this research question was added after the data was collected and analysed, establishing strong correlations in the quantitative data for RQ1. As a result, it was recommended that a regression analysis should be run. Therefore, the discussion for RQ 2 is significantly shorter than that of RQ1 due to overlap of the literature. No additional literature was found which focused solely on the question of prediction for either cognitive flexibility or gender stereotyping beliefs that had not otherwise, already been discussed within the context of RQ1.

This study explored whether cognitive flexibility and/or gender stereotyping beliefs could predict the career aspirations of the late adolescent. It was hypothesised that participants' cognitive flexibility (including the two subscales, Control and Alternatives) and the Male Stereotype (excluding the Female Stereotype as they were not found to be significantly correlated with career aspirations) would be predictors of late adolescent students' career aspirations. The results from the multiple regression analysis established that Control, (the ability to perceive difficult situations as controllable), Alternatives, (the ability to perceive multiple alternative explanations for life's occurrences and ability to generate multiple solutions to difficult situations) and the Male Stereotype (perceiving a more traditional, stereotypical male role) were predictors of career aspirations for the participants.

This means that educational practitioners are in a better position to predict those students who can manage adverse situations, understand and create multiple explanations and solutions

and identify with a more traditional male role (power) will have higher career aspirations. Alternatively, those students who struggle to manage adverse situations, find it difficult to understand and create multiple explanations and solutions and do not identify with a more traditional male role will have lower career aspirations. These findings have implications for the educational practitioner, college counsellor and policymakers to inform both practice and policy, which will be discussed further in section 9.3.

This study's finding is partially supported by Yildiz-Akyol and Boyaci (2020) who found cognitive flexibility was a significant predictor of career adaptability and career future planning. However, they contrast with Kirikkanat (2022) who found no predictive role for cognitive flexibility on career optimism. These conflicting results, plus taking into consideration this study's findings highlight the need for future research outside of Bermuda, while still focusing on the late adolescent.

Importantly, taking into consideration that cognitive flexibility can predict well-being (Demirtas, 2020; Kasdan & Rottenberg, 2010; Jen et al., 2019), this research helps to further highlight the influence which cognitive flexibility could have as a protective factor for late adolescent students as they aspire towards their future career but also buffering them from stress and negative experiences (Demirtas, 2020). Further research is needed to explore the relationship between cognitive flexibility, well-being and career aspirations.

8.3.3 RQ3 - What are Students' Perceptions and Experiences of Gender Stereotyping Beliefs and Cognitive Flexibility as they Relate to their Career Aspirations?

Gender Schema Theory has served as the theoretical lens throughout this study and provided an oversight to ensure that females get an opportunity to be heard and that disadvantages based on their gender are highlighted (Bem, 1983). As well, Eccles (1994; 2011),

Expectancy-Value Theory has provided the theoretical construct for how career aspirations are viewed, ensuring that subjective values are considered within a broader construct than simply prestige. The use of semi-structured interviews enhanced this study's ability to monitor gender advantages and disadvantages, as well as the subjective task value, meaning "*a quality of the task that contributes to the increasing or decreasing probability that an individual will select it*" (Eccles, 2009).

8.3.3.1 Gender Stereotyping Beliefs and Career Aspirations

Analysis of the data suggests that the themes or parts of the themes '*Awareness and Influence of Occupational Stereotypes*', '*Internalised Stereotypes*' and '*Influence of Others*' contribute to the strong relationship between gender stereotyping beliefs and the career aspirations of the participants interviewed. Unsurprisingly, and of particular interest, was the different relationship to gender stereotyping beliefs which male and female participants experience when considering their career aspirations and the values they assign to those aspirations.

Critically, while the survey results showed participants who identified with a more traditional male stereotype role had higher career aspirations, powerful, nuanced findings from the semi-structured interviews gave a more complex understanding. Interview findings provided evidence that career aspirations of the participants were strongly influenced by gender stereotyping beliefs. The data highlighted participants' awareness and influence of occupational stereotypes and how these stereotypes may become internalised for both the male and female participants. Participants were shown to be aware of occupational stereotypes but were influenced by them quite differently with female participants ranging between optimistically

viewing that things had or were changing with stereotypes becoming less relevant, while male participants voiced an understanding of the advantage occupational stereotypes could bring them.

Generally, the male participants viewed the influence of occupational stereotypes as giving them an advantage (albeit volunteering that this was not right), while female participants saw, to a varying degree, occupational stereotypes as a disadvantage. Moreover, despite female participants generally reporting optimism about the future direction of occupational stereotypes, the large majority had beliefs and accompanying experiences that their gender would be a disadvantage within the workplace. As a result, the evidence from the interviews suggests that knowledge of occupational stereotypes is influenced by both gender and the level of optimism that a participant is feeling towards his or her future career. This finding was supported by Watts et al. (2015) who found that female undergraduates anticipated more barriers to their future career advancement.

The survey data established that participants who perceived the male role as a more traditional stereotypical role have increased career aspirations. Further, the interview data helps to substantiate results, finding that gender stereotyping beliefs may both increase or decrease career aspirations, largely dependent on the participant's gender. Unsurprisingly, analysis of the interviews showed that gender stereotyping beliefs generally had a negative influence on the female participants and lead to lower career aspirations. This finding is supportive of other studies with similar results (Culhane & Bazeley, 2019; Watts et al., 2015), while contributing towards a positive influence for the male participants leading to higher career aspirations. This was evidenced by the male participants who acknowledged that they were aware of the advantage gender stereotypes gave them and believed that the stereotypes would work to their benefit.

This finding supports other studies that males generally pick careers that are higher in career aspirations (Barrett, 2021; Raffaele Mendez & Crawford, 2002; Weisgram et al., 2010). Interestingly, this finding contrasts with Shapiro et al., (2015) who found that early adolescent, male students expressed less confidence across all aspects of their future careers in comparison to the female students. However, similar to the present study, the male participants still believed that there were some jobs that they were better at than females. Additionally, the male participants believed that they would have more career opportunities than the females, which was also supported by the present interview data. These findings show how males ultimately believe, even when they have less confidence than females, that they will have better prospects and more opportunities than their counterparts. Not only does it seem that males have gender stereotyping beliefs seemingly working to their advantage for increased occupational opportunities, but as Igbo et al. (2015) found, gender stereotypes also have a significant positive influence on the academic achievement of male late adolescents.

Analysis of the present study's interview data also uncovered gender stereotyping beliefs which had been internalised by the female participants and how those beliefs had gone on to negatively influence their behavior. For example, one of the findings showed that female participants had internalised a number of workplace stereotypes such as having to work for less pay, having less opportunities for promotion, having to work harder than their male counterparts and being underestimated. These stereotypes were perceived by female participants as a disadvantage for their future careers. These findings were supported by Jasko et al. (2020), who found that female graduates with a STEM major, reported more difficulty in finding a job than their male counterparts. In addition, they reported that the graduates had received fewer job offers, had more difficulty finding a job which was consistent with their education level and that

they had a reduced salary compared to the male graduates. As predicted by some of the female participants in this present study, Jasko et al. (2020) also confirmed that regardless of having the same or similar educational qualifications, the male graduates' professional situations were more positive than the females.

More worryingly, results from a recent longitudinal study, again within the context of STEM related jobs, presented similar results (Seo et al., 2019). This study is compelling because it followed American late adolescents in the tenth grade, from a large dataset over a ten-year span, allowing for longitudinal patterns to emerge. Seo et al. (2019) found that when men and women were equally qualified in a STEM related field, women were less likely to access STEM-related jobs. Thus, these results provided a developmental arc of the students' late adolescence into adulthood with its longitudinal design, large sample size and age of participants providing compelling validation to the thoughts, feelings and opinions expressed by the female participants from this present study.

In addition, this study supported the already established understanding that parents contribute to traditional occupational stereotypes (Chaffee & Plante, 2022; Schuette et al., 2010). Some female participants were able to relate very specific stories of their youth when they remembered conversations with their parents telling them certain occupations belonged to certain genders. These sentiments expressed were similar to a study by Li and Kerpelman (2007), who found that females were willing to change their own career goals in order to fall in line with their parents' expectations. Further insight was gained in the power relation between children and parents by Liu et al. (2020), whose findings suggested that due to a parent's multiple positions of power, these positions of power will ultimately go on to affect a young adult's long-term career outcomes.

Not only were parents found to directly influence the female participants, but female role models were seen as positive influencers for career aspirations. Interestingly, in this study, mothers who were in positions such as a doctor or a business entrepreneur were mentioned as important role models and inspired their daughters to view their career options as limitless. The findings from the interviews were supported by Olsson and Martiny (2018) who concluded that exposure to a positive counter-stereotypical role model was positively associated with aspirations. Further, this present study also demonstrated that even an encounter from an on-going television series may provide a positive counter-stereotypical role model, such as the female surgeons on *Greys Anatomy*. Again, these findings were consistent with Olsson and Martiny's (2018) review who concluded that even brief exposure to a counter stereotypical role model in childhood or adulthood may be able to change female stereotypical beliefs. This was further supported by Brown and Weinberger (2021) with children as young as 10-years-old benefiting from short-term viewing of counter-stereotypical role models. In contrast, Rudman and Phelan (2010) found that when female undergraduates were exposed to successful women, they felt threatened.

Interestingly, these findings were supported from a different angle, with a study very similar to this present study in its theoretical approach and using the same measurement tool for career aspirations (Colaner & Rittenour, 2015). Colaner and Rittenour (2015) investigated the influence of gender socialisation on mother-daughter pairs and found that mothers who encouraged their daughters to play with stereotypical boys' toys and boys' activities helped their daughters develop a feminist identity, which was positively related to career aspirations. The study went on to conclude that "*the less daughters accepted traditional gender norms and male dominance, the more likely they were to aspire to a career*" (92), which directly supports the

interview findings from the present study that gender stereotyping beliefs played a significant role in the career aspirations for the female participants.

Given the mixed results from the surveys and the literature, the findings from the interviews not only highlighted the complexity of the research question but also the significance of using a mixed-methods design. To this researcher's understanding, few if any, mixed-methods studies have been used to provide nuance and insight into the extent gender stereotyping beliefs play in career aspirations of 16- to 18-year-old late adolescents within the global context. Interestingly, a qualitative study in Bermuda, by Jethwani (2015), found that gender stereotyping beliefs worked in early adolescent girls' favor, underscoring the need for future research.

8.3.3.2 Cognitive Flexibility and Career Aspiration

Analysis of the data suggests that the themes or parts of the themes, '*Flexibility and Future Success*', '*Internalised Stereotypes*' and '*Limiting Beliefs*' provide context and a more in depth understanding of the relationship between cognitive flexibility and gender stereotyping beliefs and how these two cognitive processes can influence participants' career aspirations.

The data from the theme, '*Flexibility and Future Success*' provided the study with an interpretation of what flexibility meant to the participants and, critically, that it was important for the participants' career aspirations. The participants saw flexibility as the ability to juggle their life well, while inflexibility was seen as the inability to do so. This was a real insight into how Bermudian, Gen Z, late adolescent participants view flexibility. Critically, both genders saw flexibility as important in their life, especially within the context of their education and future work life. Further, the two themes, '*Internalised Stereotypes*' and '*Limiting Beliefs*' seemed to influence the female and male participants differently. The male participants appeared to identify

with a more masculine gender stereotype and seemed to feel more empowered from their '*Internalised Stereotypes*', thus having the opposite effect than the female participants. The female participants appeared to internalise negative gender stereotypes which then created '*Limiting Beliefs*' which reduced their flexibility when trying new things. In contrast, the male participants had a sense of confidence and security from their internalised stereotypes which appeared to lead to increased flexibility.

The interview findings showed that gender stereotyping beliefs have a negative influence on female participants' cognitive flexibility. This was seen over and over through the internalised stereotypes and limiting beliefs identified in the interviews. As a result, the semi-structured interviews provided convincing evidence of the complexities with which gender stereotypes may inhibit flexibility and, in turn, create internalised stereotypes subsequently resulting in limiting beliefs. This was highlighted in the interviews which showed that participants felt that girls work harder than boys in trying to get their voices heard. Participants in the present study repeatedly discussed how girls not only worked harder but also consciously strategised in ways to be heard. The interviews also highlighted the role gender stereotypes played in inhibiting flexibility, which led the female participants to limiting beliefs about themselves in areas such as physical strength, playing competitive sports and lost opportunities.

This finding was also noted using differing methodology than the present study, in an ethnography conducted by Lahelma (2012). Lahelma (2012) followed two Finnish students over 10-years (from age 13 to 23 years) and reported that over the course of their school experience both female participants mentioned the difficulties they felt in trying to get heard over the male participants. This study is significant as it helps to validate the simple message that female

participants in Bermuda felt when they expressed some of their frustrations in getting heard and helps to transfer the findings of the present study outside of those participants interviewed.

In addition, while exploring the relationship between cognitive flexibility and gender stereotyping beliefs, female participants of the present study identified some powerful limiting beliefs. Contrary to their male counterparts, but reinforced in some cases by them, the theme of limiting beliefs emerged. Interestingly, some of the male participants substantiated these limiting gender stereotyping beliefs through their own comments, providing immediate qualitative evidence to support the female participants.

These limiting beliefs were particularly noted, but not exclusive, in relation to sports and physical strength. Similar findings by Kagesten et al.'s (2016) review of the literature, identified a similar theme to this present study, "*girls experience control and exclusion by male peers*" (p.24), which was illustrated through an example of participation in soccer. Again, a qualitative study by Swain (2000), which looked at how soccer influenced the construction of boys' masculinities in junior school, concluded that football is "*a key signifier of successful masculinity*" (p. 95) while girls are mainly excluded from the game. In addition, the game acts as a vehicle "*for the formation of masculine identities, with competitive displays of skill and strength*" (p. 95). These findings support this study's findings with concerning parallels and provide evidence that these limiting beliefs concerning sports and strength are being established at least by early adolescence. Ironically, it was participating in football (soccer) that was a recurring example for both the public and private secondary schools' females and males in this study as they discussed physical strength and sport. Female participants showed limiting beliefs based on pervasive gender stereotypes around strength, ability and belonging in competitive sports. These limiting beliefs appeared to reduce the female participant's flexibility and influence

on their willingness to participate, which may limit their future career aspirations in a sports related career. Alternatively, when considering these findings in context with Kagesten et al.'s study (2016), it could also be interpreted that sports and strength are ways in which the female participants experience control and exclusion. The feelings of control and exclusion could ultimately influence the female participants as they form career aspirations to avoid or exclude occupationally stereotyped professions.

Concerningly, the interview findings of this study highlight a particularly poignant reality that 16- to 18-year-old female participants' gender stereotyping beliefs are already well established. As a result, these gender stereotyping beliefs seem to be reducing the female participants' flexibility by limiting their beliefs in themselves and limiting the degree to which they allow themselves to access or participate in future opportunities based on their own beliefs or past experiences. This finding was supported by Sheppard's (2018) study which used a similar methodology and measurement to this present study's quantitative research as it explored gender differences in constructs associated with leadership aspirations. Sheppard found that female undergraduates had higher leadership aspirations than their male counterparts, similar to the survey results of the present study; however, the interview findings found that females saw themselves as less likely to be able to attain leadership positions in their future, and most concerning, perceived their leadership abilities to be lower than their male counterparts. Interestingly, the male participants expected to out earn their future spouses, while the female participants expressed less desire for elite leadership positions. One is left to consider that by the time female students become undergraduates, their internalised stereotypes and limiting beliefs have created a new reality offering them a more negative outlook for their future, in particular in their leadership aspirations (Lopez-Zafra et al., 2009).

A further study supported the present findings and highlighted the young age at which gender stereotyping beliefs are becoming well-established (Braun & Davidson, 2017). Braun and Davidson (2017) found that preadolescents indicated that regardless of their gender, students who participated in masculine activities were more preferred than those students who participated in feminine activities. If girls devalue their own activities by the age of ten, this present research suggests that instead of girls growing out of these beliefs and gaining confidence as they mature, this internal devaluing of their activities and abilities are instead becoming more ingrained and established as self-limiting beliefs as evidenced with the present study's interviews.

In addition, the interviews for the present study, found that the limiting beliefs which the female participants expressed extended into limiting their opportunities based on their personal beliefs and experiences. An example of this was seen in the interviews when female participants were seen already limiting their future career aspirations in an attempt to balance a future family which they did not yet have. These concerns were supported by Askari et al. (2010) when investigating the differences between the ideal and expected participation in childcare and household chores, as well as future expectations for division of labor between the males and females. Askari et al. (2010) found that unmarried, male undergraduates hoped for an equal share of labor, while female undergraduates expected that they would be required to do an unequal amount of both the household chores and childcare. Similarly, Shapiro et al.'s (2015) study with middle school students, found that eight times as many girls expected they will, at least temporarily, have to stop work to take care of young children. Thus, as early as 12 years old, girls may already be limiting their careers within the context of child rearing. These results are compelling as they help to add credibility to the findings of this present study, with its population

of culturally diverse, late adolescents who are considering their future work experiences. In addition, they are in line with Eccles (1994; 2011) Expectancy-Value Theory and the importance of the subjective value task, highlighting the probability that female late adolescent students may be selecting their future career choices based on the value they are attaching to their choice.

In summary, both the quantitative and qualitative findings, when considered, support a relationship between cognitive flexibility and gender stereotyping beliefs and the influences these two cognitive factors had on participants' career aspirations. In addition, as the data has shown, Bermuda situates itself within a more patriarchal structure, with the experiences of female participants in Bermuda supporting this finding and resonating with experiences of female participants and adults in other contexts and demographics.

8.4 Chapter Conclusion

In conclusion, chapter eight summarized the unique contributions of the research, including both the theoretical and methodological contributions. The three research questions were then discussed. The last Chapter, nine, addresses the limitations of the study with careful consideration of both theoretical and methodological considerations. Next, the implications of the research, within the context of theory, policy and practice, and future research are discussed. The thesis ends with concluding remarks.

Chapter 9 – Conclusion

9.1 Overview of the Chapter

The concluding chapter discusses the inherent theoretical and methodological strengths and limitations (Bryman, 2018) of the study. In addition, this chapter examines the implications of the study within the contexts of theory, policy and practice in both the fields of education and psychology. Finally, the study recommends future research and offers concluding remarks.

9.2 Limitations of the Research

Firstly, this study had some significant strengths in its theoretical considerations, in that it explored two novel cognitive processes in relation to career aspirations. However, a limitation of this study was the many definitions found for cognitive flexibility (Dennis & Vander Wal, 2010; Heppner et al., 2004; Kashdan & Rottenberg, 2010; Martin & Rubin, 1995; Savickas & Porfeli, 2012) in relation to any aspect of career development. This presented difficulties in finding research which specifically explored cognitive flexibility and career aspirations. However, a different angle in the literature review established compelling evidence linking cognitive flexibility with well-being (Demirtas, 2020; Fu & Chow, 2017; Odaci & Cikrikci, 2019; O'Donnell et al., 2017). As previously mentioned (see 2.3.6.2), this study adopted the definition used by Dennis & Vander Wal (2010), the ability to overcome and adapt to new and challenging circumstances, which was closely aligned to well-being.

In addition, this study was able to draw from some significant strengths in its methodological considerations, including a country wide survey of a 42% sample of the secondary students in Bermuda. However, it must be acknowledged that there were limitations to both the sample and design. First, 30% of the 42% study's sample was drawn from the private

school setting, resulting in a more representative sample from the private schools. In addition, when the partnership was negotiated with the Ministry of Education to include both the public and private schools, the demographics agreed for collection were gender, age and education setting (public, private or alternative setting). As a result, race, ethnicity or SES were not collected. Future research could include race, ethnicity and SES to investigate whether these additional factors affect career aspirations for late adolescents. In addition, it would be advantageous if the study could be replicated, not only including race, ethnicity and SES, but using a random sample from all of the secondary schools in Bermuda. This would then provide a greater understanding of the influences of career aspirations for late adolescents in Bermuda, representative of all demographics.

Further, the surveys and interviews all took place within the research context of Bermuda, limiting the sample to either Bermudians or residents of Bermuda. To address this issue, future research could replicate this study or aspects of this study in another country. This would assist in generalizing the findings and increase the reliability of the present study. In addition, future research could explore the same age group, paying special attention to see if similar themes are identified from the interviews. It would also be important to explore if cognitive flexibility and career aspirations were generalised across a variety of populations, ethnicities and ages to support expanding the way the literature looks at career development.

A second methodological consideration which should be acknowledged is the limitations which are inherent when using a mixed methods design. Firstly, surveys are a self-report of the student's own attitude, beliefs and opinions. As such, they are influenced by the cultural context from which the participants are drawn (Grimmell & Stern, 1992). In this study, five out of the six schools (except the researcher's school of employment) were administered by school personnel.

Therefore, a variety of teachers, counsellors and school administrators gave the initial instructions to fill in the survey. This limitation was offset by ensuring every school was provided with Standardized Instructions (Appendix M) to start the testing; however, it is possible the instructions were not followed. In addition, this study took place in schools, so it is possible that students were able to confer with each other and thus there is a chance of demand characteristics, biases or influence from other students. This limitation was countered by the large number of participants in the survey, which should help to minimise outside influences.

Further, there were some limitations which must be acknowledged with the use of semi-structured interviews. Nearly all the participants interviewed were in some way connected to this researcher, consequently that may have set up a power relationship where a participant may be less open. To counteract this possibility, time was spent at the beginning of the interview to establish a rapport and allow the participant to feel relaxed and at ease. In addition, the participants were all reassured at the start of the interview of the confidentiality and anonymity of the interview and results; however, it is impossible to tell if the participants would have responded differently if interviewed by an unknown researcher. Further, the semi-structured interviews, were all conducted by a female researcher. The researcher's gender may have had some influence on the responses the boys gave to the questions, specifically those concerning gender stereotypes. Special consideration was taken of this concern during the development of the Interview Guide (Appendix P). Questions were kept as neutral as possible, in an attempt not to convey bias towards one gender or ask leading questions. Finally, it is possible that demand characteristics influenced how some participants responded to the questions during the interview. The participants may have wanted to please the researcher (social desirability effect) as opposed

to being authentic. The Self-Reflexive Guide (Appendix Q) and the journaling after the interviews helped “keep the researcher aware” of any possible demand characteristics.

This was especially relevant for this study’s target age group, whose attitudes, beliefs and values are emerging and are often held very passionately. Again, and again, this researcher heard a participant’s voice come through clearly as he/she began to feel at ease with the interview and were encouraged to explore questions that may not have already been contemplated, or thought of within the contexts of flexibility, gender or their career aspirations.

9.3 Implications for Theory, Policy and Practice

The implications for these findings should be considered within three unique contexts: theory, policy and practice.

9.3.1 Implications for Theory

The findings of this research have significant implications for our *theoretical understanding* of career aspirations by highlighting the role that both cognitive flexibility and gender stereotyping beliefs have in the career aspirations of the participants. This research clearly established that higher levels of cognitive flexibility correspond to higher levels of career aspirations and higher levels of the traditional male stereotype correspond to higher levels of career aspirations. In addition, both cognitive flexibility and a person who perceives the male role as more traditional are predictors of career aspirations. As a result, the research contributes to our theoretical understanding of a novel cognitive process, outside of more traditional factors such as gender, parental education and parental expectations, which contribute to career aspirations.

In addition, this research also provided a more nuanced and authentic understanding of how cognitive flexibility and gender stereotyping beliefs influence career aspirations through the study's use of a mixed method design. Consequently, there are exciting theoretical implications to consider as we frame our understanding of cognitive flexibility and gender stereotyping beliefs and how these processes influence the career aspirations of the late adolescent student in Bermuda. However, caution should be taken when considering these theoretical implications, as this study does not wish to imply that encouraging a student to perceive the male role as more traditional and stereotypical is a viable route to increasing career aspirations. While the quantitative data supports this assumption, the qualitative data increased our understanding that even a perceived belief of stereotypes can influence students' career aspirations negatively. As shown in this study, and in the literature, this can be seen when female students do not select perceived male stereotypical occupations or male students do not select perceived female stereotypical occupations. Therefore, an important theoretical implication from this study is that gender stereotyping beliefs are far more complex when considering how they influence the late adolescent's career aspirations and cognitive flexibility has the potential to play a key role in supporting them along this critical journey.

9.3.2 Implications for Policy

The findings of this research also have important *policy implications*. The effects of gender stereotyping beliefs were well established, as supported by both quantitative and qualitative phases of the study. While the quantitative phase of the research highlighted some of the positive aspects associated with a traditional male stereotype role, the qualitative phase of the study provided evidence of the negative influences' stereotypes have on the female participants through internalised stereotypes and limiting beliefs. As a result, policy makers need to take

significant and proactive steps to ensure that the field of education is better represented with more males being encouraged to join the profession and females mentored to achieve leadership roles. In addition, both genders should be encouraged to teach subjects outside of the traditional courses typically associated with one gender over another. Policy makers need to be aware, and have an understanding, of current research so consideration of gender stereotyping beliefs align with education policy to fundamentally drive systemic change. Particular attention needs to be paid to those gatekeepers who are conflicted in maintaining the status quo versus making the systemic changes needed. Critically, policy makers need to encourage and put their support behind the educational institution, inclusive of researchers, administrators and teachers as they begin to shift these long-held belief systems. In addition, policy makers working in the fields of education and psychology need to consider emerging research as new and novel understandings of how cognitive flexibility may shift the way current practices are seen and experienced.

Relevant to Bermuda, the research was clear that there is a greater need to address the gender stereotypical perceptions seemingly pervasive within the country. Not only did the surveys establish that there a disconnect between the genders on male and female roles, but there was also a perception established in the interviews of a gender imbalance between opportunities for males and females. In addition, the female participants surveyed showed aspirations for leadership, while the male's responses highlighted a need for increased experiential opportunities outside of traditional higher education pathways. These needs may be individually addressed depending on a students' opportunities but will only achieve systemic change if policymakers drive increased pathways for late adolescent males and encourage and develop females for future leadership opportunities.

9.3.3 Implications for Practice

Finally, findings of this research have considerable *practical implications* for both the education and psychology fields. The influences of gender stereotyping beliefs were well established as supported by both phases of the study, those participants who perceived the male role as more traditional had higher career aspirations, while the perception of stereotypes though internalised stereotyping beliefs were evident from both male and female students. Supporting research shows that negative stereotyping beliefs are emerging as early as 4- and 5-years-old, which may result in negative intergroup behaviors (Halim, 2017). As a result, teacher training courses across all developmental stages (from early childhood to secondary teacher training) would benefit from a fundamental restructure to recognise the role gender stereotyping beliefs play in a student's career aspirations.

In addition, it was established that the higher the score in cognitive flexibility the higher the career aspirations for 16- to 18-year-old late adolescents' career aspirations. Therefore, the more a student is able to adjust and cope to life's stresses, the more positive influence this will have acting as a protective factor and supporting students generally and against harmful gender stereotypes. As a result, it is critical that teacher training courses not solely highlight the harm gender stereotypes can cause but also, offer and model solutions, such as cognitive flexibility.

In particular, initial *teacher education training (ITET)* programs would be an ideal environment to drive systemic changes in teacher awareness of gender stereotyping beliefs and their subsequent behavior in the classroom. ITET programs would benefit from a three-pronged approach aimed at the restructuring of the curriculum, sensitisation training for new teachers and continuing education for established teachers. The first prong would consist of a restructuring of curriculum to include gender studies and the impact of gender on a child's developmental

milestones and future development. The second prong would be for trainee teachers to undergo awareness and sensitisation training around their own personal gender stereotypes. Lastly, there is an enormous opportunity for teacher training programs to drive continuing teacher education training for established teachers. An emphasis on awareness, modeling and experiential learning for a seasoned teacher's unconscious biases and beliefs around gender stereotyping, followed by, explicit training in the use of gender-neutral language, gender free instruction in traditional stereotyped courses and encouragement of careers outside of traditional occupational stereotypes. This training should also include instructing new teachers on what cognitive flexibility is and the key role it can play in positively influencing career aspirations of students, particularly the late adolescent.

As mentioned above, the research established a positive correlation between cognitive flexibility and career aspirations. While this is a new area of research, there are exciting possibilities to consider in the area of *career counselling*, and in my own professional practice as a university career counsellor. It would be important to consciously expose and encourage both male and female students to a variety of occupations to provide an opportunity to expand their thinking and encourage flexibility in their career aspirations. If a counsellor is confronted with a student who is pushing back on a career because of a gender stereotype, that would be an opportunity to encourage flexibility and broaden his/her/their scope for alternative career options. In addition, a concerted effort should be made by career counsellors to gauge students' interest with the use of interest inventories to expand possible opportunities and encourage more flexibility with a student's career aspirations. Counter stereotypical role models may be used to support student flexibility and breaking down stereotypes.

Further, the qualitative phase showed how both parents and counter-stereotype role models can have both a positive and a negative effect on a student's career aspirations. A school career counsellor has an opportunity to expose students to positive stereotypes through career days and student internships, which also may help to expand a parent's vision of what is possible for their child. Importantly, when offering career counselling to the late adolescent, there were no gender differences found for cognitive flexibility; however, differences were identified with respect to career aspirations. This is helpful for educational practitioners, guidance and career counsellors when designing activities or programmes to increase cognitive flexibility. As such, robust career counselling is essential to support career aspirations and designed with the unique needs of both the male and female students and particularly in the Bermudian context.

The Bermudian context highlighted the differences between female and male participants' educational and leadership aspirations. The female participants had higher educational and leadership aspirations, while the males were more likely to look for alternative pathways in their educational aspirations. As such, it is important for educational practitioners and guidance and career counsellors to closely monitor students' career aspirations to best individualise need and provide support. In addition, educational and youth leaders will be better positioned to provide leadership and mentorship opportunities for female students who show an interest, while apprenticeships and internships can be provided to support male students seeking alternative pathways. Lastly, students should be closely monitored if they exhibit lower cognitive flexibility and supported as seen fit, but especially within the context of exploring a future career.

9.4 Future Research

As previously mentioned (see 2.3, 6.2, 9.2), this study used Dennis and Vander Wal's (2010) definition for cognitive flexibility based on a person's ability to cope and solve problems. This current research demonstrated how having a greater ability to be flexible may translate into being able to better cope and adjust to life's stresses. This is an important and critical area for future research which could aim to explore whether cognitive flexibility acts as a mediator for well-being, which can then support students to realise higher career aspirations. Attention also needs to be given to whether cognitive flexibility mediates well-being or whether well-being creates an environment that leads to increased cognitive flexibility. Furthermore, future research should monitor career aspirations as a possible indicator for well-being. If a student has little or no desire to aspire to a future career could that be an initial warning sign for career counsellors or school staff that there may be possible underlying concerns for a student's well-being. Research could be done using a cognitive flexibility self-report and/or a well-being checklist as students enter their penultimate year. This research could provide valuable, practical applications for career and guidance counsellors as students navigate the critical last two years before graduation.

In addition, there were promising results when exploring the relationship between gender stereotyping beliefs and cognitive flexibility. Significantly, this study found that those students who identified with a more traditional male stereotype role were found to have an increased ability to perceive situations as controllable. This finding has particular relevance in light of a recent study which found that adolescents who identify with either a traditional male or female stereotype role are at higher risk for maladaptive behaviors and negative mental health concerns (Shakya et al., 2019). This is an under-researched area and certainly worth exploring. Future

research could investigate the extent that cognitive flexibility acts as a mediator between gender stereotyping beliefs and mental health concerns.

The use of a mixed methods design revealed far more complexities and implications for both male and female late adolescents as they make critical decisions before heading off to university or alternate education choices. This study found that gender stereotyping beliefs may both increase or decrease career aspirations, largely dependent on gender. The survey results pointed to the fact that participants who identified with a traditional male stereotype role were positively influenced in all areas of career aspirations. This is certainly an area that needs further exploration. Are students who identify with a traditional male stereotype finding themselves out of step with the world and are limiting themselves in career opportunities or, even worse, denying their passions and talents in a stereotypical career because it is deemed too feminine? In addition, interview findings highlighted that gender stereotypes are very much alive and well and are influencing how females between the ages of 16- and 18-years not only see their future career aspirations but may influence what and how they strive for those aspirations. These areas are critical areas for future research which would benefit from further exploration within a mixed methods design, as there were clear discrepancies between the survey data and the context provided by the interviews. In addition, a longitudinal design would provide a way to study participants over time, as they move into adulthood, gaining insights into possible trigger points for gender stereotyping beliefs which then go on to either increase or decrease career aspirations.

Lastly, it was a surprise that during the qualitative phase of the study, social media or its effects on career aspirations were not mentioned by any of the participants. Given the strong influence, both positive and negative, that social media has on late adolescents (Lapierre et al., 2019; Puukko et al., 2020) it would be interesting for future research to explore possible

influences within the context of career aspirations. Particular attention should focus on the relationship between social media and gender stereotyping beliefs and how they may intersect to influence a participants' career aspirations.

9.5 Concluding Remarks

This study has contributed to the literature by providing a novel way of looking at both cognitive flexibility and gender stereotyping beliefs within the context of career aspirations for 16- to 18-year-old students. Adolescence is a critical developmental time which is known for considerable physical, social and emotional growth and change requiring cognitive flexibility to support the adolescent as they navigate their way into adulthood (Uddin, 2021). In addition, by the time a late adolescent is between the ages of 16 and 18-years-old, gender role stereotype beliefs are embedded within their everyday life from the language they hear (Vervecken et al., 2015; Li et al., 2021), the games they play (Fabre et al., 2016), the sports (Swain, 2000) and competitions (Steegh et al., 2019) they compete in, the subject interests they make (Plante et al., 2019) and their friendships they form (Felmlee et al., 2012). Critically, this same gender based stereotyping beliefs also greatly impact a late adolescents' educational (Ramaci et al., 2017), leadership (Brescoll, 2016) and achievement (Yu et al., 2020) aspirations, which ultimately can negatively influence their career aspirations (Nduta, 2020) as this present study has shown.

This study established that those students who perceive the male role as more traditional and gender stereotypical have higher career aspirations. In addition, those same students will also find it easier to perceive difficult situations as controllable. However, the study also showed that all students, regardless of gender, who have higher cognitive flexibility will also have higher career aspirations. Moreover, the study's use of a mixed methods design provided evidence of the complexity and continued pervasiveness surrounding gender role stereotyping beliefs for the

participants. These findings have significant implications for the 16- to 18-year-age group as they are exploring their career aspirations. If a late adolescent has lower cognitive flexibility and is less able to cope with the numerous life stressors typical of this age group, their resulting career aspirations, as this study showed, will be lower. However, supporting a student to increase their cognitive flexibility may provide them with better coping skills as they navigate an increasingly complex world and any gender stereotyping beliefs they may encounter.

Overall, these findings provide a new way of understanding and supporting an age group already identified as high risk for mental health concerns, as they look towards and aspire to their future careers. Thus, it is of particular importance that this study was able to establish that both cognitive flexibility and perceiving the male role as a more traditional gender stereotypical role not only correspond with higher levels of career aspirations but are predictors for career aspirations of the Bermudian student. These results open the possibility that cognitive flexibility may act, not only as a protective factor for higher career aspirations but also, as a protective factor against harmful gender stereotypes. These results provide significant practical applications for the educational practitioner, who can make behavioral changes in the classroom or counselling setting, to positively influence a student and support them towards higher career aspirations.

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Appendices

Appendix A: SoE Research Ethics Form

SoE RESEARCH ETHICS FORM

It is important for members of the School of Education, as a community of researchers, to consider the ethical issues that arise, or may arise, in any research they propose to conduct.

Increasingly, we are also accountable to external bodies to demonstrate that research proposals have had a degree of scrutiny. *This form must therefore be completed for each piece of research carried out by members of the School, both staff and students*

The SoE's process is designed to be supportive and educative. If you are preparing to submit a research proposal, you need to do the following:

2. Complete the form on the back of this sheet

A list of prompts for your discussion is given below. Not all these headings will be relevant for any particular proposal.

3. Arrange a meeting with a fellow researcher

The purpose of the meeting is to discuss ethical aspects of your proposed research, so you need to meet with someone with relevant research experience. Discussants are encouraged to take the role of critical friend and approach the research from the perspective of potential participants.

Track the changes in how your thinking has changed as a result of your decisions; this form is designed to act as a record of your discussion and any decisions you make.

- 4. Upload a copy of this form and any other documents (e.g. information sheets, consent forms, materials) to the online ethics tool at:**

<https://dbms.ilrt.bris.ac.uk/red/ethics-online-tool/applications>.

Please note: Following the upload you will need to answer ALL the questions on the ethics online survey and submit for approval by your supervisor (see the flowchart and user guides on the SoE Ethics Homepage).

If you have any questions or queries, please contact the ethics co-ordinators at: gsoe-ethics@bristol.ac.uk

Please ensure that you allow time before any submission deadlines to complete this process.

Prompts for discussion

You are invited to consider the issues highlighted below and note any decisions made. You may wish to refer to relevant published ethical guidelines to prepare for your meeting. See

<http://www.bris.ac.uk/education/research/networks/ethicscommittee/links/>

for links to several such sets of guidelines.

5. Researcher access/exit
6. Power and participant relations
7. Information given to participants
8. Participant's right of withdrawal
9. Informed Consent
10. Complaints procedure
11. Safety and well-being of participants/researchers
12. Anonymity/confidentiality

13. Data collection
14. Data analysis
15. Data storage
16. Data protection (see: <http://www.bristol.ac.uk/secretary/data-protection/>)
17. Feedback
18. Responsibilities to colleagues/academic community
19. Reporting of research

Be aware that ethical responsibility continues throughout the research process. If further issues arise as your research progresses, it may be appropriate to cycle again through the above process.

Name(s): Bonnie Lee McGlynn

Proposed research project: What role do cognitive flexibility and gender stereotyping beliefs play in the career aspirations of late adolescents?

Proposed funder(s): None

Discussant for the ethics meeting: Cathy Shail (EdD student at the research stage). Items discussed and changes made post ethics discussion are highlighted in blue. The discussion was very helpful and provided particular assistance on ensuring clarity around my data collection, analysis and the local context of the research. In addition, I have tightened up my research aims and data analysis to ensure they specifically address the research questions of the study.

Name of supervisor: Dr. Ioanna Bakopoulou

Has your supervisor seen this submitted draft of your ethics application? Yes

Please include an outline of the project or append a short (1 page) summary:

The universal trend for women's progress in the global economy is now officially stagnating. For the first time women made less progress in 2017 (The Global Gender Gap Report 2017), since statistics were collected in 2006, only growing by 0.03% in 2018 (World Economic Forum 2017). To compound matters, the recent Millennium Cohort (2017) longitudinal study in the UK found an alarming increase in mental health concerns with 24% of girls and 9% of boys reporting feelings of depression at age 14. At particularly high risk, were girls with previously recorded high cognitive scores who reported increased rates of self-harm. In addition, concerns have been rising for the underachievement of young men (HEPI, 2016). Thus, faced with these statistics and knowing that adolescents with higher career aspirations report less hopelessness and more self-efficacy (Dudovitz et al. (2007), it is essential to investigate factors which may positively impact on an late adolescents' career aspirations.

As such, a cognitive process called cognitive flexibility is emerging in the literature as contributing to positive mental health (Stange, Alloy & Fresco, 2017). Cognitive flexibility, in its simplest form, is the ability to shift back and forth between competing alternatives (Davidson, Amso, Anderson & Diamond, 2006). In a recent literature review within the clinical and developmental psychology fields, Stange, Alloy & Fresco (2017) report that attention to the role of inflexibility and its relationship with depression was analysed with 147 empirical studies reporting "associations between five components of flexibility ... and depression" (2017:245). While research is beginning to show some associations between cognitive flexibility and mental health, there is a significant gap in the literature when considering the possible relationship between cognitive flexibility and its effect on career aspirations.

This study aims to explore how cognitive flexibility may positively or negatively impact on late adolescents' career aspirations. It also aims to shine a light on our current understanding of

gender stereotyping beliefs and explore if there is a relationship between cognitive flexibility and whether if that relationship may influence career aspirations. If our brightest girls are at risk of mental health issues and our boys are underperforming, this study hopes to offer insight and support for both our boys and girls as they aspire to their future careers. In addition, it is during this crucial time of adolescence when identity and the career decision-making process becomes independent and when the role of teachers and parents, frequently unconsciously, influence “adolescents toward professions deemed appropriate to the belonging gender” (Ramaci et al., 2017:115).

This research is important from a local context, when one considers the geopolitical context within the islands of Bermuda. Our context is one of a colonialism, historical and present-day racial tensions and strains between Governmentally funded public schools, perceived not to have sufficient academic rigour and highly competitive private schools. I will navigate through this backdrop with close collaboration and engagement with the Ministry of Education of Bermuda and both public and private School Principals. This research offers, for the first time, an opportunity to explore perceptions and influencers of career aspirations from all aspects of the Bermudian context.

Finally, this research is important, because the global economy is directly affected by girls’ and women’s participation in it and the quality of that participation. It is estimated that the global economy loses 160 trillion dollars in wealth due to gender inequality of earnings (World Bank Study, 2018). Our economies need healthy and productive girls to grow into women who aspire to their highest capabilities and in turn contribute to the growth of their countries and the world’s global economy for everyone’s benefit.

Research Questions:

1. What is the relationship between cognitive flexibility and late adolescents' career aspirations in secondary education in Bermuda?
2. To what extent do gender stereotyping beliefs have an impact on the career aspirations of late adolescents?
3. Is there a relationship between cognitive flexibility and gender stereotyping beliefs in the career aspirations of late adolescents?

To answer the aims and research questions this study will use a combination of both quantitative and qualitative research methods or mixed methods. Quantitative methods will consist of a national survey, which will take the form of three closed-ended questionnaires (Cognitive Flexibility Inventory, Gender Role Stereotypes Scale and the Career Aspirations Scale - Revised) with two-open ended questions at the end of the surveys. Standardised Instructions for Administration of the Survey will be used by school personnel to facilitate consistency of the procedure across settings. The surveys will look to explore the role cognitive flexibility and gender stereotyping beliefs may play in the career aspiration of late adolescents. However, a richer context will also be sought through twelve semi-structured interviews, designed to provide an open conversation between the researcher and the participants of a more authentic, lived experience of the late adolescent.

Participants will be recruited through opportunity sampling from both public and private secondary schools and an adult alternative education setting in Bermuda. Data collection will occur in Term 1 of the 2019 – 2020 academic year. The surveys will be analysed for both descriptive and inferential statistics, while the open-ended questions and interviews will be analysed using thematic analysis.

Ethical issues discussed and decisions taken (see list of prompts overleaf):

1. Research access/exit

An opportunity sampling method has been decided on to assist in as great a diversity and number of participants for this research study. As the target population is late adolescents between the ages of 16 and 19 years of age, currently enrolled in educational setting, and as a result of the geopolitical context in Bermuda, I will need to rely on previous contacts within the Ministry of Education, School Principals from local secondary schools and the Executive Director from an alternative educational setting. The Commissioner of Education will be the ultimate gatekeeper for access to the two public secondary schools, while the private school principals and Executive Director, will be individual gatekeepers for their respective schools. Upon receipt of permission from the Commissioner of Education, individual permission will be sought from the School Principals of the two public and six private secondary schools.

For those schools that agree to participate in the research study, a designate contact person will be requested from each school to assist with managing the dissemination and collection of parental consent forms and surveys.

2. Power and participant relations

The researcher of this study has worn many hats as an educator over the last 30 years. Each one of those hats: Special Education Teacher, Education Officer, School Principal, Academic Director, Teacher of IB Psychology has informed the context of this current research study.

Bermuda is a small island, as such, many people that will support this study will know me in a work or personal context in one or more of my previous (or current) position(s). In addition, I am presently teaching psychology at one of the private secondary schools, and I am also involved in

a public/private partnership leadership programme for sixteen-year-old girls. As a result of my previous and current roles and strong interest in gender equity, this researcher's standpoint on gender and social equity form the foundation of this enquiry. As Clough and Nutbrown said, "All social science research is saturated (however disguised) with positionality" (2012:10).

Thus, I am ever mindful of the shifting role of power, whether from a past position or current between a teacher/student relationship. As a result, no past or current students will participate directly in this study although past or current students may act as participants in the pilot of both the survey and interview.

In addition, ideologically this research is set within the backdrop of both a pragmatic and gender schema philosophical worldview. A natural tension will exist between the two perspectives, which in turn sets up a positional tension between these perspectives and the choice of survey and interview questions. From a pragmatic perspective, questions choices were designed to explore the research question and to solve a problem (Onwuegbuzie & Leech, 2005), however, the researcher must acknowledge that the survey and interview questions have been filtered through a gender schema lens.

3. Information given to participants

The following is a list of documents which will be used up to the point of data collection and administration of both the survey and interview. Each document has been specifically tailored with the target population in mind but is subject to modification based on a small pilot run of the both the survey and interview and feedback from supervision.

- Parental Consent – Survey
- Participant Consent – Survey

- Letter of Invitation for Participation in Research (letter to School Principals)
- Research Information Sheet and Parental Consent (letter to parents for semi-structured interview)
- Research Information Sheet and Participants Consent (letter to parents for semi-structured interview)
- Semi-Structured Interview Schedule
- Standardised Instructions

4. Participant's right of withdrawal

All participants, and parents of participants if their child is under the age of 18, will be informed of their right or their child's right to withdraw their participation at any point during the survey or interview.

If a participant decides to withdraw in the middle of the survey or interview, a note will be made on their consent form with the date, time and reason of withdrawal. The survey and/or interview will then be destroyed, but the consent with all relevant information will be kept for the record.

In addition, all participants and parents of participants may withdraw their data, at any point, without providing a reason up until two weeks after they have participated in the interview.

5. Informed consent

As this research targets participants between the ages of 16 to 19 years of age, there will be an informed consent statement for both participants and for parents to sign on behalf of their children. Parental consent will be sought for all participants that are between the ages of 16 to 17 years of age.

In addition, as this is a mixed method design, informed consent statements will be tailored for the survey (Participant's Consent Form and Parental Consent Form) and for the interview (Research Information Sheet – Parents/Parental Consent Form).

6. Complaint's procedure

Participants will be assured that his study will be completed in line with Bristol University School of Education ethics guidelines and that ethical approval has been granted by the University of Bristol.

All participants will be advised to initially contact myself, in the first instance, if there is a concern or complaint about the research. However, they will also be provided with my supervisor's name and contact information if they feel it inappropriate or uncomfortable in approaching me, as the researcher.

7. Safety and well-being of participants/researchers

The safety and well-being of the participants and the researcher will be this researcher's first priority. All surveys and interviews will be administered in the student's school setting and during the normal school day and agreed upon time. The environment will be checked ahead of time for any obvious health and safety hazards. If any student becomes distressed during the time of the survey or interview, school personnel will be notified and participation in the research will be immediately stopped.

8. Anonymity/confidentiality

All relevant participants are assured of anonymity and confidentiality through the Parental/Participant Consent Form, Statement of Informed Consent or School Principal Consent

Form. In addition, the above-mentioned forms also explain the purpose of the research and what purposes the data may be used.

During data collection for both the survey and interview all participants will be assigned a unique, numeric identifier. The only identifiable information collected by participants will be their age, gender and whether they attend a public, private or alternative education setting.

9. Data handling practices, including data protection

The data collected in this study will be kept strictly confidential. All data collected will be subject to Bermuda's Personal Information Act 2016 and in accordance with Bristol University's regulations (see <http://www.bristol.ac.uk/secretary/data-protection>). The anonymised data will be assigned a numeric identifier and the informed consents, linking the raw data with the numeric identifier, will be kept in a locked filing cabinet. The anonymised data, including direct quotes and research findings, will be used to write a doctoral dissertation and may be used in any future publications on the research theme, which could also apply to presentations for conferences or training purposes. In addition, anonymised raw data may need to be shared with the dissertation supervisor, examiner or another researcher in order to validate findings from the data.

Anonymised raw data from both the survey and interviews will be kept up to ten years after completion of the research.

10. Feedback and reporting of research

The anonymised data, including direct quotes and research findings, will be used to write a doctoral dissertation, and may be used in any future publications on the research theme, which could also apply to presentations for conferences or training purposes. In addition, anonymised

raw data may need to be shared with the dissertation supervisor, examiner or another researcher in order to validate findings from the data.

The Ministry of Education, all relevant participating School Principals and the Executive Director of the alternative education setting have all been informed that they will receive an executive summary of the findings.

11. Responsibilities to colleagues and academic community

This research study has been very carefully planned in order to navigate a number of tensions that run currently and historically through Bermuda's education system. As a result of preliminary meetings with gatekeepers, at the Ministry of Education in Bermuda, this research is being promoted as a public/private partnership. While data will be collected to get a percentage of participants of both the public, private and alternative settings, results will not be compared between the two. In addition, only age and gender demographics will be collected, in order to keep the study focused solely on the research questions.

If you feel you need to discuss any issue further, or to highlight difficulties, please contact the SoE's ethics co-ordinators who will suggest possible ways forward.

Signed: Bonnie McGlynn **(Researcher)** **Date: July 5, 2019**

Signed: Cathy Shail **(Discussant)** **Date: July 1, 2019**

Signed: Dr Ioanna Bakopoulou **(Supervisor)** **Date: July 3, 2019**

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Appendix B: Email Confirmation – Ethics

Research Governance and Ethics Officer

Mon 08/07/2019 12:21 To Bonnie McGlynn

Your online ethics application for your research project "What role do cognitive flexibility and gender stereotyping beliefs play in the career aspirations of late adolescents?" has been granted ethical approval. Please ensure that any additional required approvals are in place before you undertake data collection, for example NHS R&D Trust approval, Research Governance Registration or Site Approval.

For your reference, details of your online ethics application can be found online here:

<http://www.bristol.ac.uk/red/ethics-online-tool/applications/91342>

Appendix C: Anecdotal – Cultural Context

One has to look back only as far as our recent collective memory to get an understanding of the depth and breadth of Bermuda’s patriarchal, and at times, misogynistic society. This past July (2020), a local defense lawyer attempted to negotiate a more lenient plea deal for his 20-year-old client who had been convicted of statutory rape (twice) of a minor (13-year-old girl), he pleaded with the supreme court judge, “It has become sport for young girls to see if they can have sex with an older guy”, “Young ladies actively pursue older men and they lie to them”, “Maybe there should be some statute against the young women who do this” and finally, “They know better, they do. At what point will they be held accountable?” (Royal Gazette, 2016: editorial). While this made front page news and provoked much conversation, in support and against these sentiments, the judge reduced the sentence by six months. However, the judge also called out the defense lawyer’s language by continually referring to the victim as a young lady as opposed to a girl, and the local newspaper wrote an editorial apologising for the part they played,

We can only apologise – to the young victim and her family, to those who have been victimised and may have been traumatised all over again, and to those who have yet to find their voice and now may dare not use it for fear of the victim-blaming and victim-shaming culture that has this flawed paradise plumbing the moral depths of mankind. Royal Gazette July 16, 2020: editorial

In addition, a number of opinion pieces and rebukes were directed at this case and the behavior of the defense lawyer with a common theme emerging that the incidence simply represented an example of a wider, prevalent cultural context. A letter to the editor from a young Bermudian woman called out that context, when she wrote,

We have a culture on this island of teaching young boys that they can invade girls' boundaries with impunity and young girls that they are responsible for those boys' behavior towards them...It is the same culture in which middle-aged men feel that it is appropriate to pull their bikes over to harass teenage girls on the street. It is the same culture that demonizes survivors for ruining their rapists' lives by reporting and bringing their experiences out in the open... Hanig-Dill, F. (2020, July 16)

This particularly low point in our cultural context is by no means isolated with numerous political gaffs and insults, over the years, targeted towards or about women. In 2018, one of our local cabinet ministers was attending meetings in London when he recorded himself asking servers at the Cereal Killer Café for “titty milk”. He then went on to post his “indiscretion” on both Instagram and Facebook, later to be removed with an unreserved apology after much outcry from the public and making the international press. Unfathomably, he was not asked to resign over the incident but later losing his cabinet ministry due to breaking covid lockdown restrictions, only to be brought back into another high-profile position after the last general election. This prompted a local female politician to write, after the same general election, when yet another politician was invited to become a cabinet minister, after he had been recently accused and apologised for an alleged assault towards a woman,

Men who have disregarded women systematically, and it would appear with purpose, continue to be brought back to lead us. In truth and inconceivable, men who have disregarded the rules and laws of our community are promoted to high offices.
Packwood, C. (2020, October 26)

This cultural context is significant, as these incidents are all within immediate or recent memory of the participants in this study, who range in ages from 16- to 18-years, and the incidents mentioned all garnered significant press coverage.

Appendix D: Cognitive Flexibility - Contributions in Mental Health and Education

Cognitive flexibility contributes significantly to much of a person's life.

Aspects of life	The ways in which CF is relevant to that aspect of life	Age	References
Career Aspirations	Career futures and positivity	$M = 20.83$ yrs.	Yildiz-Akyol & Boyaci, 2020
	Career confidence	$M =$	Kercood et al., 2017
Mental Health	Subjective well-being	$M = 20.04$ yrs.	Jen et al., 2019
		$Median = 15$ yrs.	Demirtas, 2020
		$M = 20.14$ yrs.	Wu et al., 2021
		$M = 20.64$ yrs.	Okan Er & Deniz, 2022
	Psychological health	Review of Literature	Kashdan & Rottenberg, 2010
	Increased coping skills	$M = 20.20$	Dennis & Vander Wal, 2010
	Bipolar Disorder	Adults	O'Donnell et al., 2017
	PTSD	$M = 16.74$ yrs. (18 to 65 yrs.)	Fu & Chow, 2017,
			Ben-Zion et al., 2018
	Life Satisfaction	$M = 20.80$ yrs.	Odaci & Cikrikci 2019
	Depression (MDD)	Review of Literature	Stange et al., 2017
Anxiety and depression	Elderly patients	Johnco et al., 2014	
Anxiety and OCD	Adults ($M = 33.48$ yrs.)	Rosa-Alcazar et al., 2019	
Obsessive Compulsive Disorder (OCD)	(18 to 30 yrs.)	Sternheim et al., 2014	
		Gunner & Pittenger, 2017	

	Hopelessness and perceived stress	18 – 40 yrs.	Demirtas & Yildiz, 2019
	Early life stress	14 – 17 yrs.	Harms et al., 2016
Self-efficacy	Achievement, general, academic, social and emotional self-efficacy	15 – 18 yrs.	Esen et al., 2017
	Academic, social and emotional self-efficacy	<i>Median</i> = 15 yrs.	Demirtas 2020
Academics/School Achievement	Study strategies	Grades 9, 10 & 11	Onen & Kocak, 2015
	Academic achievement	Grades 4 & 6 University students	Magalhaes et al., 2020 Kercood et al., 2017
	Social emotional learning strategies, deep learning	University medical students	Toraman et al., 2020
Creativity		21 yrs. <i>M</i> = 21 yrs. College students	Nijstad, at al., 2010 Gocłowska et al., 2012 Zuo et al., 2019

Appendix E: Principal's Consent Form

Letter of Invitation for Participation in Research

A research study exploring factors which influence career aspirations of late adolescents (16 to 19 Years).

Dear,

My name is Bonnie McGlynn, and I am currently a Doctor of Education research student with the University of Bristol. In partnership with public, private and alternative educational organisations on the island, I am conducting research to explore factors which influence the career aspirations of students who are nearing the end of their secondary school experience. I am working under the supervision of Dr Ioanna Bakopoulou at the University of Bristol.

The Commissioner of Education, Mrs. Kalmar Richards, on behalf of the Ministry of Education has given approval for me to approach schools. In addition, this study has also been approved by the University of Bristol's research Ethics Committee. I invite you to consider taking part in this research.

Purpose of the Research

This research aims to explore the experiences and perceptions of late adolescents as they begin to make crucial decisions for their "next steps" and aspirations of their future careers.

Benefits of the Research to Schools

1. Dissemination of results will be provided to the Ministry of Education and schools who participate.
2. Schools may use the results to inform practice and examine trends for strategic purposes.
3. Schools will be participating in a representative sample of Bermuda's secondary school population with results highlighting factors which influence career aspirations within a local, Bermudian context and compared globally.

Research Plan and Method

This research is a mixed method design, meaning it will use both quantitative and qualitative research methods. The quantitative method will be in the form of a paper/pencil survey, lasting about 20 minutes, and will be available to any student between the ages of 16 and 19 years of age. The qualitative research method will be in the form of a semi-structured interview and will be available to students, within the school, who wish to volunteer. The interview will take approximately 25/30 minutes. Permission will be sought from the participants and their parents, for those students under the age of 18, prior to participation in the research. Only those who consent, and receive parental consent if relevant, will participate in the research.

If you consent for the research to proceed, it is hoped that data collection for the surveys will be administered by relevant teaching staff. Teachers will be provided with standardised instructions to administer, conclude and collect the surveys. For students who volunteer to participate in the interview, I will arrange a day and time convenient to both the student and the school, to personally conduct the interviews. If you are able to provide a quiet place for the interview, it would be appreciated. In an effort to keep disruption to a minimum, while providing an efficient flow of parental and participant consent forms, surveys and general communication, it is requested that the school designates one staff member to act as a point of contact between myself and the school.

All information collected will be held in the strictest of confidence and neither school nor participants will be identifiable in any reports written. Participants have the right to withdraw from the study at any time. The role of the school is voluntary, and the School Principal may decide to withdraw the school's participation at any time. I appreciate the time spent in participating in the research and every effort will be made to keep disruption of time to a minimum.

Invitation to Participate

If you would like your school to participate in this research, please complete and return the attached form.

School Principal Consent Form

I give consent for _____ to participate.

Name of School

I have read the *Letter of Information for Participation in Research* explaining the purpose of the research study and understand that:

- The role of the school is voluntary.
- I will provide the researcher with a designated contact person to act, on my behalf, as the school liaison.
- I have the right to withdraw my school's participation at any time.
- Students from ages 16 to 19 years of age, in Term 1 of 2019 – 2020 school year, will be invited to participate, and permission will be sought from parents as relevant.
- Only participants who consent and whose parent's consent (when relevant) will participate in this research.
- All information obtained will be held in strict confidence.
- The participants' names will not be used, and individual participants will not be identifiable in any written reports about the study.
- I understand that all data collected will be held securely and confidentially and is subject to my rights under the Bermuda Personal Information Protection Act 2016 and in accordance with university regulations (see <http://www.bristol.ac.uk/secretary/data-protection/>).
- The school will not be identifiable in any written reports about the study.
- Participants have the right to withdraw from the study at any time.

- A report of the findings will be made available to the school.
- I may seek further information on the research from Bonnie McGlynn at bonniemcglynn@gmail.com or 704-5809.
- I understand that ethical approval for this study has been granted by the University of Bristol. If I have any concerns about the researcher, or the conduct of the researcher, I can contact the researcher's supervisor: Dr Ioanna Bakopoulou – ioanna.bakopoulou@bristol.ac.uk.

Principal's Signature

Date

Appendix F: Parental Consent Form – Survey

October 2019

Dear Parent(s)/Guardian(s),

This year your son/daughter's school is partnering with Bonnie McGlynn, a Doctor of Education student from the University of Bristol with over 30 years' experience as an educator in Bermuda. Bonnie has partnered with both public and private schools and the Adult Education School to provide a broad representation of Bermuda's youth. The purpose of this research study is to explore factors which influence career aspirations of students between the ages of 16 to 19 years of age. Your son/daughter will be asked to fill in a survey, which will take approximately 15 minutes.

The data collected in this study will be kept strictly confidential. All data collected will be subject to Bermuda's Personal Information Act 2016 and in accordance with Bristol University's regulations (see <http://www.bristol.ac.uk/secretary/data-protection>). The anonymised data, including direct quotes and research findings, will be used to write a doctoral dissertation and may be used in any future publications on the research theme, which could also apply to presentations for conferences or training purposes. In addition, it is possible that anonymised data may need to be shared with the dissertation supervisor, examiner or another researcher in order to validate findings from the data. Anonymised raw data will be kept for ten years after completion of the research. Only information based on the results of the group of participants will be used to report on this study. There are no known or anticipated risks to participation in this study.

Your son/daughter's participation in this study is entirely voluntary. He/she may refuse to answer individual questions as they progress with the survey. Your son/daughter also has the right to withdraw all participation in this study at any time and there will be no negative consequences if they choose to do so.

This study has been reviewed and supported by the Ministry of Education and personnel at your son/daughter's school. It has also been approved by the University of Bristol's research ethics

committee. However, the final decision about participation is yours. The overall findings of this study will be shared with your school and with the Ministry of Education.

If you are need of any additional information about this study, please do not hesitate to contact Bonnie McGlynn (bonniemcglynn@gmail.com, 704-5809). In the event that you would like to raise a concern or complaint about the research please approach me in the first instance. If it is not possible, or you deem it inappropriate, please contact the supervisor of the study: Dr Ioanna Bakopoulou – ioanna.bakopoulou@bristol.ac.uk. Please review the Parental Consent Form attached to confirm the status of your son/daughter's participation.

Your son/daughter's participation is greatly appreciated in this research study and will help to contribute to the overall understanding of what is known about the influences on a young adult's career aspirations.

Kind regards,

Bonnie L. McGlynn

Doctoral Student, Bristol University

Parental Consent Form – Career Aspirations Study

A research study exploring factors which influence career aspirations of late adolescents (16 to 18 Years).

- I have read the information letter about the Career Aspirations Study conducted by Bonnie McGlynn. I have been offered the opportunity to ask questions and receive any additional details about the study.

- I acknowledge that my son/daughter's school will receive a summary of the research findings. All information gathered for this study will be used for research purposes, including a doctoral dissertation, only and will remain anonymous and be held in strictest confidence.

- I am aware that I may withdraw my permission at any time without penalty by advising the school. In addition, my son/daughter may withdraw their participation at any time without penalty.

- I understand that all data collected will be held securely and confidentially and is subject to my rights under the Bermuda Personal Information Protection Act 2016 and in accordance with university regulations (see <http://www.bristol.ac.uk/secretary/data-protection/>).

- I understand that this research study has been reviewed and approved by both my son/daughter's School Principal and the Ministry of Education.

- If I have any questions/concerns about the study I can feel free to contact the research student, Bonnie McGlynn (bonniemcglynn@gmail.com, 704-5809).

- Yes – I agree for my son/daughter to participate in this study.

No – I do not agree for my son/daughter to participate in this study.

School: _____

Student's Name: _____

Student's Birth Date: _____ (day) _____ (month) _____ (year)

Parent (Guardian): _____

Signature: _____ Date: _____

Appendix G: Parental Consent Form – Survey (amended)

February 2020

Dear Parent(s)/Guardian(s),

This year your son/daughter's school is partnering with Bonnie McGlynn, a Doctor of Education student from the University of Bristol with over 30 years' experience as an educator in Bermuda. Bonnie has partnered with both public and private schools and the Adult Education School to provide a broad representation of Bermuda's youth. The purpose of this research study is to explore factors which influence career aspirations of students between the ages of 16 to 19 years of age. Your son/daughter will be asked to fill in a survey, which will take approximately 15 minutes.

The data collected in this study will be kept strictly confidential. All data collected will be subject to Bermuda's Personal Information Act 2016 and in accordance with Bristol University's regulations (see <http://www.bristol.ac.uk/secretary/data-protection>). The anonymised data, including direct quotes and research findings, will be used to write a doctoral dissertation and may be used in any future publications on the research theme, which could also apply to presentations for conferences or training purposes. In addition, it is possible that anonymised data may need to be shared with the dissertation supervisor, examiner or another researcher in order to validate findings from the data. Anonymised raw data will be kept for ten years after completion of the research. Only information based on the results of the group of participants will be used to report on this study. There are no known or anticipated risks to participation in this study.

Your son/daughter's participation in this study is entirely voluntary. He/she may refuse to answer individual questions as they progress with the survey. Your son/daughter also has the right to withdraw all participation in this study at any time and there will be no negative consequences if they choose to do so.

This study has been reviewed and supported by the Ministry of Education and personnel at your son/daughter's school. It has also been approved by the University of Bristol's research ethics committee. However, the final decision about participation is yours. The overall findings of this study will be shared with your school and with the Ministry of Education.

If you are in need of any additional information about this study, please do not hesitate to contact Bonnie McGlynn (bonniemcglynn@gmail.com, 704-5809). In the event that you would like to raise a concern or complaint about the research please approach me in the first instance. If it is not possible, or you deem it inappropriate, please contact the supervisor of the study: Dr Ioanna Bakopoulou - ioanna.bakopoulou@bristol.ac.uk.

Your son/daughter's participation is greatly appreciated in this research study and will help to contribute to the overall understanding of what is known about the influences on a young adult's career aspirations.

If you are not in agreement with your son/daughter's participation and wish to opt out of the research, please sign the form below and return it to school within 3 school days of receipt of this letter.

Kind regards,

Bonnie L. McGlynn

Doctoral Student, Bristol University

I **do not** agree for my son/daughter to participate in this study.

Student's Name: _____

Parent (Guardian): _____

Signature: _____ Date: _____

Appendix H: Parental Consent Form – Survey (outside of school)

October 2019

Dear Parent(s)/Guardian(s),

This year your son/daughter's school is partnering with Bonnie McGlynn, a Doctor of Education student from the University of Bristol with over 30 years' experience as an educator in Bermuda. Bonnie has partnered with both public and private schools and the Adult Education School to provide a broad representation of Bermuda's youth. The purpose of this research study is to explore factors which influence career aspirations of students between the ages of 16 to 19 years of age. Your son/daughter will be asked to fill in a survey, which will take approximately 15 minutes.

The data collected in this study will be kept strictly confidential. All data collected will be subject to Bermuda's Personal Information Act 2016 and in accordance with Bristol University's regulations (see <http://www.bristol.ac.uk/secretary/data-protection>). The anonymised data, including direct quotes and research findings, will be used to write a doctoral dissertation and may be used in any future publications on the research theme, which could also apply to presentations for conferences or training purposes. In addition, it is possible that anonymised data may need to be shared with the dissertation supervisor, examiner or another researcher in order to validate findings from the data. Anonymised raw data will be kept for ten years after completion of the research. Only information based on the results of the group of participants will be used to report on this study. There are no known or anticipated risks to participation in this study.

Your son/daughter's participation in this study is entirely voluntary. He/she may refuse to answer individual questions as they progress with the survey. Your son/daughter also has the right to withdraw all participation in this study at any time and there will be no negative consequences if they choose to do so.

This study has been reviewed and supported by the Ministry of Education. It has also been approved by the University of Bristol's research ethics committee. However, the final decision about participation is yours. The overall findings of this study will be shared with your school and with the Ministry of Education.

If you are need of any additional information about this study, please do not hesitate to contact Bonnie McGlynn (bonniemcglynn@gmail.com, 704-5809). In the event that you would like to raise a concern or complaint about the research please approach me in the first instance. If it is not possible, or you deem it inappropriate, please contact the supervisor of the study: Dr Ioanna

Bakopoulou – ioanna.bakopoulou@bristol.ac.uk. Please review the Parental Consent Form attached to confirm the status of your son/daughter's participation.

Your son/daughter's participation is greatly appreciated in this research study and will help to contribute to the overall understanding of what is known about the influences on a young adult's career aspirations.

Kind regards,

Bonnie L. McGlynn

Doctoral Student, Bristol University

Parental Consent Form – Career Aspirations Study

A research study exploring factors which influence career aspirations of late adolescents (16 to 19 Years).

- I have read the information letter about the Career Aspirations Study conducted by Bonnie McGlynn. I have been offered the opportunity to ask questions and receive any additional details about the study.

- I acknowledge that my son/daughter’s school may receive a summary of the research findings. All information gathered for this study will be used for research purposes, including a doctoral dissertation, only and will remain anonymous and be held in strictest confidence.

- I am aware that I may withdraw my permission at any time without penalty by advising the researcher. In addition, my son/daughter may withdraw their participation at any time without penalty.

- I understand that all data collected will be held securely and confidentially and is subject to my rights under the Bermuda Personal Information Protection Act 2016 and in accordance with university regulations (see <http://www.bristol.ac.uk/secretary/data-protection/>).

- I understand that this research study has been reviewed and approved by the Ministry of Education.

- If I have any questions/concerns about the study I can feel free to contact the research student, Bonnie McGlynn (bonniemcglynn@gmail.com, 704-5809).

- Yes – I agree for my son/daughter to participate in this study.

- No – I do not agree for my son/daughter to participate in this study.

School: _____

Student's Name: _____

Student's Birth Date: _____ (day) _____ (month) _____ (year)

Parent (Guardian): _____

Signature: _____ Date: _____

Appendix I: Parental Consent Form – Interview

Research Information Sheet for Parental Consent

A research study exploring factors which influence career aspirations of late adolescents (16 to 19 Years).

Introduction

My name is Bonnie McGlynn. I am a doctoral student with the University of Bristol with 30 years' experience as an educator in Bermuda. Over the years, I have become interested in factors which influence the career aspirations of students who are nearing the end of their secondary school experience.

Purpose of the research

This research aims to explore the experiences and perceptions of adolescents, aged to 19 years old, as they begin to make crucial decisions of their “next steps” and aspire towards their future careers.

What am I asking to do?

As a parent of a student in an educational setting, whose son/daughter is between the ages of 16 to 17 years of age within Term 1 of the 2019 – 2020 school year, I would like to invite your son/daughter for an interview to discuss factors that influence their career aspirations.

Your rights

This study has been reviewed and supported by the Ministry of Education and your son/daughter's participation is strictly voluntary. Your son/daughter is free to withdraw from the

study at any point without providing a reason, as are you free to withdraw them at any point. You or your son/daughter will be free to withdraw their participation from this study up to two weeks from their interview. After two weeks, the data will be anonymously merged, and analysis will start. In addition, your son/daughter will be free to decline to answer any question(s) in any part of the interview. The interview can also be paused or terminated at their request.

The only demographic information your son/daughter will be asked to provide is their gender, age (as of the time of the interview) and the type of educational setting they are currently attending. The estimated completion time for the interview is 20 minutes. The interview will be conducted face to face at a pre-arranged time and day, which will not impact on any academic work or time inconvenient to your son/daughter. The questions will explore certain factors that may or may not influence their career aspirations. In order to ensure that the data is accurate, I would like your permission to record the interview. This will be included in the consent form that you will be asked to sign on your son/daughter's behalf. The interview will then be transcribed, for the purposes of this study, and your son/daughter will be given the opportunity to check that what has been written is a true reflection of their views.

In addition, at the conclusion of the interview your son/daughter will be debriefed on the specific research aim and encouraged to provide any further comments.

Are there any potential risks and benefits of taking part?

The study offers participants the opportunity to share experiences confidentially and anonymously with a view to developing an improved understanding of the experiences and perceptions of late adolescents; career aspirations as well as the barriers and enhancers of their journey and any emerging themes.

The only disadvantage to your son/daughter's participation, is the time that they will need to spend during the interview. Please be assured that I will keep the time to a minimum and that their participation is greatly appreciated. Your son/daughter is contributing to the knowledge of career aspirations for late adolescents, not only in Bermuda, but globally.

Anonymity and Confidentiality

Your son/daughter's interview will be anonymous and confidential, meaning that only myself, as the researcher, and my supervisor, Dr Ioanna Bakopoulou at the University of Bristol, will have access to the information. Once the interview is completed it will be assigned a numerical identifier to be used for the study. This, and any other information which could identify your son/daughter, will only appear on the consent form.

All data collected will be subject to the Bermuda's Personal Information Protection Act 2016 and in accordance with Bristol University's regulations (see <http://www.bristol.ac.uk/secretary/data-protection/>). Confidentiality will be maintained, unless it would result in breaking the law or there is a risk of harm to your son/daughter or anyone else.

The anonymised data will not be used for any other purposes other than to write a doctoral dissertation. All reasonable steps will be taken to ensure that your son/daughter cannot be identified, and if direct quotes are used, they will be attributed to an assigned participant number. It is possible that anonymised data may need to be shared with the dissertation supervisor, examiner or another researcher in order to validate findings from the data. Anonymised raw data will be kept for ten years after completion of the research. Direct quotes and findings of the study may be used in further publications on the research theme, this could also apply to presentations, conferences or training sessions.

Research approval, further questions or complaints

This study will be completed in line Bristol University School of Education ethics guidelines, based on BERA guidelines (2011) and ethical approval has been granted by the University of Bristol.

If you would like to raise a concern or complaint about the research please approach me in the first instance: bm16417@bristol.ac.uk. If it is not possible, or you deem it inappropriate, please contact the supervisor of the study: Dr Ioanna Bakopoulou – ioanna.bakopoulou@bristol.ac.uk.

Statement of Informed Parental Consent

By signing below, I confirm that I have read thoroughly the Research Information Sheet for Parental Consent, and I am fully informed of the expectations for this research. As such, I agree to the following:

- I agree to my son/daughter volunteering to participate in the above study.
- My son/daughter meets the participation criteria as outlined in the Research Information Sheet for Parental Consent.
- I understand that I can withdraw my son/daughter or withdraw my son/daughter's data from the research, at any point, without providing a reason up until two weeks after they have participated in the interview and there will be no negative consequences.
- I have been made aware of potential benefits and risks of participating in the study.
- My son/daughter has the right to decline a question, take a break or terminate the interview at any time.
- I agree that the interview will be recorded and then transcribed by the researcher for the purposes of data analysis and that my son/daughter will be given the opportunity to check what has been written is a true reflection of their views.
- My son/daughter will be provided with a debrief of the research aim and research questions, upon completion of the interview.
- I understand that the data my son/daughter generates will be anonymised, that the link between their name and the numeric identifier will only be held by the researcher and that it will be kept separate from the survey and interview data.

- I understand that all data collected will be held securely and confidentially and is subject to my son/daughter's rights under the Bermuda Personal Information Protection Act 2016 and in accordance with university regulations (see <http://www.bristol.ac.uk/secretary/data-protection/>).
- I give my consent that my son/daughter's anonymised data, including direct quotes and research findings, will be used to write a doctoral dissertation and may be used in any future publications on the research theme, which could also apply to presentations for conferences or training purposes.
- I understand that anonymised data may need to be shared with the dissertation supervisor, examiner or another researcher in order to validate findings from the data.
- I understand that anonymised raw data will be kept for ten years after completion of the research.
- I understand that all information will be held in strict confidence and only used for the purposes agreed upon.
- I understand that this research study has been reviewed and approved by the Ministry of Education.
- I understand that ethical approval for this study has been granted by the University of Bristol and that if I have any concerns about the researcher or the conduct of the researcher that I can contact the researcher in the first instance or contact the researcher's supervisor Dr Ioanna Bakopoulou – ioanna.bakopoulou@bristol.ac.uk.

Participant's name: _____ Date: _____

(Please print)

Parent(s)/Guardian(s) signature: _____

Appendix J: Interview Consent Form – (18 years)

Research Information Sheet

A research study exploring factors which influence career aspirations of older adolescents (16 to 19 Years).

Introduction

My name is Bonnie McGlynn. I am a doctoral student with the University of Bristol with 30 years' experience as an educator in Bermuda. Over the years, I have become interested in factors which influence the career aspirations of students who are nearing the end of their secondary school experience.

Purpose of the research

This research aims to explore the experiences and perceptions of older adolescents as they begin to make crucial decisions of their “next steps” and aspire towards their future careers.

What am I being asked to do?

As a student in an educational setting who is between the ages of 16 to 19 years of age within Term 1 of the 2019 – 2020 school year, I would like to invite you for an interview to discuss what influences your career aspirations.

Your rights

This study has been reviewed and supported by the Ministry of Education and personnel at your school, however, your participation in this study is voluntary. You are free to withdraw from the study at any point without providing a reason. You will be free to withdraw your participation from this study up to two weeks from your interview. After two weeks, the data will be anonymously merged, and analysis will start. You are also free to decline to answer any question(s) in any part of the interview. The interview can also be paused or terminated at your request.

The only demographic information you will be asked to provide is your gender, age (as of the time of the interview) and the type of educational setting you are currently attending. The estimated completion time for the interview is 20 minutes. The interview will be conducted face to face at your school. The questions will explore certain factors that may or may not influence your career aspirations. In order to ensure that the data is accurate, I would like your permission to record this interview. This will be included in the consent form that you will be asked to sign. The interview will then be transcribed for the purposes of this study, and you will be given the opportunity to check that what has been written is a true reflection of your views.

In addition, at the conclusion of our interview and summary of your answers, you will be debriefed on the specific research aim and encouraged to provide any further comments.

Are there any potential risks and benefits of taking part?

The study offers participants the opportunity to share experiences confidentially and anonymously with a view to developing an improved understanding of the experiences and perceptions of older adolescents; career aspirations as well as the barriers and enhancers of their journey and any emerging themes.

The only disadvantage to your participation in this study, is the time that you will need to spend during the interview. Please be assured that I will keep your time to a minimum and that your participation is greatly appreciated. You are contributing to the knowledge of career aspirations for older adolescents, not only in Bermuda, but globally.

Anonymity and Confidentiality

Your interview will be anonymous and confidential, meaning that only myself, as the researcher and my research supervisor, Dr Ioanna Bakopoulou at the University of Bristol, will have access to your information. Once the interview is completed it will be assigned a numerical identifier to be used for the study. This, and any other information which could identify you, will only appear on the consent form.

All data collected will be subject to the Bermuda's Personal Information Protection Act 2016 and in accordance with Bristol University's regulations (see <http://www.bristol.ac.uk/secretary/data-protection/>). Confidentiality will be maintained, unless it would result in breaking the law or there is a risk of harm to yourself or anyone else.

The anonymised data will not be used for any other purposes other than to write a doctoral dissertation. All reasonable steps will be taken to ensure that you cannot be identified, and if direct quotes are used, they will be attributed to an assigned participant number. It is possible that anonymised data may need to be shared with the dissertation supervisor, examiner or another researcher in order to validate findings from the data. Anonymised raw data will be kept for up to ten years after completion of the research. Direct quotes and the findings of the study may be used in further publications on the research theme, this could also apply to presentations, at conferences or training sessions.

Research approval, further questions or complaints

This study will be completed in line Bristol University School of Education ethics guidelines, based on BERA guidelines (2011) and ethical approval has been granted by the University of Bristol.

If you would like to raise a concern or complaint about the research please approach me in the first instance: bm16417@bristol.ac.uk. If it is not possible, or you deem it inappropriate, please contact the supervisors of the study: Dr Ioanna Bakopoulou – ioanna.bakopoulou@bristol.ac.uk.

Statement of Informed Consent for Participants

By signing below, I confirm that I have read thoroughly the Research Information Sheet for Participants, and I am fully informed of the expectations for this research. As such, I agree to the following:

- I volunteer to participate in the above study.
- I meet the participation criteria as outlined Research Information Sheet for Participants.
- I understand that I can withdraw or withdraw my data from the research, at any point, without providing a reason up until two weeks after I have participated in the interview.
- I have been made aware of potential benefits and risks of participating in the study.
- I have the right to decline a question, take a break or terminate the interview at any time.
- I agree that the interview will be recorded and then transcribed by the researcher for the purposes of data analysis, and that I will be given the opportunity to check what is written is a true reflection of my views.
- I will be provided with a debrief of the research aim and research questions, upon completion of the interview.
- I understand that the data I generate will be anonymised, that the link between my name and the numeric identifier will only be held by the researcher and that it will be kept separate from my survey and interview data.
- I understand that all data collected will be held securely and confidentially and is subject to my rights under the Bermuda Personal Information Protection Act 2016 and in accordance with university regulations (see <http://www.bristol.ac.uk/secretary/data-protection/>).

- I give my consent that my anonymised data, including direct quotes and research findings, will be used to write a doctoral dissertation and may be used in any future publications on the research theme, which could also apply to presentations for conferences or training purposes.
- I understand that anonymised data may need to be shared with the dissertation supervisor, examiner or another researcher in order to validate findings from the data.
- I understand that anonymised raw data will be kept for ten years after completion of the research.
- I understand that all information will be held in strict confidence and only used for the purposes agreed upon.
- I understand that this research study has been reviewed and approved by my educational setting and the Ministry of Education.
- I understand that ethical approval for this study has been granted by the University of Bristol and that if I have any concerns about the researcher or the conduct of the researcher that I can contact the researcher's supervisors: Dr Ioanna Bakopoulou – ioanna.bakopoulou@bristol.ac.uk.

Participant's name: _____ Date: _____

Signature: _____

Appendix K: Participant Consent Form (18 years and over)

October 2019

Dear Participant,

This year your school is partnering with Bonnie McGlynn, a Doctor of Education research student at the University of Bristol with over 30 years' experience as an educator in Bermuda. Bonnie has partnered with both public and private schools and the Adult Education School to provide a broad representation of Bermuda's youth. The purpose of this small-scale research study is to explore factors which influence career aspirations of students between the ages of 16 to 19 years of age. You will be asked to fill in a survey, which will take approximately 15 minutes.

The data collected in this study will be kept strictly confidential. All data collected will be subject to Bermuda's Personal Information Act 2016 and in accordance with Bristol University's regulations (see <http://www.bristol.ac.uk/secretary/data-protection>). The anonymised data, including direct quotes and research findings, will be used to write a doctoral dissertation and may be used in any future publications on the research theme, which could also apply to presentations for conferences or training purposes. In addition, it is possible that anonymised data may need to be shared with the dissertation supervisor, examiner or another researcher in order to validate findings from the data. Anonymised raw data will be kept for ten years after completion of the research. Only information based on the results of the group of participants will be used to report on this study. There are no known or anticipated risks to participation in this study.

Your participation in this study is entirely voluntary. You may refuse to answer individual questions as you progress through the survey. You have the right to withdraw all participation in this study, at any time, and there will be no negative consequences if you choose to do so.

This study has been reviewed and supported by the Ministry of Education and personnel at your school. It has also been approved by the University of Bristol's research ethics committee. However, the final decision about participation is yours. The overall findings of this study will be shared with your school and with the Ministry of Education.

If you are in need of any additional information about this study, please do not hesitate to contact Bonnie McGlynn (bonniemcglynn@gmail.com, 704-5809). In the event that you would like to raise a concern or complaint about the research please approach me in the first instance. If it is not possible, or you deem it inappropriate, please contact the supervisor of the study: Dr Ioanna

Bakopoulou – ioanna.bakopoulou@bristol.ac.uk. Please review the Participant Consent Form attached to indicate the status of your participation.

Your participation is greatly appreciated in this research study and will help to contribute to the overall understanding of what is known about the influences on a young adult's career aspirations.

Kind regards,

Bonnie L. McGlynn

Doctoral Student, Bristol University

Participant Consent Form – Career Aspirations Study

A research study exploring factors which influence career aspirations of late adolescents (16 to 19 Years).

- I have read the information letter about the Career Aspirations Study conducted by Bonnie McGlynn. I have been offered the opportunity to ask questions and receive any additional details about the study.

 - I acknowledge that my school will receive a summary of the research findings. All information gathered for this study will be used for research purposes only, including a doctoral dissertation, and will remain anonymous and be held in strictest confidence.

 - I am aware that I may withdraw my permission at any time without any negative consequences, by advising the school.

 - I understand that all data collected will be held securely and confidentially and is subject to my rights under the Bermuda Personal Information Protection Act 2016 and in accordance with university regulations (see <http://www.bristol.ac.uk/secretary/data-protection/>).

 - I understand that this research study has been reviewed and approved by both my School Principal and the Ministry of Education.

 - If I have any questions/concerns about the study I can feel free to contact the research student, Bonnie McGlynn (bonniemcglynn@gmail.com, 704-5809).
- Yes – I agree to participate in this study, and I am 18 years or older.
- No – I do not agree to participate in this study.

School: _____

Student's Name: _____

Student's Birth Date: _____ (day) _____ (month) _____ (year)

Signature: _____ Date: _____

Appendix L: Participant Survey

School: _____ Age: _____

Gender: _____ Date of Birth: _____

Thank you for taking part in this survey. There are four sections to complete (Part A, B, C and D). Your participation will contribute to research, which is exploring factors that influence the career aspirations of late adolescents between 16 to 19 years of age.

Part A

Please use the scale below to indicate the extent to which you agree or disagree with the following statements.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1. _____ I am good at carefully thinking about a situation, before I decide how I should act.
2. _____ I have a hard time making decisions when faced with difficult situations.
3. _____ I consider multiple options before making a decision.
4. _____ When I encounter difficult situations, I feel like I am losing control.
5. _____ I like to look at difficult situations from many different angles.
6. _____ I seek additional information not immediately available before attributing causes to behavior.
7. _____ When encountering difficult situations, I become so stressed that I cannot think of a way to resolve the situation.
8. _____ I try to think about things from another person's point of view.
9. _____ I find it upsetting that there are so many different ways to deal with difficult situations.

10. _____ I am good at being able to relate to what someone else is going through.
11. _____ When I encounter difficult situations, I just don't know what to do.
12. _____ It is important to look at difficult situations from many angles.
13. _____ When in difficult situations, I consider multiple options before deciding how to behave.
14. _____ I often look at a situation from different viewpoints.
15. _____ I am capable of overcoming the difficulties in life that I face.
16. _____ I consider all the available facts and information when attributing causes to behavior.
17. _____ I feel I have no power to change things in difficult situations.
18. _____ When I encounter difficult situations, I stop and try to think of several ways to resolve it.
19. _____ I can think of more than one way to resolve a difficult situation I am confronted with.
20. _____ I consider multiple options before responding to difficult situations.

Dennis & Vander Wal (2010)

Part B

Please indicate the extent to which you believe each task should be done by the man, should be done by the woman, or the man and the woman share the responsibility equally (when there is a relationship between a man and a woman).

Please use of the following options: 1 (should always be done by the man), 2 (should usually be done by the man), 3 (equal responsibility), 4 (should usually be done by the woman), and 5 (should always be done by the woman).

Score 1 - 5

- 1. Mow the lawn. _____

- 2. Prepare the meals. _____

- 3. Propose marriage. _____

- 4. Perform basic maintenance of cars/bikes such as change the oil. _____

- 5. Perform household cleaning. _____

- 6. Wash, fold and put away laundry. _____

- 7. Decorate the house. _____

- 8. Wash and polish the car. _____

Mills et al (2012)

Part C

In the space next to the statements below please indicate a number from “0” (not at all true of me) to “4” (very true of me). If the statement does not apply, circle “0”. Please be completely honest. Your answers are entirely confidential and will be useful only if they accurately describe you.

0 = Not at all true of me

1 = Slightly true of me

2 = Moderately true of me

3 = Quite a bit true of me

4 = Very true of me

1. _____ I hope to become a leader in my career field.
2. _____ I do not plan to devote energy to getting promoted to a leadership position in the organization or business in which I will be working.
3. _____ I want to be among the very best in my field.
4. _____ Becoming a leader in my future job is not at all important to me.
5. _____ When I am established in my future career, I would like to manage other employees.
6. _____ I plan to reach the highest level of education in my field.
7. _____ I want to have responsibility for the future direction of my organization or business.
8. _____ I want my work to have a lasting impact on my field.
9. _____ I aspire to have my contributions at work recognized by my employer.
10. _____ I will pursue additional training in my future occupational area of interest.
11. _____ I will always be knowledgeable about recent advances in my field.
12. _____ Attaining leadership status in my future career is not that important to me.
13. _____ Being outstanding at what I do at work is very important to me.
14. _____ I know I will work to remain current regarding knowledge in my future field.
15. _____ I hope to move up to a leadership position in my future organization or business.

16. _____ I will attend conferences annually to advance my knowledge.
17. _____ I know that I will be recognized for my accomplishments in my field.
18. _____ Even if not required, I would take continuing education courses to become more knowledgeable.
19. _____ I would pursue an advanced education program to gain specialized knowledge in my field.
20. _____ Achieving in my future career is not at all important to me.
21. _____ I plan to obtain many promotions in my future organization or business.
22. _____ Being one of the best in my field is not important to me.
23. _____ Every year, I will prioritize involvement in continuing education to advance my career.
24. _____ I plan to rise to the top leadership position of my organization or business.

Gregor & O'Brien, 201

Appendix M: Standardised Instructions – Survey

Standardised Instructions for Administration of the Survey

Standardised Instructions – *Before the survey is administered.*

Thank you for participation in this research study. This study aims to explore the experiences and perceptions of the career aspirations of late adolescents. Please fill in your gender, age and school in the spaces provided. Please read the questions carefully and answer as honestly as you can. Do not spend too long on any one question, in other words, don't over think your response – just answer what seems like your best answer and your most natural response.

When you have finished the survey part of the study, you will see two questions on page 4. Try to answer these questions as thoughtfully and accurately as you can – there are no wrong answers. Only when you finish the first question, should you read and complete the second question. The second answer can be the same as the first answer, but it does not have to be.

When you are finished, please turn over your paper, and I will collect it.

Please begin.

Please thank the participants after all of the surveys have been collected.

Appendix N: Original CFI Inventory (Dennis & Vander Wal, 2010).

The original development of the CFI with $N = 196$ private midwestern university students ($M = 20.20$ yrs.; 75% female) reporting a cognitive flexibility score of Time 1 (M) 102.98 ($SD = 13.91$) and Time 2 (M) 105.38 ($SD = 13.84$). The *Alternatives Scale*, reporting Time 1 (M) 67.59 ($SD = 9.41$) and Time 2 (M) 69.41 ($SD = 9.40$). The *Control Scale*, reporting Time 1 (M) 35.36 ($SD = 7.02$) and Time 2 (M) 35.92 ($SD = 6.77$) (Dennis & Vander Wal, 2010).

Original GRSS Scale (Mills et al., 2012)

The original development of the GRSS with $N = 800$ individuals ($M = 19.34$ yrs.; 64% female).

Original CAS-R Inventory (Gregor & O'Brien, 2016)

The original development of the CAS-R with $N = 583$ graduate and undergraduate women from a large mid-Atlantic university reporting for the three subscales: The *Achievement Scale*, reporting Time 1 (M) 25.77 ($SD = 3.95$) and Time 2 (M) 24.98 ($SD = 4.68$). The *Leadership Scale*, reporting Time 1 (M) 23.40 ($SD = 4.91$) and Time 2 (M) 23.25 ($SD = 5.17$). The *Education Scale* reporting Time 1 (M) 35.36 ($SD = 7.02$) and Time 2 (M) 35.92 ($SD = 6.77$) (Gregor & O'Brien, 2016).

Appendix O: Interview Guide

Semi-Structured Interview

A critical exploration of the role cognitive flexibility and gender stereotyping beliefs influence career aspirations of late adolescents.

Name: _____

I. Opening

Please fill in the Pre-Interview Questionnaire.

Thank you for your participation in this research study, which is exploring influences on career aspirations of youth aged 16 to 18 years. As we begin this interview, some of the questions I will ask you are about what a flexible person is like in your view. Flexibility, for the purpose of this interview is, the ability to shift back and forth between competing alternatives or options (Davidson et al., 2006). Do you have any questions about the definition or the interview before we begin?

Remember, you have the right to not answer any of the questions you are not comfortable with, just say pass. Also, you have the right to withdraw or stop participating in the interview at any time. Are you ready to begin?

I need you to confirm your gender, age and whether you attend a public, private or alternative education setting.

I appreciate that you are in the last (few) year(s) of school. After this school experience you are presently in is finished, could you tell me a little bit about how you are feeling about the next phase of your life? (positive/negative prompt if necessary)

II. Cognitive flexibility

- a. If a person was described as a flexible person, describe to me the kind of person you think that person would be like?

- b. If a person was described as an inflexible person, describe to me the kind of person you think that person would be like?

- d. How important do you think it is to be a flexible person?

III. Gender stereotyping beliefs

- a. Do you feel like your gender will give you an advantage, disadvantaged or it won't matter in your future? Can you explain why you feel that way?

- b. How much has your gender had an influence on your future career aspirations or goals?

- c. How much do you think your gender has helped you do something that maybe gave you an advantage over a person of a different gender?

- e. Did you ever want to do anything, but you changed your mind because of your gender? Can you explain why (if they said yes)

IV. Career Aspirations

- a. Describe your wishes and desires for your future educational goals?
- b. Describe your wishes and desires for your future occupational goals?
- c. Describe your wishes and desires for any future leadership goals?
- d. Generally speaking, do you feel you could do or be anything you want to be? If not, why not?
- e. How positive or negative do you feel about your future career aspirations?

V. Conclusion

Participants will be read a summary of their responses for each answer they have provided, in order to check for accuracy.

Participants will be debriefed about the purpose of the study and asked if they have any further comments they would like to add.

Thank you very much for participating in this interview. The purpose of this interview was to explore the role cognitive flexibility and gender stereotyping beliefs play in the career aspirations of late adolescents. Do you have anything else you would like to add? Do you have any further questions you would like to add about the research study? Is there anything I haven't asked you that you think it would be important to add? Please feel free to email with any additional thoughts.

If I need clarification on something you have said, or if I have further questions. Would you mind if I contacted you again? What would be the best method and the most convenient time for you?

Appendix P: Self-Reflexivity Guide

Self-Reflexivity Guide

(Based on questions/points raised in Tracy's (2010) article)

1. What is my relationship to the interviewee?
2. What was my impact on the scene?
3. What was the interviewee's reaction to me?
4. Did I establish trust?
5. What information was readily available?
6. What information may have been hidden?
7. Am I aware of my own attitudes, beliefs, values in this interview?
8. Did I ask for feedback?
9. What are my own reflexive considerations with this interview (my subjective feelings)?