Female Pilots: Career Experiences and Recruitment Discourses

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Abstract

Female pilots are under-represented in the commercial aviation industry. This study aims to explore recruitment and career issues for female pilots by using the three-dimensional critical discourse analytical framework of Fairclough (1989, 1995).

There are two phases to this research. In the first phase, the entry requirements for pilots in the commercial aviation industry are investigated to determine which factors are enablers and/or obstacles for women becoming pilots. In the second part of the study, the experiences of female pilots as expressed on pilot forums will be explored to understand the career issues women are facing as pilots. Nine airlines and three online forums are included in the research, the topics of which relate to female pilots and their career obstacles.

Analysis relating to the first dimension of Fairclough's CDA framework showed that problems such as work-life imbalance, pregnancy and childcare, piloting as a high-risk job, the lack of affirmative action, the lack of early career preparation, occupational stress, and male pilots' discrimination can discourage female pilots in their career progression.The second dimension of Fairclough's CDA framework illustrated that the development of the Internet has helped to broaden the pool of pilot job applicants. The wide application of online discussion forums also provides a platform for female pilots and their families to share their working experience and personal perceptions.

Analysis of the wider social context using Fairclough's third CDA dimension revealed how patriarchal values in the commercial aviation industry are still alive today. The findings of this study indicate that the commercial aviation industry remains a fairly masculine environment overall, and such patriarchal power continues to influence the number of female pilots who enter and advance in the aviation industry.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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Chapter One: Introduction

Commercial pilots play a key role in global transport and tourism every day; however it seems an unfamiliar occupation to many people, as the majority of passengers do not have a chance to greet the pilots who fly them to their destinations. Individuals may learn about the role of a pilot from advertisements, magazines, and movies such as Top Gun and Pearl Harbour. However, while the image portrayed of pilots in such media casts them as heroes, in most cases they are males. Females are rarely portrayed as commercial pilots, hence their low visibility in the commercial aviation industry (Gibbon, 2016).

The low visibility of female pilots reflects an under-representation of female pilots in commercial aviation internationally. Over the past 20 years, the ratio of women's participation in the global labour market has kept steady at 52 percent (Centre for Social Development et al., 2010). In 2015, there were 52.1 percent of salary-paid women in the global labour market (International Labor Organisation, 2016). However, occupational segregation has given rise to male-dominated and female-dominated professions (Centre for Social Development et al., 2010). As male-dominated occupations, aircraft controllers and technicians attract more men than women, although the percentage of females in such occupations increased slowly from 1991 to 2013 (Statistics New Zealand 2015).

This study aims to explore recruitment and career issues for female pilots. Critical discourse analysis will be used to understand how gender is portrayed in the discourses of pilot recruitment information posted by commercial airlines in their effort to attract women into the role and women's experiences as pilots. There are two phases to this research. In the first phase, the entry requirements for pilots in the commercial aviation industry will be investigated to determine which factors are enablers and/or obstacles

for women becoming pilots. In the second part of the study, the experiences of female pilots as expressed on pilot forums will be explored to understand the career issues women are facing as pilots.

The commercial aviation industry has not made significant efforts to attract and engage female pilots in recent decades (Goyer, 2011) and research has not uncovered why this is the case. Research focusing on career obstacles for female technicians in other male-dominated occupations such as engineering, construction, and information communication technology has found several obstacles. For example Amaratunga, Haigh, Shanmugam, Lee, and Elvitigalage (2006) found that in the construction industry, the image of being a male-dominated, organisational culture, and the physical working environment demotivates women to develop their careers in this industry. Prescott and Bogg (2011) point out that the informal bureaucratic model in the male-dominated information and communication technology (ICT) industry is detrimental for women who wish to advance in their career paths. However, due to the difference in job roles and specifications from ICT, female pilots have distinct career hurdles, although few studies have explored these problems.

The low ratio of females employed in male-dominated occupations also contributes to women's low status, power, and authority (Centre for Social Development et al., 2010) in the aviation industry. Therefore, it is important for airlines to understand the career barriers faced by female pilots, to promote women's power and status as pilots, to reduce turnover of female pilots, and to attract talented pilot applicants.

The lack of effort to attract and support female pilots has a negative impact on their retention in a male-dominated occupation. Nowadays, gender equality and diversity is advocated by various organisations and industries in order to eliminate gender discrimination and bias, which is especially important for studying gender issues (Shih, Young, & Bucher, 2013). Even though there are few reports about gender discrimination against female pilots, these women aviators still face other career

problems like sexism, male dominated training environments, and work-life imbalance. Furthermore, it is concerning that career issues faced by female pilots may be caused by airlines, passengers, families, and the women themselves.

To investigate the issues faced by female pilots, Chapter Two – Literature Review reviews early research on career issues and problems for women aviators. Historically, the under-representation of female pilots was caused by factors including gender stereotypes by male pilots and passengers (McCarthy, Budd, & Ison, 2015), work-life imbalance (McCarthy et al., 2015), low salary (Tovey, 2014), a male-dominated training environment (Germain, Herzog, & Hamilton, 2012), high training costs (Goyer, 2011), and the lack of a sound recruitment policy (Mitchell, Kristovics, & Vermeulen, 2006). In addition to female pilot recruitment, it is also important for women aviators to motivate themselves via informal learning (Gaffney, 2005). Based on previous studies, an online forum is one way for female pilots to develop their job performance via critical thinking and self-reflection (Yang, Sanders, & Rijn, 2013).

Chapter Three introduces netnography as the research method used for the purpose of exploring discourses and communications for pilot recruitment and female pilot career experiences. Fairclough's (1989, 1995) three-dimensional framework of critical discourse analysis (CDA) is used to analyse data collected from nine commercial airlines' online recruitment sites and three online forums.

In Chapter Four, the first dimension of Fairclough's framework – Discourse-as-Text – is applied to analyse the text and images used in online recruitment sites and the discussion content of online forums. The recruitment requirements and female pilots' career obstacles are investigated in this chapter as well.

Applying the second dimension – Discourse-as-Discursive-Practice – the study also discusses how the Internet facilitates online recruitment and the popularisation of computer-mediated communication among female pilots.

In Chapter Five the third dimension – Discourse-as-Social-Practice discusses the domination of military patriarchal power in the male-dominated commercial aviation industry and its impact on female pilots. The chapter also compares the data from online recruitment sites and online forums to discuss the main obstacles for female pilots in their career progression.

In Chapter Six, the findings are concluded briefly based on three dimension of Fairclough's CDA framework. The chapter also points out the limitations of the study in terms of data sources. The study is expected to arouse the airlines' attention to real obstacles faced by female pilots.

Chapter Two: Literature Review

The imbalance between male and female pilots in the commercial aviation industry has been the focus of discussion for several decades (Chad & Timm, 2009) (. This chapter reviews the under-representation of female pilots, and their career barriers. Influenced by patriarchal values and occupational stereotyping, few young girls plan to embark on careers in the commercial aviation industry. Female pilot students are challenged by the male-dominated training environment and expensive training fee as well. Additionally, gender discrimination and isolation from male peer impact on the confidence of female pilots to progress in their careers. Furthermore, work-life imbalance is also an issue for female pilots who have little time with their families.

2.0 Underrepresentation of female pilots

Industrialisation created enthusiasm for science, inventions, and technical development. The success of the Wright brothers' first flight in 1903 introduced aviation into peoples' lives, and symbolised the beginning of technological modernisation that drove a great number of men and women to take on the challenges of acquiring new skills (Bix, 2010). However, women aviators were unable to gain access into the aviation industry as pilots in the initial stages of aviation development, due to people's suspicion of their flying capability and technical skills (Bix, 2010).

Even though the first female aviators were frustrated by the limitations of aviation regulations and individuals' prejudices, they still looked forward to freedom in the air. Well-known female pilots, like Amy Johnson, Amelia Earhart, Blanche Scott, and Ruth Law, played a key role in early aviation history, setting records and achieving milestones in aviation industry (Bix, 2010; Neal-Smith & Cockburn, 2009; Smart,

1998). However, there has continued to be a low ratio of commercial female pilots since the beginning of the 20th century. For instance, between 1919 and 1965, the majority of female staff employed in the commercial aviation industry within the United Kingdom (UK) worked as ground crew or flight attendants rather than pilots in the cockpit (Neal-Smith & Cockburn, 2009). In 1933, there was one commercial female pilot in the UK airline industry, who resigned from the job due to marriage (Neal-Smith & Cockburn, 2009). In Canada, strong gender stereotypes also resulted in a low ratio of females employed in the aviation industry during and after World War I (McDowell, 2015).

The ratio of female pilots has been low in the commercial aviation industry for a long period of time (Chad & Timm, 2009). Since 1970, each decade witnessed that there was an increase of 3,000 female pilots employed, but they only represented 5.15 percent of the total number of pilots in the United States (Goyer, 2011). There are various reasons why female pilots feel forced to give up progressing their careers, resulting in the high turnover of these women in the commercial aviation industry (Rosjan, 2016). Beyond recruitment, retention also plays a key role in female pilots' career progression. Research has identified some reasons for the under-representation of commercial female pilots. This chapter aims to review the literature on female pilots' careers and the role of online forums for self-motivation and self-reflection.

According to the Federal Aviation Administration of the United States, in response to the reduction of the pilot population due to retirement and the growth of the aviation industry, more pilots are required (Germain et al., 2012). In 2015, Boeing, the world's largest aerospace corporation, presented its forecast in the Boeing Pilot and Technician Outlook. They forecast that between 2015 and 2034 there will be a demand for 558,000 commercial pilots globally (Boeing, 2015). However, this figure does not specifically include women and the proportion of female pilots is low in the international aviation industry (Chad & Timm, 2009; Davey & Davidson, 2000). Information collected from the International Society of Women Airline Pilots (ISA) showed that 4,000 out of 130,000 worldwide pilots are females, which accounts for only three percent of the

global pilot population (Morris, 2015).

After World War II, in terms of the history of the aviation industry in the United States, even though equality legislation was issued in 1964 to support the recruitment of female pilots, there were fewer than 145 female pilots during the 20-year period from 1964 to 1984 (Davey & Davidson, 2000). From 2010 to 2013, the ratio of female pilots in the United States increased slightly from 5.39 percent to 6.78 percent in the active pilot population (General Aviation Manufacturers Association, 2014; Goyer, 2011). Simultaneously, the number of female pilots employed in the commercial aviation industry decreased from 8,175 to 6,911 in the same time frame (Women in Aviation, 2013). This means that the total population of female pilots increased but the number of female pilots in the commercial airlines decreased.

Historically, the number of female pilots employed in countries other than the United States has been very small (Davey & Davidson, 2000). Only three female pilots were employed in Air France in 1984 (Davey & Davidson, 2000). In British Airways, women accounted for less than two percent of pilots in 1995 (Davey & Davidson, 2000). Today British Airways has 200 female pilots out of 3,500 (Prendergast, 2015). Even though the number of female pilots in British Airways is more than that in any other UK airline, the ratio of female pilots is still low (Prendergast, 2015). Noticeably, the proportion of female pilots is relatively high in some Asian countries, such as 12 percent in India, with an increasing number of women starting their career in the cockpits of commercial airliners in Asia (Rosjan, 2016).

2.1 Challenges and barriers to female pilots

Nowadays, women still face obstacles to becoming professional pilots due to various barriers such as cultural barriers and traditional perceptions (Rosjan, 2016). Hence, it is timely to explore the challenges to the recruitment, retention, and career progression

of female pilots employed in a male-dominated profession.

Influenced by history and culture, the pilot profession has always been male-dominated (Walton & Politano, 2014). The culture surrounding the position is characterised by masculine beliefs and values, which stand in the way of females' access to jobs (Walton & Politano, 2014). Mills (1998) points out that during the earlier wars of the 20th century, men were regarded as intrepid and courageous in their fight against the enemy, while women were deemed to be housekeepers, wives, and mothers. In the United States, the masculine aviation culture originated from the military term "the right stuff", referring to aviators' courage and quick decision making in battle and their success in achieving personal and organisational goals. This characterisation led to a preference for male pilots within the aviation industry (Mitchell, Kristovics, Vermeulen, Wilson, & Martinussen, 2005).

After World War I, commercial aviation companies in countries such as the UK and the United States were composed of aircraft manufacturers, war office officials, pilots, air force officers, ground crew, and senior management (Mills, 1998). The majority of these positions were taken by post-war male soldiers and officers who were influenced by the wartime will-to-win spirit – and it was these employees that finally shaped civil aviation into a male-dominated industry (Mills, 1998).

Thousands of female pilots in Western countries were involved in World Wall II; however, despite their flying competence and courage, they were still not trusted to be as brave as males (Smart, 1998). In contrast, male pilots were described as brave, loyal, reliable, and skilful heroes by airlines, and passengers were convinced by airline advertising that experienced male pilots could guarantee their safety (Mills, 1998). There is no doubt that patriarchal values was gradually developed in the commercial aviation industry in the pre-and-post World War II period.

Hooks (2013) defines patriarchy as a political-social system in which men have the

inherent rights to dominate the society. Furthermore, men are believed to be superior to women in patriarchy (Hooks, 2013). Gneezy, Leonard, and List (2009) point out that women are less competitive than men in a patriarchal society where men often hold main roles and positions. Patriarchal values has been advertised for a long term in the commercial aviation industry. The image of the male pilot has been rooted in individuals' minds for a long time, and it makes them feel safe and secure (Ashcraft, 2007).

In the early history of the commercial aviation industry, being a pilot was regarded as a masculine profession and women were not involved in its cultural norms (Neal-Smith & Cockburn, 2009). Such cultural sexism is still expressed in this predominantly male workplace and this threatens women's status, power, and authority, and involves them in the dilemma of gender inequality (Neal-Smith & Cockburn, 2009). Individuals who hold strong gender stereotypes and bias are influenced by cultural sexism and believe that men and women should choose jobs which are socially appropriate for their gender (McDowell, 2015). These negative perceptions and bias are obstacles for female pilots in terms of training, recruitment, and promotion, and many job opportunities for capable females are lost.

Young girls are negatively influenced by occupational stereotyping in this masculine profession, and few of them choose pilot as a possible career choice (Gibbon, 2016). As long as children have a strong sense of occupational segregation and stereotypes, it is difficult for girls to enter into certain professions (Gibbon, 2016). Gender stereotyping not only discourages young girls from choosing to be a pilot as their career, but occupational segregation also has a detrimental influence on female pilots already employed. This segregation tends to marginalise female pilots at work, and involve them in unfairness, discrimination, and prejudices (Reynolds, Milut, Jacob, Hirschheimer, & Cox, 2016). Individuals are suspicious of female pilots' flying proficiency and working capability (Reynolds et al., 2016).

Being the minority means female pilots face career challenges in terms of stereotypes, discrimination, and prejudices (Mitchell et al., 2006). For instance, in Australia, females could not be commercial pilots until 1979 when equal employment opportunity legislation was issued (Mitchell et al., 2006). Traditional masculine beliefs and values have been rooted in the aviation industry for a long period (Mitchell et al., 2006). Influenced by such patriarchal values, female pilots are viewed as a novelty on the flight deck due to their appearance and behaviour in the aviation industry (Davey & Davidson, 2000). To some extent, discrimination is caused by this "novelty", and as Ward (2008) points out, these female employees are rarely welcomed in male-dominated areas.

2.1.2 Gender discrimination

Female pilots can be confronted with discrimination from two sources – passengers and male pilots (McCarthy et al., 2015). Female pilots usually draw attention from passengers due to their different appearance from their male peers (Davey & Davidson, 2000). It has also been found that negative passengers tend to be suspicious of female pilots' capability of flying, parking, landing, and ability to multitask, even though women perform better and tend to score higher than men in pilot training (McCarthy et al., 2015). Furthermore, in such a masculine working environment, a number of male pilots may not be used to working with female pilots, and even worse, behave in an aggressive manner towards female pilots (Davey & Davidson, 2000). In a study by McCarthy et al. (2015), the authors found that some female pilots had experienced derogatory language and sexist remarks from their male peers who repeatedly emphasised that these were "jokes". Even worse, Davey and Davidson (2000) found that some female pilots had to endure sexist remarks made by both passengers and male peers without any support from co-workers. All of these biases and prejudices involve social stigmas against female pilots, which not only diminishes the value of female pilots in a public environment but also has an adverse influence on the pilot population (Winter, Rice, & Mehta, 2014).

Fortunately, this situation has improved in some airlines. Brazilian Airlines issued a female pilots' protection statement after one male passenger was escorted out of Belo Horizonte airport due to his unwillingness to fly with a female captain (van Gelder, 2012). The statement does not allow any discrimination or disrespect against any of the 1,400 female staff in the Brazilian airline. Although the international commercial aviation industry tries to protect female pilots from sexism, discrimination, prejudices, and disparagement, hostile behaviours, attitudes, and opinions do still exist among some passengers and staff. A good example of efforts to support female pilots can be found in Thailand's AirAsia where gender discrimination is not an obstacle in pilot recruitment and training, and the airline emphasises the professional capability of pilots (Rosjan, 2016).

2.1.3 Isolation from male peers

Females employed in a masculine workplace may have fewer opportunities for career progression, with a stronger sense of isolation from male peers (Germain et al., 2012). Even though females endeavour to perform outstandingly in male-dominated industries like the military, they are still often confronted with strict standards for promotion in a hostile working environment (Germain et al., 2012). Girls need to study and work harder than boys to achieve an above average performance should they decide to be pilots and challenge the traditional aviation system (Davey & Davidson, 2000). Some female pilots suffer from the pressure of needing to provide a constantly outstanding performance without any mistakes at work (Davey & Davidson, 2000). Additionally, negative attitudes from male leaders, co-workers, and passengers towards females may result in a lack of confidence and high stress for female pilots (Burgess & Borgida, 1999; Davey & Davidson, 2000). Thus, the lack of acceptance from aviation organisations discourages most women from becoming commercial pilots (Germain et al., 2012).

2.1.4 Work-life Imbalance

The imbalance between work and life can be a barrier for both male and female pilots in their career advancement due to unstable working schedules (McCarthy et al., 2015). Female pilots are also often mothers responsible for family affairs. Some females persist with their career as a pilot despite the fact that it is not a family-friendly job. However it does not mean that this job position is more suitable for men (McCarthy et al., 2015). Lepore (2011) states that pilots may be away from home for days, and may not have much advanced notice regarding their working schedules. That means more strategic planning is needed to achieve work-life balance (Borzykowski, 2015). Working hours vary considerably almost every day for each pilot (Flight Deck Friend, n.d.). For instance, in one week, a pilot may fly for only 4 hours starting from 5 o'clock in the morning on the first day, while working for 13 hours beginning from 12 o'clock at night in the following days (Flight Deck Friend, n.d.).

Family considerations also come into play as some female pilots carefully think about having children because it can be extremely challenging for some women to suspend their careers if they are pregnant (Davey & Davidson, 2000). Pregnancy is a normal reality for many women and there is no direct connection between pregnancy and aviation safety (Marjoribanks, Farquhar, Armstrong, & Showell, 2014). However, it is evident that pregnancy certainly changes the size and shape of the body, which potentially influences physical dexterity and necessary postures during flight or pre-flight activities (Civil Aviation Authority of New Zealand, 2009). Furthermore, the danger of either early miscarriage or premature labour should also be taken into consideration, because both situations may lead to female pilots' physical and mental injury (Civil Aviation Authority of New Zealand, 2009). Thus, the Civil Aviation Authority (CAA) of New Zealand requires female pilots to report their pregnancies as early as possible (Centreline Aviation Medical Services, n.d.). As long as the CAA

receives a report from an antenatal clinic, the pregnant pilot is allowed to have her ordinary maternal leave (OML) and can fly until 26 weeks (Centreline Aviation Medical Services, n.d.). Obviously, pregnancy easily interferes with the female pilots' normal work. If an opportunity for promotion is available during pregnancy, female pilots may give up the chance due to their maternity leave plans.

The difficulty in managing family affairs and a tough working schedule is not the only reason for the imbalance of work and life, as time spent on training and practice can also be a daunting task for pilot students. A pilot's license requires an eight-month training course, and 40 to 80 hours flying time with instructors, which is time-consuming for the majority of flight students (Lepore, 2011). Female students usually take longer than males to succeed in meeting the minimum requirements and obtaining licences (Mitchell et al., 2006). Compared with male pilots, some female pilots are less confident in flying an airplane, so they need more training hours before their first solo flights (Mitchell et al., 2006). A retired American Airlines female captain pointed out that a large amount of time is devoted to training, which takes women far away from home, giving them little time to enjoy life with their families (Pawlowski, 2011).

2.1.5 Male-dominated training environments

The training environment has been identified as another obstacle for women, due to the influence of patriarchal values, as flight training is also generally designed for male pilots (Germain et al., 2012). Therefore, female students may find they have little emotional support due to the lack of female flight instructors (Depperschmidt & Bliss, 2009; Goyer, 2011). Mitchell et al. (2006) point out that skills can be developed with appropriate training based on different gender preferred learning styles (Depperschmidt & Bliss, 2009). Obviously, a masculine training environment may not appeal to all female students. One female pilot expressed that flight training was an amazing

experience but the loneliest thing she had been involved in (Lepore, 2011). The lack of mentoring and support from female instructors and networks tends to decrease female students' self-efficacy, confidence and enthusiasm for study (Germain et al., 2012). Hence, more female professionals and instructors are required by female flight students, because they are regarded as role models to motivate women into the aviation industry in the pursuit of their careers (Depperschmidt & Bliss, 2009).

2.1.6 The gap between high cost of training and low salary

For both male and female pilot students, the cost of training is usually beyond their personal means (Goyer, 2011). The cost of a flight-training lesson in a two-seat airplane with fuel and instructor increased from between $10 and $15 in 1960 to between $130 and $160 in 2011 (Goyer, 2011). Over the last decade, commercial airline pilots in the United States have been gradually selected from civilian trained graduates rather than from retiring military cockpit crew (Aviation Week & Space Technology, 2015). In general, these pilots graduate from four-year aviation schools like the University of North Dakota, and the tuition fees for the training is up to $50,000 a year. (Aviation Week & Space Technology, 2015). According to research conducted by the British Airline Pilots' Association (BALPA), flight training cost in Britain ranges from £75,000 to £100,000 (Tovey, 2014). As the flight training fees are too expensive for many to be able to afford some female pilots drop out of their study in aviation schools (Depperschmidt & Bliss, 2009). Reducing the cost of training is recommended in order to attract more female pilots into the commercial aviation industry (McCarthy et al., 2015).

There is also concern about the low starting salaries of new pilots. Compared with expensive training costs, the low starting salary each year results in pilot students' lack of interest in their career (Aviation Week & Space Technology, 2015). For example, the salary of a newly graduated pilot employed in airlines such as British Airways is around

£27,000 to £29,000 a year, but then increases to £56,000 to £66,000 in one decade if (s)he has been in command of a plane for at least four years (Tovey, 2014). Based on data collected by PayScale Human Capital (2016), the salary of commercial pilot in the United States ranges from $30,633 to $153,770, and the average salary is $64,739 annually. Experience plays a key role in the income promotion for the job, so the initial salary for a new commercial pilot is relatively low (PayScale Human Capital, 2016).

2.2 The importance of well-organised recruitment

Well-organised recruitment is essential in the attraction of female applicants to pilot positions in a male-dominated industry (Anderson & Pucel, 2003). The process of recruitment and selection is complicated in that candidates are required to meet the standards determined by both civil aviation regulations and airline policy (Mitchell et al., 2006). Due to the lack of flight experience and lower levels of licences and endorsement, fewer women are successful in pilot recruitment (Mitchell et al., 2006). Male students may be influenced by high school maths and science courses related to aviation and aerospace, and the early exposure to aviation may lead them to consider their career development in the aviation industry (Anderson & Pucel, 2003). As long as they perceive being a pilot as a glamorous, technical profession, they will strive for it (Anderson & Pucel, 2003). In comparison, female pilots are less influenced by previous study experience; instead, they choose being pilot as a career due to their desire to pursue a non-traditional job that challenges them to prove themselves (Anderson & Pucel, 2003).

Anderson and Pucel (2003) recommend developing recruitment strategies based on different factors influencing career choice. As Peter Stockwell – chief operating officer of CTC Aviation in Hamilton explained when interviewed, more female pilots would bring diversity into the aviation industry and address the gender gap. He also suggested that to appeal to female students, girls' schools need to be involved in the aviation field

via building sound cooperative relationships (J. Small, 2014). If female pilots are attracted by sound recruitment policies and strategies, they will have a sense of inclusion and motivation. On the other hand, some feel that issues of equality and suitability in the recruitment of females in a male-dominated profession should be conquered by the women themselves (Neal-Smith & Cockburn, 2009). Both male and female applicants should be required to meet the requirements for qualifications and experience in recruitment for pilots (Mitchell et al., 2006). Women should perform as well as male candidates (Neal-Smith & Cockburn, 2009).

In addition to the low numbers of female pilots, the numbers of women in non-pilot aviation roles is also under-represented (Piric, 2013). In the United Kingdom, only 25 percent of the air traffic controllers are women (Piric, 2013). In the United States, only 2.2 percent of aviation mechanics are women (Airport-technology, 2013). According to data collected from aviation careers in the United States by Women in Aviation (2013), women account for around 23 percent of non-pilot positions in which the highest proportion are in flight attendant roles at 80.04 percent. In comparison to the number of flight attendants, the ratios of females involved in roles such as engineer, flight navigator (only one female), and parachute rigger are extremely low (Women in Aviation, 2013). As female staff employed in airlines, flight attendants are accepted by passengers and flight crews, while women working in mechanics positions are confronted with discrimination and unfair treatment (Oster & Hansen, 1997). It is unfair for women working in mechanics positions to be treated differently due to other colleagues and passengers' strong gender stereotype. With the growing demand for both male and female employees in aviation and aerospace technology fields, gender diversity plays a key role in female recruitment and retention management (Jones, 2014).

2.3 The importance of retention

Beyond the attraction and recruitment of women into pilot roles, the retention of female pilots is a significant human resource management issue in the commercial aviation industry. The significant role requirements and difficulties in acquiring a pilot's license have already discouraged females from male-dominated positions in the commercial aviation industry. However, in addition to airlines' retention management, female pilots are also advised to learn self-promotion tactics, as personal experience and professional skill development are affective for retention (Gaffney, 2005). As mentioned previously, female pilots confront different kinds of obstacles in their occupational development. They are pushed by patriarchal working conditions to improve themselves via constant learning. In terms of career progression, there are four additional learning activities available for employees: networks, informal learning, community involvement, and various forms of mentoring (K. S. McDonald & Hite, 2005).

2.3.1 Informal learning

Informal learning is often preferred as an approach for career development. Different from pre-designed formal learning, informal learning is characterised by unplanned, unstructured, and non-institutional factors (Berg & Seung Youn, 2008). Informal learning can happen in any daily interactions outside of curricular, or courses, or training, or workshops (Berg & Seung Youn, 2008). Individuals can constantly learn additional knowledge, skills, and philosophies by participating in activities, dealing with challenges, cooperating with other colleagues, and communicating with clients (Cunningham & Hillier, 2013). For instance, younger workers can exchange ideas and job-related knowledge with older workers via collaborating with each other (Cunningham & Hillier, 2013). In the commercial aviation industry, informal learning opportunities are also vital for female pilots to develop their careers. Female pilots can be motivated by others' encouraging experiences and personal perceptions in the

informal learning when they are confronted with career obstacles.

With the development of information communication technology, social media creates space for individuals to share knowledge and exchange ideas with each other from the same or different industries. Nowadays, individuals rely on social media as a networked tool for the purpose of idea expression and exchange (Dabbagh & Kitsantas, 2012). An online forum is one kind of social media platform, which can assist with informal learning (Yang et al., 2013). The integration of social media into the educational system is regarded as a vital transformation of practice, so that formal curriculum has been partially replaced by online communities with shared personal thoughts, information, and skills (Dabbagh & Kitsantas, 2012). It is easy and convenient to ask for help on a forum if individuals are confused about their career choice and experiences. Discussing topics and sharing experiences on forums usually results in individuals coming into an agreement with each other. Hence, with the emergence of social media in educational systems, informal learning has been convenient for learners at all ages to study in a personal learning environment where they can create, share, and organise their ideas and learning content (Dabbagh & Kitsantas, 2012).

The combination of critical thinking and self-reflection in the process of informal learning can improve job performance, and help individuals to meet career goals (K. S. McDonald & Hite, 2005). Education is an ongoing process in which each employee should take every important opportunity to improve their working behaviours, and pick up professional knowledge and skills (Depesova, Turekova, & Banesz, 2015). Currently, there are plenty of experiences shared online for female pilot students and graduates to consider their occupational planning. These resources help them to think of how they balance work and life, and deal with prejudice and stereotypes they may face.

In short, the under-representation of female pilots has been a problem in the commercial aviation industry for a long time. Employed in a male-dominated industry, female pilots face to various challenges in their career progression. The strong power of patriarchal

values and cultural sexism has negative impact on working and training environment. Female pilots not only confront with gender discrimination from male colleagues and passengers, can experience stress from fierce competition with male pilots. In addition, highly inflexible working schedule and low salary lead some female pilots to give up their flying dreams in the commercial aviation industry. How to recruit professional female pilots should be taken into consideration by airlines all over the world. The design of sound recruitment and selection strategies plays a key role in attracting female pilots and young girls to develop their careers in the commercial aviation. With the development of online networks and social media, female pilots are also encouraged to communicate with and learn from each other. Such informal learning is suggested for female pilots to deal with various barriers at work in order to motivate themselves in their career progression in the commercial aviation industry.

Chapter Three: Research Approach

This study aims to analyse the efforts made by airlines to attract female pilots and the career obstacle faced by these women. It is designed to investigate the reasons for the under-representation of female pilots in the commercial aviation industry. In this chapter, firstly the method and data sources used in the research will be described. Then critical discourse analysis (CDA) is discussed to provide insight into the framework used to guide analysis.

3.1 Method

This research is an interpretive study analysing airline recruitment information and career experiences of female pilots in the commercial aviation industry. An Interpretive Approach is designed for understanding the context of the phenomena (Myers, 1997). In terms of an interpretive research paradigm, researchers aim to understand the world via interpreting views, explanations, and observations of research participants (Ponelis, 2015). As a qualitative research method, netnography was used for this study in order to explore discourses and communications in pilot recruitment and female pilot career experiences. Data was collected from digital newspapers, recruitment webpages, and online forums. In addition, CDA was used to analyse data in the study. A three-dimensional framework of CDA proposed by Fairclough was adopted in the research (Blommaert & Bulcaen, 2000).

3.1.1 Netnography

With the establishment and improvement of the Internet, information can be shared and obtained online by both individuals and organisations. Individuals tend to participate in different online communities and express their personal perceptions, which provides opportunities for researchers to investigate various cultural-based groups (Kulavuz-Onal & Vásquez, 2013). Online communities are the virtual space where individuals

prefer to express their real desires and ideas (Van Hout & Hearne, 2016). Today various social media tools, such as Facebook, Twitter, and different forums are not only used for interaction, communication, and discussion regardless of geographic distance, but also have benefits for researchers to collect and analyse data. Netnography refers to an ethnographic research approach based on the generation of online communication. It aims to investigate and interpret consumer behaviours of cultures and online communities (Kozinets, 2002). Different from other research methods, netnographic researchers do not interact with people involved in online communities, but focus on online textual discourse (Van Hout & Hearne, 2016). Thus, netnographic research contains participants' observations via making use of computer-mediated communications to collect data, aiming to understand social and cultural phenomena (Jeanes & Huzzard, 2014).

The term "netnography" is composed of Inter(net) and eth(nography), meaning that it is influenced by not only traditional ethnography but also the rapid development of networks and high technology (Jeanes & Huzzard, 2014; Maoying & Keji, 2014). Netnography is guided by traditional ethnography to investigate online communities and cultural groups in order to gain rich and thick insights, and understand various phenomena (Ulusoy, 2015). For instance, in terms of data collection, ethnographic researchers participate in cultural groups or communities as an observer. They gather information via interview, group discussion, or face-to-face communication; however, as an online research method, the data collection of netnography is based on online text and pictures (Maoying & Keji, 2014).

Even though netnography is restricted to non-participant observation, it has other special advantages. Firstly, an open and anonymous online environment is more accepted by individuals who are reluctant to participate in real groups and communities (Xun & Reynolds, 2010). They are more courageous and flexible in expressing their opinions, which provides researchers with greater accessibility to respondents. Secondly, as mentioned before, netnography can be conducted irrespective of the

geographic distance between researchers and the researched (Xun & Reynolds, 2010). That means it is easy for netnographic researchers to maintain continuous contact with individuals in the research. Thirdly, data resources of netnography originate from digital documents, which can be permanently archived information. This allows researchers to observe and analyse data for a long-term research (Xun & Reynolds, 2010).

As mentioned previously, this research focuses on the recruitment and career experiences of female pilots in the commercial aviation industry, divided into two phases. In the first phase, the entry requirements for pilots in the commercial aviation industry were investigated to determine which factors are enablers and/or obstacles for women becoming pilots. In the second phase of this study the career experiences of female pilots were analysed. With the development of the Internet and technology, recruitment efforts increasingly involve online mediums, thus data on recruitment can be collected from airlines' websites and online recruitment advertisements. According to the advantages of netnography, it was convenient for netnographic researchers to collect information online without interfering with female pilots' lives and work. Furthermore, some female pilots also enjoy sharing their work experiences in a male-dominated industry with others on forums. The nameless online environment makes them more relaxed and open to express their perceptions as opposed to any reservations they might feel when talking in face-to-face interviews (Xun & Reynolds, 2010). This is advantageous for researchers aiming to gather reliable and valuable information and data.

Kozinets (2002) emphasises the significance of preparation for conducting netnographic research. He names the first step in preparation as "entrée", whereby researchers identify a specific research question and then decide on particular online forums (Belk, 2007; Mkono, 2013). Data collection and data analysis are the following two steps (Mkono, 2013). During the process, researchers should investigate online forums and groups, and strive to understand forum participants such as female pilots and their families (Kozinets, 2002). Data on recruitment and careers in this study was

collected from pilot recruitment information on airline websites. Additionally, data will also be gathered from forums where female pilots and their families discuss barriers in pilot training and career development, which will be discussed below.

3.1.2 Data Sources

For the first phase of the study, nine airlines was targeted: Emirates, Virgin Atlantic Airways, South African Airways, Tiger Airways, Air Canada, Air New Zealand, United Airlines, Singapore Airlines, and SAS Group. Although many airlines recruit their pilots via agencies and recruitment websites, the nine international airlines used in this study still recruit their own pilots. They issue recruitment information on their organisational websites and specify qualifications required by applicants. It is beneficial for pilot applicants to understand directly the airlines' entry requirements for the positions. What is more, organisations' websites enable not only pilot applicants but also researchers to understand these airlines' organisational culture, ideology, and service conception. These airlines are located in different continents and are influenced by various cultures and social systems – factors which may be embodied in their recruitment efforts. Thus, investigating the recruitment messages of these airlines can help to identify potential entry barriers for female pilots and wider issues that can affect career progression.

Table 1: Airlines' Online Recruitment Sources

Airline	Recruitment Webpage Title	Website Address
Emirates	Explore our careers-pilots ➤ Minimum Requirements for the Position of Direct Entry Captain	http://www.emiratesgroupcareers.com/english/careers_overview/pilot_jobs/pilotjobs.aspx ➤ http://www.emiratesgroupcareers.com/english/Careers_Overview/Pilot_Jobs/Minimum_Requirements_Captain.aspx
Virgin Atlantic Airways	Pilot Recruitment	http://careersuk.virgin-atlantic.com/pilots.html
South African Airways	Pilot Programme - South African Airways	http://www.flysaa.com/za/en/SAA_Careers/RelatedLinks/cadet.html
Tiger Airways	Pilot Recruitment (A320 Type Rated) - Tigerair (Page 1)	https://www.tigerair.com/news/Pilot_Recruitment_20100820.pdf
Air Canada	Pilots at Air Canada	http://www.aircanada.com/en/about/career/section_pilots.html
Air New Zealand	Becoming a Pilot-Careers at Air NZ	https://careers.airnz.co.nz/explore-our-careers/career-areas/more-about-becoming-a-pilot
United Airlines	Pilot Positions and Career Opportunities		https://www.united.com/web/en-US/content/company/career/pilot.aspx
Singapore Airlines	Cadet Pilots Recruitment	https://www.singaporeair.com/en_UK/us/careers/cadet-pilots-career/
SAS Group	Pilot in SAS – Qualification Requirements	http://www.sasgroup.net/en/qualification-requirements/

In addition to nine airlines, three online forums are included in the research, which are listed in Table 2. The topics of these forums relate to female pilots and their career obstacles. These online forums aim to provide a virtual space for female pilots, female staff in different airlines, and their family members to discuss career troubles for female pilots. Furthermore, these forums not only point out the hurdles for female pilots in their career progression, but also create opportunities for female pilots to share their working experience in order to encourage a younger generation of female pilots to continue their career when they feel discouraged.

Table 2: Pilot Forums

Forum	Topic Title	Website
PPRuNe Professional Pilots Rumour Network	Why Do So Few Women Become Pilots?	http://www.pprune.org/private-flying/531893-why-do-so-few-women-become-pilots.html
Airliners.Net	Do Female Pilots Make Less Than Men?	http://www.airliners.net/aviation-forums/tech_ops/read.main/338179
PPRuNe Professional Pilots Rumour Network	Female Pilots in Emirates	http://www.pprune.org/middle-east/511396-female-pilots-emirates.html

3.2 Critical Discourse Analysis

Critical discourse analysis (CDA) will be used to analyse data in this study as it is a preferred method for investigating social reality (Mikinori, 2008). CDA refers to a program of analysis in social inequality manifested in language (Rahimi & Riasati, 2011). CDA originated at the end of 1980s for the purpose of studying real instances of social interaction manifested in linguistic form, such as discrimination perceptible in language (Blommaert & Bulcaen, 2000). More specifically, CDA aims to reveal social

problems hidden in social practices in order to prevent social unfairness dominating or marginalising people (Le, Lê, & Short, 2009). Thus, CDA is regularly used to investigate social problems like injustice, inequality, discrimination, and prejudice (Rahimi & Riasati, 2011). Rahimi and Riasati (2011) point out that CDA regards language as a powerful tool that can reflect individuals' ideologies, ideas, intentions, identities, and culture which play a dominant role in the society.

Van Dijk (1995) names CDA as a problem-or-issue-oriented approach. That means CDA is driven by current social issues with the expectation of revealing relationships among language, power, and ideology (Van Dijk, 1993). To some extent, social power is a type of control that influences the minds and behaviours of dominant group members and can be displayed in text and conversation (Van Dijk, 1995). According to the literature, female pilots are confronted with various career problems due to patriarchal power in the commercial aviation industry, which forces female pilots to endure stress, underestimation, inequality, and prejudice at work. These career problems can be analysed through critical discourse analysis via interpreting text available on online forums and in recruitment advertisements.

Critical discourse analysis has been the focus of several researchers including Fairclough (1989, 1992, 1995, 2003), van Dijk (1993, 1997, 1998, 1999, 2001) and Wodak (1996, 2000, 2001), all of whom have greatly contributed to theoretical framework creation in CDA (Cui, 2010). Distinct from van Dijk's social-cognitive model (1997) and Wodak's discourse-historic model (2001), Fairclough investigates the relationship between linguistic manifestation of specific social problems in discourses and social structures (Cui, 2010; Rahimi & Riasati, 2011). In this research, a three-dimensional theoretical framework of CDA proposed by Fairclough (1989, 1995) will be used.
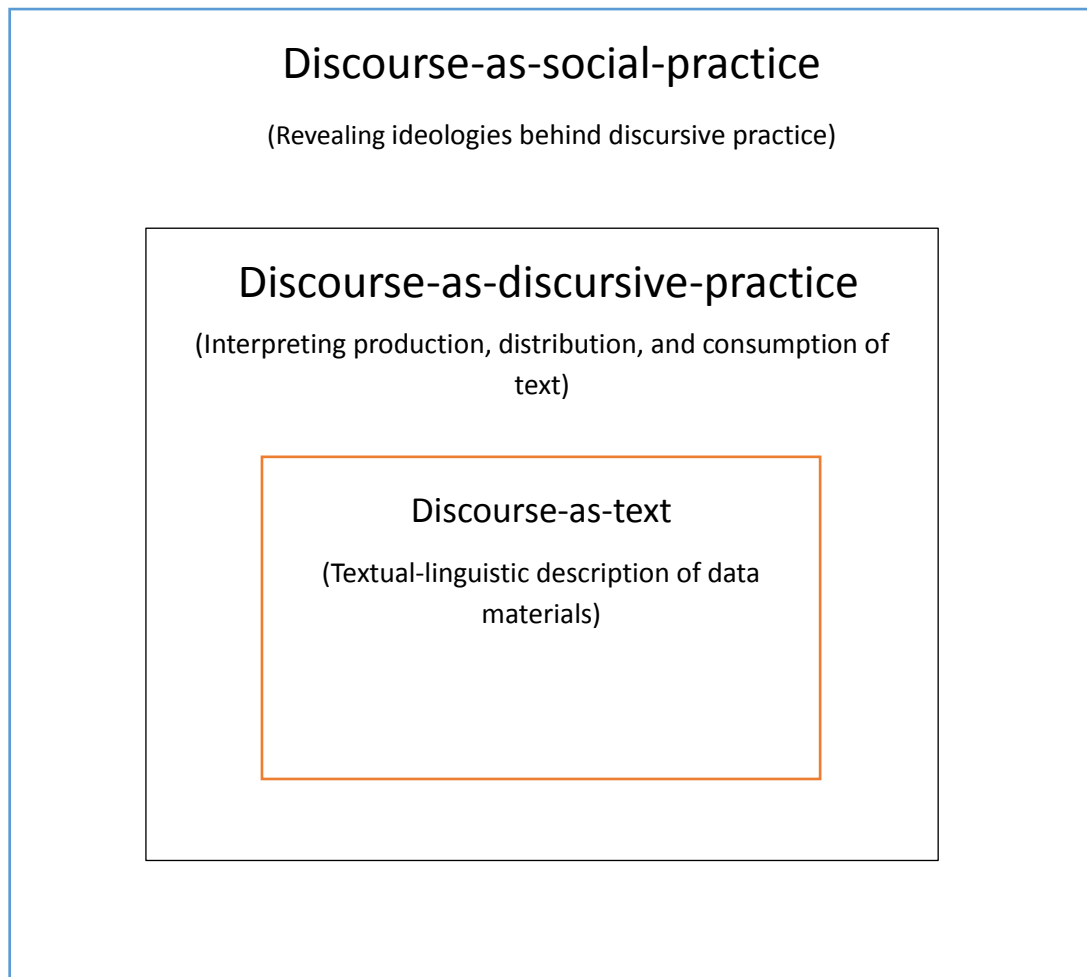
Figure 1: Dimensions of discourse and critical discourse analysis (Janks, 1997a)

The three interrelated dimensions shown in Figure 1 cover the objective of the analysis, the process of producing the objective, and the socio-historical background influencing the process (Janks, 1997b). Each dimension also corresponds to a specific level of analysis, namely, text analysis, process analysis, and social analysis (Janks, 1997b). Fairclough emphasises the significance of language in our social life and this plays a key role in his framework (Rahimi & Riasati, 2011). Thus, Fairclough's proposal is also considered as a framework of "communicative events" (Mikinori, 2008, p. 22). In the three dimensions, 'text' can be viewed or heard in either its written or spoken form; 'discourse practice', as one kind of social practice, involves producing, distributing, and consuming text; and 'social practice' indicates social and cultural activities which result in text production and consumption in communicative events (Mikinori, 2008).

Based on the three-dimensional model of CDA, three tasks are required for researchers: description, interpretation, and explanation (Le et al., 2009). Firstly, in text analysis, it is important for researchers to clearly interpret the textual-linguistic description of data materials, including vocabulary, grammar, and linguistic structure (Le et al., 2009; Rahimi & Riasati, 2011). The second task is to understand the process by which researchers come to comprehend the relationship between discursive interaction and the text by using their knowledge, ideologies, and cognition (Le et al., 2009; Rahimi & Riasati, 2011). The last task is to reveal ideologies behind interpretive procedures with an explanation of social and cultural impacts on discourse (Le et al., 2009; Rahimi & Riasati, 2011)

This research will be classified into three dimensions according to Fairclough's (1989, 1995) framework of CDA. The first dimension utilises discourse-as-text (Blommaert & Bulcaen, 2000), which involves analysing text on relevant websites, and comments on discussion boards (Jennie Small & Harris, 2014). In this study, for the first phase, data was gathered from airlines' online recruitment sites. Airline companies involved in this study are spread all over the world and include Emirates, Virgin Atlantic Airways, South African Airways, Tiger Airways, Air Canada, Air New Zealand, United Airlines,

Singapore Airlines, and SAS Group. These airlines are well known in the commercial aviation industry due to their relatively high-quality service, routes serviced, and market share. All of them have domestic and international flights, therefore are active in targeting talented pilot applicants globally. These airlines have specific and comprehensive requirements and require applicants to be highly qualified, which is part of the process of attracting talented pilots.

The second phase of this study analysed the career experiences of female pilots shared and portrayed in online forums. There were three forums that will be analysed with a focus on linguistic features, the choices of vocabulary, the usage of grammar, and the text structure (Blommaert & Bulcaen, 2000). This will help the researcher to identify themes relating to recruitment within discussion forums.

The second dimension of the CDA framework is discourse-as-discursive-practice (Blommaert & Bulcaen, 2000). This dimension considers the social context issue of how these recruitment websites and forums are produced, distributed, and consumed (Jennie Small & Harris, 2014). This study is a netnographic research based on the rapid development of online recruitment and community discussion. Thus, the dimension analyses how these recruitment websites and online forums have become increasingly accepted and popular among pilots and their families. Furthermore, "the force of utterance" is one main element in Fairclough's framework and will be taken into consideration in this analysis (Faulkner, 2010). The force of utterance refers to illocutionary force, meaning what the speaker actually intends to express in that utterance (Faulkner, 2010). It is characterised by three functions: ideational function, interpersonal function, and textual function (Silva, 2007). On the one hand, the content on recruitment sites indicates the aviation industry's expectations for 'ideal' pilots via presenting requirements for applicants; on the other hand, discussion on forums reveals female pilots' personal inner thoughts concerning their careers. The discourse of the requirements on online recruitment sites and thoughts shared in online forums will reflect the main obstacles for female pilots in their career progression (Silva, 2007).

During this interpersonal process, these thoughts and opinions in online forums may reveal female pilots' real personality and their expectations for careers. The force of utterance plays a key role in keeping coherence and contextual linkage in textual construction (Silva, 2007). It helps the researcher to logically and rationally consider context in the recruitment information and forum discussion (Silva, 2007). Thus, the interpretation of the force of utterance helps the researcher to analyse the procedures involved in the production, distribution, and consumption of these websites.

The third dimension is Discourse-as-Social-Practice, which deepens the interpretation of ideologies based on data analysed in the first and second dimensions (Blommaert & Bulcaen, 2000; Jennie Small & Harris, 2014). This dimension involves the analysis of the social context around the content, including how the power bases of the aviation industry influence female pilots, the motivation from inspirational working experiences shared online, the airlines' incentives for female pilot recruitment, and the interests of airline companies and networks. Discourse indicates individuals' ideologies, thus study on language and text can help researchers to understand people's ideology in practice (McCloskey, 2008). Sustained by ideologies, various relations of power permeate in industries and organisations, dominating individuals, culture, and systems (Martín Rojo, 2001; McCloskey, 2008). In the third dimension, the ideology supporting the power that controls female pilots and even excludes them from the aviation culture will be considered.

With the development of technology, online recruitment has been gradually popular among recruiters to express their desires in recruitment and retention. Furthermore, online forums are widely used by female pilots and their families to exchange perception on career progression. As a qualitative research method netnography plays a key role in research analysis based on online text. In this study netnography helps to investigate the ideal pilot applicants needed by airlines and female pilots' challenges at work. Nine online recruitment websites and three online forums are the main data sources. Based on the first dimension of CDA-discourse-as-text, the findings will be

concluded via interpreting text on airlines' online recruitment and forums in the following chapter.

Chapter Four: Findings

In this chapter, the findings in the first and second dimensions – Discourse-as-Text and Discourse-as-Discursive-Practice from Fairclough's (1989, 1995) CDA three-dimensional framework will be applied to analyse data collected from online texts. The third dimension, Discourse-as-Social-Practice will be presented in Chapter Five – Discussion to further analyse the impact of social context on the career development of female pilots.

4.1 Analysis of the texts

The first dimension of Fairclough's model - Discourse-as-Text involves analysis of the written text and images as portrayed on the nine airline websites - the Emirates Group, Virgin Atlantic Airways, South African Airways, Tiger Airways, Air Canada, Air New Zealand, United Airlines, Singapore Airlines, and SAS Group. Information was also gathered from conversations available on three forums, all of which focus on female pilots' career issues.

A commercial aviation pilot, as a professional occupation, requires applicants to reach the minimum requirements of position entry. Airlines all over the world have several common and universal requirements for pilot applicants. The online recruitment sites of the airlines featured in this research show that minimum requirements and qualifications can be classified into the following eight criteria; 1) educational level, 2) citizenship, 3) language, 4) height and age, 5) license and qualification requirements, 6) medical requirements, 7) flight time requirements, and 8) personal attributes. In the following sections, the position requirements are reviewed to understand the potential career issues and obstacles faced by female pilots.

4.1.1 Educational level

Six of the nine airlines state the educational requirement for pilot positions on their recruitment pages. A senior aviator qualification is required by most airlines as a minimum requirement for pilot applicants. Four out of nine airlines also require applicants to provide their high school diploma or matriculation certificate. In terms of a high school diploma, several airlines have specific requirements for performance in particular subjects. For example, South African Airways requires applicants to have achieved a high grade in mathematics or statistics, and physical science or computer science. Clearly outstanding performance in secondary education has a significant impact on the evaluation process by recruiters.

In terms of overseas applicants, the international standards for education required are also available on some airlines' recruitment sites. For example, Air New Zealand demands that overseas applicants have a secondary school qualification recognised in New Zealand that meets University Entrance (UE) standard or a New Zealand Qualification Authority (NZQA) assessment. SAS Group outlines different secondary education levels for applicants from different European nations.

In addition to secondary school education, a background in tertiary education is also stated as essential by United Airlines requires. Their applicants are required to have graduated from a college or university with a diploma or degree. Even though a tertiary educational background is not an essential qualification in Air Canada, applicants with an aviation college degree or university degree are preferred.

4.1.2 Citizenship

In terms of citizenship, different airlines have various restrictions on pilot applicants. Four out of nine airlines have requirements concerning applicants' citizenship. Applicants for airlines located in countries characterised by diversity and overseas

immigrants should have local citizenship or permanent resident status. For example, New Zealand and Canada are countries with strong population mobility, thus Air New Zealand and Air Canada only consider pilot applicants who are residents or citizens. Pilot applicants with citizenship are not restricted by the working hours or the permitted period of employment stipulated by visa types. Compared to pilot applicants who have working visas, people with citizenship have more stable and long-term work opportunities in their countries. Employing citizens is therefore beneficial for airlines that wish to retain the employment ratio of commercial pilots. However, three out of nine airlines have no requirement for citizenship, but applicants should have the right to work and live in the countries in which the airlines are based. For example, SAS is a Scandinavian airline and applicants may come from European countries such as Denmark, Sweden, and Norway. Their pilots have their own citizenship but should be legally allowed to work in other European countries.

4.1.3 Language

The airlines in this study have distinct language requirements for pilot applicants based on their customer base and routes that they fly. The airlines need applicants who either are native English speakers or have strong English capability. For example, Virgin Atlantic Airways expects pilots to be native English speakers and SAS recruits pilots who are fluent in English speaking and writing. The airlines have specific English standards for applicants who are not native English speakers. For example, South African Airways requires applicants to have achieved a high-level grade in English during their secondary education. Air New Zealand and Virgin Atlantic Airways have their own English assessment standards for pilot applicants. Additionally, the International Civil Aviation Organisation (ICAO) English Level has a language standard for recruiting pilot applicants who are not native English speakers. ICAO English Level, as an international criteria, helps recruiters to assess applicants' English ability and ensure whether their English capability is appropriate for the positions.

Applicants need to reach Level 5 in the Emirates Group and Level 4 in Tiger Airways. In addition to English, fluency in other languages is required by SAS. As an airline characterised by service around European countries, SAS require their pilots to be fluent in one of the Scandinavian languages as well as English. Bilingual ability is one determinant in the pilot recruitment process.

4.1.4 Height and Age

Four out of nine airlines in this study have restrictions for height and age for pilots. Such requirements therefore can present as barriers for applicants whose height and/or age fall outside of the requirements. It is noticeable, however, that the height requirements can vary considerably amongst airlines. The height requirement proposed by SAS ranges from 157 cm to 200 cm, while the minimum height required by Singapore Airlines must be higher than 165 cm, almost a 10 cm difference between these two airlines for minimum height. Age requirements are influenced by the age restrictions for gaining a pilot license and by aviation regulations. To some extent, age ranges for pilots are decided by the commercial aviation industry rather than airlines and individuals who satisfy the age requirement are eligible for acquiring a pilot license. For Air New Zealand, 18 years is the minimum age for obtaining a current Commercial Pilots License (CPL).

Statutory regulations in different countries can also present age restrictions for pilots. For instance, Tiger Airways requires applicants to be younger than 65 years old, because this is the maximum age formulated by the Air Navigation Order. Hence, some airlines need to follow the rules of state authorities in terms of age requirement.

4.1.5 License and qualification requirement

The majority of airlines describe the types of pilot licences they require in detail.

According to these requirements, a valid Airline Transport Pilot Licence (ATPL) is the most basic and common licence. However, two out of nine airlines – the Emirates Group and Tiger Airways – demand an ATPL qualified by ICAO. Other airlines such as state airlines require the national qualified license. Virgin Atlantic, United Airlines, and Air New Zealand require applicants to have a national (ATPL) licence or certificate. In addition to an ATPL, several airlines also require pilots to have other types of licences. For instance, Air New Zealand requires pilot applicants to have both a Commercial Pilot Licence (CPL) and an ATPL as technical qualifications.

Apart from a pilot licence, due to the wide use of radiotelephones in the commercial aviation industry, pilot applicants for Tiger Airways and United Airlines are required to prove their radiotelephone competence. Applicants to these airlines should have a valid radiotelephone-related certification and licence.

In addition to pilot licence and radiotelephone-related licence, a successful pilot should be competent in teamwork and safety operations as well. Hence, a Multi Crew Cooperation (MCC) course is designed for pilots to develop their skills in team cooperation with other flight crew. Pilot applicants' learning and training experience in an MCC course is valued by some airlines so an MCC qualification is another criteria for applicants. Virgin Atlantic has high demand for a MCC qualification as significant as a British-issued ATPL. United Airlines emphasises that applicants should complete an MCC course in acquiring a Joint Aviation Requirements Commercial Pilot Licence (JAR-CRL). That means MCC plays a key role in both acquiring a pilot licence and working with other cockpit crew.

4.1.6 Medical requirements

Eight of the nine airlines state medical requirements for pilot applicants, with the majority of them requiring pilot applicants to provide a Class 1 medical certificate.

Unfortunately, additional details of medical certification are not given on the online recruitment sites studied. However, two airlines in the research not only stress general medical requirements, but also explain that applicants' need visual acuity. Singapore Airlines clarifies the specific requirement for candidates who have myopia and astigmatism. Even if these applicants have undergone corrective eye surgery, their previous visual acuity should meet the minimum visual requirement. The cockpit is a relatively special workplace where good eyesight is essential for pilots to operate an airplane safely. As each flight can be influenced by factors such as changeable weather and flight altitude, pilots need to be physically and psychologically healthy in order to fly in potentially dangerous working conditions.

4.1.7 Flight time requirements

Flight hours can be accumulated and recorded for each pilot, to indicate whether the pilot has rich flying experience or not. Such experience plays a key role in each flight and dealing with flying risks. Data shows that fight time requirements for pilot applicants in nine airlines ranges from 1000 to 7000 hours. However, flight time requirements can differ among airlines based on different job positions, the types of planes, and pilots' previous experience. For instance, Tiger Airways requires captain candidates to have over 3500 hours flight experience, which is 2000 hours more than the time required for first officer applicants. Furthermore, rich flying experience on different kinds of planes such as a multi-engine jet, fixed-wing turbine, Airbus, or Boeing may be an advantage for applicants when applying for roles. Senior job positions also have high demand for flight time on various planes. Applicants for Tiger Airways and the Emirates Group are required to have command experience in multi-crew cooperation, and such experience is a strong determinant for captain positions. Distinct from other airlines, Virgin Atlantic and Air Canada expect applicants to have military flight experience. Furthermore, applicants for Virgin Atlantic should meet not only 3,000 flying hours but also have experience in flying heavy aircraft. The Emirates

Group has a similar requirement for applicants to have command experience. It can be concluded that flight time is an important requirement for applicants, especially for the more senior positions.

4.1.8 Personal attributes

Personality attributes are not described by airlines as a minimum requirement, but are vital criteria for recruiters to consider. Teamwork is valued by the majority of airlines as a key factor for success of service and relationship in the cockpit. Communication and interpersonal skills play a key role in teamwork. Additionally, strong flexibility and adaptability are also included as important personal attributes. Airlines expect pilot candidates to be capable of quick decision making and skilful and professional in resolving uncertainty and inconsistency in all circumstances as there is no doubt that pilots are responsible for flight safety. In addition to outstanding job performance, the good conduct and behaviour of pilots is also taken into consideration in recruitment. Air New Zealand states that they want to recruit pilots who are honest and frank. Tiger Airways and SAS also focus on the clean criminal record of pilot applicants. Hence, an eligible applicant should not only be capable of accurate aircraft operation, customer service, and cooperation with colleagues, but also be mature and self-motivated with a good reputation.

4.1.9 Analysis of images

Four of the nine airlines present images of pilots on their recruitment sites – South African Airways, Air New Zealand, Singapore Airlines, and Virgin Atlantic Airways. The other five airlines do not include images and photos on their recruitment sites. These photos demonstrate the working status and working environment of pilots in the various airlines. These pictures are designed to communicate to applicants that pilots enjoy their work in these organisations. The female pilot on the Air New Zealand

recruitment page demonstrates her confidence and kindness in front of passengers in the airport (figure 3). The photo issued by South African Airways shows that female and male pilots cooperate with each other in the cockpit (figure 2). Alongside the photo of a senior first officer, Virgin Atlantic Airways also shares his inspiring working experience, aiming to welcome talented and self-motivated pilots to develop their future career in the airline (figure 5). The combination of the pilot's photo and his story is designed to demonstrate the reality of his experience. The Singapore Airlines recruitment site includes a photo of two male pilots smiling, indicating to pilot applicants that they can expect an enjoyable working experience with the airline (figure 4).

It is noteworthy that both South African Airways and Air New Zealand present photos of female pilots. Both women wear pilot uniforms, portraying them as professional pilots. Air New Zealand and South African Airways are expressing gender diversity in the pilot ranks via these photos that aim to tell applicants that any talented, responsible, and eligible pilot is welcome regardless of their gender. Even though there is no written text around the photos introducing these pilots, such powerful images are beneficial for the airlines to attract female pilot applicants. Nevertheless, even though two of four airlines show female pilots on their recruitment sites, most of the photos posted (Figures 2-5) are still dominated by male pilots. Thus, there is a clear tendency by the studied airlines to feature a male in the role of a pilot, something that is deeply rooted in the culture of the commercial aviation industry and passengers' minds.

Figure 2: South African Airways

(Source: http://www.flysaa.com/za/en/SAA_Careers/RelatedLinks/cadet.html)

Figure 3: Air New Zealand

(Source: https://careers.airnz.co.nz/explore-our-careers/career-areas/more-about-becoming-a-pilot)

Figure 4: Singapore Airlines

(Source: https://www.singaporeair.com/en_UK/us/careers/cadet-pilots-career/)

Figure 5: Virgin Atlantic

(Source: http://careersuk.virgin-atlantic.com/pilots.html)

4.1.10 Discourse as text – online forums

The smaller number of female pilots in commercial aviation compared to males draws focus to the decisions females pilots make regarding career choice and development. Data was gathered from three online forums that captured discourse relevant to female pilots in the commercial aviation industry. The majority of forum participants were pilots, their families, or staff in the commercial aviation industry. They shared their working experience on online forums, and discussed the career hurdles faced by female pilots. Forums participants were from various countries including the United States, France, Australia, New Zealand, Vienna, Canada, United Kingdom, and Dubai, and they represented voices from all over the world. Six themes found are reported in this section.

Forum members expressed their perceptions of and feelings about female pilots and discussed potential career obstacles for these women. The forums provided a space for women to participate in the conversation and exchange their personal opinions about the reasons for the minority of female pilots in the commercial aviation industry. In their experiences, female pilots perform at the same high level as male pilots, but they are confronted with career issues in a male-dominated industry.

The first theme found was that female pilots may choose to give up their career due to the imbalance between high training fees and low income received when employed as a pilot early in their career. This theme was discussed by several participants, including a participant on the PPRuNe Professional Pilots Rumour Network forum, who queried,

Why do so few women take up flying? Simple. Don't have the money and don't have the spare time. And once you have kids, forget it. (PPRuNe Professional Pilots Rumour Network, 2014).

One participant with work experience in the commercial aviation industry pointed out

on the Airliner.net forum that female pilots tend to suspend their careers earlier than male pilots:

I rarely see female pilots in DL uniform, but I see lots of guys my age or younger. I think a lot of women get out of the career earlier than men. For many generations of pilots there are many lean years before the major opportunity knocks. (Airliners.Net, 2013)

Discourse in this first theme focused on the fact that female pilots are unable to tolerate the low rates of income before being promoted to senior positions with a higher income. Relatively high tuition fees and low income once employed as a pilot force many female pilots to give up their careers in the commercial aviation industry. As discussed previously, a high number of flying hours are required both to gain a pilot's licence and to meet the stipulations of airlines. Each pilot student is therefore likely to spend thousands of hours in practice at great cost.

The second theme found was that pregnancy or childcare may interfere with female pilots' career progression. A male pilot described on the PPRuNe Professional Pilots forum that his wife passed the General Flight Test under his instruction when she was eight-months pregnant. However, she gave up being a pilot when she became pregnant again one month after giving birth (PPRuNe Professional Pilots Rumour Network, 2014). Pregnancy and/or childcare responsibilities may consume time and energy, and easily distract attention from work. Forum discussion centred on how challenging it is for females to balance being a responsible mother as well as a professional pilot. The discussion also indicated that it is difficult for women to balance the amount of flight time required in flying training and family life. An idea often repeated on the forums was that if a woman has children or plans to have children, she might as well give up her flying plans. It was made clear that a woman's decision to become a pilot requires a great deal of support from partners and family members. Another male pilot supported his wife to become a commercial pilot, and both of them agreed to have only one child

(PPRuNe Professional Pilots Rumour Network, 2013). Hence, pregnancy and childcare may force female pilots or students to give up opportunities in their career development

The third theme to emerge centred on whether women are attracted to risky jobs, such as flying an airplane. Forum discussion showed that being a pilot is regarded as a high-risk job position, which is a deterrent to both men and women:

I've met as many men as women who think the perceived risk of flying is unacceptable! (PPRuNe Professional Pilots Rumour Network, 2014)

However, forum participants felt that a greater number of men than women are interested in risky activities and jobs. One individual replied that compared with women, men are more visible in extreme activities like motorcycle racing, BASE jumping, wingsuit plummeting, and free climbing (PPRuNe Professional Pilots Rumour Network, 2014). Another participant replied that men seek risk and that being a pilot may satisfy their "thrill gland" (PPRuNe Professional Pilots Rumour Network, 2014). Altogether, it was felt on the forum that fewer female pilots than males enjoy the thrill of flying and therefore more men than women choose a career as a pilot (PPRuNe Professional Pilots Rumour Network, 2014).

The fourth theme found questioned whether affirmative action taken in the 1980s could be relevant today to attract women into careers as pilots. This affirmative action originally sought to attract women into male-dominated industries and tried to promote women as equal to men in these industries (Balafoutas & Sutter, 2012). According to two forum participant, in the mid-1980s, female pilots were attracted by affirmative actions taken by airlines such as United Airlines and Air Canada (Airliners.Net, 2013):

...a female pilot could have expected to earn more throughout her entire career because companies like United would actively seek out minorities and women to fill their pilot ranks. (Airliners.Net, 2013)

In the 1980s, when a government owned an airline, they had a mandate to hire pilots who were "female, French, native Canadian and/or visible minorities". (Airliners.Net, 2013)

Hence, compared with young men, young women had a greater chance of being hired in the commercial aviation industry in the 1980s. However, this kind of government-supported recruiting policy has been gradually reducing since the 1990s.

The fifth theme found was that early preparation for technical male roles may positively influence girls' ambition to be a pilot. Many discussants in the forums concentrated on the influence of education on women's career choices towards the commercial aviation industry. Some forum participants stated that schools should treat students equally by providing equal access to the same courses for both boys and girls. One participant expressed that courses like metalwork or car maintenance should be promoted to both boys and girls, which may increase girls' orientation towards traditionally "male" jobs from an early stage:

Assuming that if we just treat boys and girls exactly the same, and encourage girls to enter male professions (and vice versa), we will have 50% of each in each profession eventually. (PPRuNe Professional Pilots Rumour Network, 2014)

According to these participants' previous experience, girls lack awareness of traditionally male-dominant job positions and industries. Their unfamiliarity with traditional male jobs limits opportunities for them to be exposed to these jobs. The man whose wife gave up an opportunity to become a pilot when she became pregnant also conveyed that a lack of school education in technical and physics subjects has an adverse impact on acquiring a pilot licence. During his own learning process, he found that the basic technical and physics knowledge required to operate an aeroplane was easy for him, because he had completed relative courses in his middle and high school

education. However, these subject areas were difficult for his wife to grasp:

She is not stupid but found the whole subject quite alien. We men absorb quite a lot of the technical stuff over the years, many (more) of us have done physics O-level/GCSE so we know vaguely some of how an airplane works, we probably have picked up the principles of 4 stroke engines etc. All this was new to her so made the whole learning curve much steeper. (PPRuNe Professional Pilots Rumour Network, 2014)

One idea discussed in the forums is that women who have technical backgrounds tend to be more confident in being pilots. One female pilot shared on the forum that she joined the aviation industry late, but her knowledge of physics and aircraft operation, and the courage developed in her by her father, inspired her to be a pilot (PPRuNe Professional Pilots Rumour Network, 2014). Thus, previous experience in learning fundamental knowledge related to engineering, science, and physics plays a key role in the career decision made by men and women to join the commercial aviation industry as a pilot.

The sixth theme found was that the stress of working with male colleagues discourages female pilots in their career development. One of the forum participants who had work experience in airlines stated that female pilots have to work harder in order to achieve the same status as male pilots. In addition to the stress created by fierce competition with male pilots, the participant also pointed out that many female pilots are stressed as a result of working with male colleagues who are arrogant:

I have met and worked with many arrogant pilots, whose attitudes to women were firmly rooted in the 1950's and would certainly have put me off as a woman…. The women I've worked with in the past definitely had to try harder to achieve the same status as their male counterparts. Peer pressure counts for a lot. (PPRuNe Professional Pilots Rumour Network, 2014)

In contrast, forum discussion also made clear that female pilots are often welcomed and accepted by male colleagues. One male discussant expressed that it was his pleasure to fly with female pilots (PPRuNe Professional Pilots Rumour Network, 2013). It appears that female pilots are both accepted and unaccepted by male colleagues. What was noted in the forums is that negative attitudes and behaviour from some male pilots can demotivate female pilots to continue with their career. Low status and disrespect at work diminish career aspirations held by female pilots.

As a whole, even though female pilots face many hurdles in their career development, these women are still encouraged by a large number of supportive forum participants. One forum participant recommended that female pilots focus on their job responsibilities, rather than their gender:

Show you are a pilot and they forget you are not a man. (Airliners.Net, 2013)

Another forum participant pointed out that female pilots are no strangers in the cockpit and they should be respected without criticism of their gender or professional capability (Airliners.Net, 2013). This forum participant encouraged women to respect their job position, maintaining that if female pilots take their jobs seriously, they will also gain respect from their colleagues and passengers. Within the forums, courage was also described as vital for female pilots. Two forum discussants felt that family members helped women build the self-confidence to fly (PPRuNe Professional Pilots Rumour Network, 2014). One of these participants was inspired by her father's experience as a sailor, and her grandfather's experience as a racing boat designer. Their previous experiences in risky occupations encouraged her to be a pilot.

4.2 Discourse-as-discursive-practice

In this section, the second dimension of the CDA framework used will be discussed. Discourse-as-Discursive-Practice considers how online recruitment information is produced, distributed, and consumed. Online recruitment information issued on organisational webpages provides a platform for applicants to learn about organisations and their cultures. An online discussion forum also gives individuals the opportunity to share their thoughts and feeling in a virtual space where they can choose to remain anonymous. Forum members share their experience, ask for help, and assist each other via exchanging opinions. The following present a discussion on why airlines post recruitment information online and why online forums have become increasingly accepted and popular among pilots and their families.

In addition to traditional recruitment tools, today both employers and job applicants engage with online recruitment methods. Airlines compete with each other to attract talented pilots with excellent working and learning experiences. Despite intensifying the competition in the "war for talent", online recruitment is regarded as an ideal method of targeting a broader pool of talented candidates (Parry & Tyson, 2008). Due to the nature of the job position, global airlines seek competent pilots who can not only satisfy the minimum requirements, but also have rich flying experience, command skills, and a safe history.

A recruiting revolution started with the emergence of the Internet in the middle of 1990s (Parry & Wilson, 2009). The Internet was immediately recognised as a low cost, efficient recruitment tool. As Bizer et al. (2005) explains recruiters prefer online recruitment methods as opposed to traditional methods based on advantages that include low cost, high accessibility to applicants, expansion of selection pool, and time saving (Parry & Tyson, 2008). Online recruitment information posted on corporate websites is widely adopted as job candidates can learn about compensation, salary and

benefits, organisational culture, career development, and the image of a company (Cober, Brown, Levy, Cober, & Keeping, 2003). At the same time, these companies can attract candidates to different positions via broadcasting their organisational brands, career development space, cultures, and ideologies (Parry & Tyson, 2008).

In addition to the minimum requirements for pilot positions, some airlines also display their organisational values and cultural diversity by posting staff stories and photos. Organisational culture is also expressed through these posts and is part of attracting talent to an airline. For example, on their online recruitment page, Virgin Atlantic Airways share an inspiring story of a senior first officer. Air New Zealand and South African Airways also post female pilot photos on their recruitment websites. All of these examples aim to encourage male and female pilots and students to apply for job positions.

In terms of the "illocutionary force of utterance", these airlines aim to convey that female and male pilots can cooperate harmoniously in a gender diverse working environment with an airline that provides fair opportunities for all potential applicants. The airlines promote the fact that they are seeking for any talented and self-motivated pilot eligible for a job regardless of gender. Air New Zealand does not express their preference for female pilots on the websites, but the addition of a female pilot photo sends a powerful message of inclusion. The force of utterance of the photo implies that they strongly support women joining their organisation as pilots. Thus, online recruitment on corporate websites seeks to create a good impression for applicants and induce them to apply for new positions (Borstorff, Marker, & Bennett, 2007).

Bizer et al. (2005) state that the growth of job applicants corresponds to the wide use of online recruitment. In the process of online recruitment, employers receive applicants' resumes by online application and then review these resumes (Borstorff et al., 2007). Job applicants will be interviewed if their aptitudes and qualifications satisfy employers (Borstorff et al., 2007). Compared to a number of traditional recruiting tools, online

recruitment is regarded as fairer by some job applicants as recruiters' learn about applicants based on their resumes rather than on a first impression during a face-to-face meeting.

The internet not only facilitates the recruitment of female pilots, but also has benefits for computer-mediated communication. Online forums provide a platform for pilots and non-pilots to discuss, exchange perceptions, and support each other. People in online forums communicate and seek social support by posting messages based on a topic or question (Vayreda & Antaki, 2009). Without the constraints of geographical distance and time, an online forum is a virtual space in which anonymous participants can freely express their ideas and offer support to each other (Aho, Paavilainen, & Kaunonen, 2012). In this research, it was found that female pilots and their family members not only seek for help on forums, but also exchange ideas, perceptions, and encouragement. All of these online forums involve anonymity in order to protect participants' privacy.

Based on social exchange theory, forum members who support others are likely to benefit from such support (Ye, Feng, & Choi, 2015). In this research, participants in the three forums discussed the importance of fair educational opportunities for both boys and girls and complained about the lack of female pilot preferential policy. What they expected is social support for female pilots, such as collective encouragement from both the public and male colleagues for female pilots to develop their career. They also called for more support for females to enter male-dominated industries in general. Most forum participants in the study had experience in the aviation industry, so they shared similar experiences with other participants and offered each other sympathy. As Aho et al. (2012) point out, peer support provides an opportunity for people to grieve together. According to forum discussions, it is clear that female pilots are confronted with various career problems; however, their organisations, colleagues, and the policies of the organisations offer little support. What they can do on forums is to briefly explain their career problems, seek for social support, and encourage each other by computer-

mediated communication.

It is noteworthy that online forums provide a space for discussants to communicate anonymously. The topic of gender diversity is sensitive in organisational management and what these participants complain about on the forums may be detrimental to the image of the airlines. Thus, anonymous online communication is essential for these forum discussants to protect their privacy (Kling, Lee, Teich, & Frankel, 1999). Many of the forum participants examined in this study had work experience with different airlines; therefore, it was necessary to hide their true identities when sharing information and discussing topics about female pilots in order to protect themselves against potential attackers (Kling et al., 1999; Winkler & Zeadally, 2015). In particular, anonymous online communication has benefits for protecting them from being criticized by their employers.

In this study, forum members freely expressed their real thoughts based on their personal experiences and participated in the interaction with others according to their own will. In order to protect individual autonomy, such behaviours depend on privacy (McCullagh, 2008). Anonymous forum discussion prevents discussants from being recognised, and allows them the freedom to express their feelings, ideas, and perceptions at will (McCullagh, 2008). The anonymity of the discussion that took place in the forums examined in this study allowed participants to describe the reality and issues faced by female pilots in their job hunting and career progression, while also protecting them from being tracked or contacted directly by their employers.

As discussed previously, these anonymous forum participants discussed the lack of affirmative action taken to recruit female pilots and the shortage of early education on career choices for young girls. They regarded these issues as detrimental and the cause of the under-representation of female pilots in the commercial aviation industry. These participants took advantage of online forums as a platform to express their dissatisfaction with recruitment policies and the educational system. The "force of

utterance" in their discussion was that female pilots need both support and affirmative action from governments and airlines. Furthermore, schools should provide basic technical courses for boys as well as girls in order to stimulate their interest in technical and mechanical occupations. The anonymous discussion on the online forums helped participants to express their real ideas and perceptions concerning female pilots' career progression. The "force of utterance" in such forums should be acknowledged by airlines and government and encourage them to promote the education, recruitment, and retention of female pilots.

Chapter Five: Discussion Chapter

The third dimension of CDA considers the social context around the content. As discussed in the literature review, the power dominating the commercial aviation industry is historically male-dominated. This chapter aims to analyse the ideology behind patriarchal power in commercial aviation, and the impact of such power on female pilots. It will also analyse the historical factors underpinning the values of patriarchal power in the commercial aviation industry. Furthermore, based on data analysed in the previous two dimensions of Fairclough's CDA framework, this chapter will draw contrasts between airline efforts to recruit women and the real experiences of female pilots expressed in the forums. With the promotion of gender diversity, efforts have been made to reduce gender discrimination, bias, and segregation in pilot recruitment and selection. It seems that female pilots can enjoy freedom in the sky without interference of regulations, governmental policies, and sexism. However, airlines' recruitment requirements for pilot applicants may still present obstacles for female pilot applicants.

5.1 Discourse-as-social-practice

As mentioned previously in the literature review, patriarchal values, occupational stereotyping and cultural sexism negatively influence the recruitment and retention of female pilots. Unfortunately, data collected from the online forums indicates that such barriers still exists within commercial aviation today, despite airlines' efforts to employ female pilots. The data also shows that some female pilots suffer a lack of recognition of their abilities as well as gender discrimination from male pilots. This shows that gender bias is still rooted in the aviation industry, and this negatively affects women's career choices and progression.

Fortunately, female pilots now have far more job opportunities. In this study, several airlines target women by displaying photos of female pilots on their recruiting websites. It is clear that patriarchal values and cultural sexism still influence the social status of female pilots in the commercial aviation industry. However, the growth in the number of female pilots gradually makes the original image of pilot away from the early images of pilot characterised by heroism and masculinity, shaped by military pilot image in the wartime (Mills, 1998).

In this study, the data indicates that even though such patriarchal values within the commercial aviation industry have been reduced, they are still evident in airlines' online recruitment sites and within the minds of some male pilots. According to data collected from online recruitment sites, pilot applicants with military experience are still preferred by some aviation recruiters.

However, the majority of airlines in this study were found to prefer pilot applicants who have a tertiary education qualification with an aviation university degree. The data collected from airlines' online recruitment pages indicates that employers mainly value applicants' training experience, professional knowledge and skills, and their personal attributes. This reflects the fact that even though patriarchal values and beliefs still influence the culture in the commercial aviation industry, airlines have changed their attitudes towards pilot recruitment and they are willing to recruit eligible pilots with

rich flying experience regardless of their gender. Without the influence of war, heroism and masculinity are no longer emphasised by airlines. Gender diversity has replaced patriarchal culture in commercial pilot recruitment. Even though the deep-rooted patriarchal culture still marginalises female pilots in this male-dominated industry (Mills, 1998), this study has found that the image of a pilot has become neutral with the increasing acceptance and recognition of female pilots by passengers and male pilots. The power of patriarchal values, therefore, have been gradually eliminated with the growing recognition of female pilots.

Recent decades have witnessed an increasing number of women enter into the labour market; however, women employed in non-traditional occupations are still under-represented (T. W. McDonald, Toussaint, & Schweiger, 2004). For example, the under-representation of females in the ICT profession in both the United States and Europe has aroused the concern of the public (Ashcraft & Ashcraft, 2015). The data gathered on pilot recruitment from nine airlines in this study demonstrates that the airlines are promoting (as is required by law in countries such as New Zealand) equal recruitment opportunities amongst both male and female pilots. Nevertheless, the experiences shared on online forum express the real thoughts of female employees, female pilots, and their families about the commercial aviation industry. The following section will compare airlines' expectations in their recruitment and female pilots' experiences as discussed in online forums, in order to understand the obstacles faced by female pilots in their career progression.

5.2 Comparison between data from recruitment websites and online forums

Data collected from airline recruitment websites and online forums represent the different perceptions of employers and employees. Employers want talented, skilful, and responsible pilots who can satisfy their requirements. In contrast to recruitment in the period prior to and after both World War I and World War II, there are now no rules or policies that exclude females from pilot recruitment. Therefore, organisations have

made efforts to reduce gender stereotypes and bias to provide equal and fair job opportunities for both men and women. Again, in comparison with earlier eras, females today have more opportunities to learn knowledge and skills in aviation colleges and the rapid development of the commercial aviation industry has brought many job opportunities for female pilots. However, even though airlines express their desire to attract a greater number of female pilots, there are potential obstacles in the recruitment process that may be challenging for females.

Work-life imbalance is still a problem in female pilots' career progression. Secondly, the lack of affirmative action discourages female pilots in competition with male peers and their career progression. Thirdly, the gap between educational background and airlines' educational requirements demotivate young girls to choose their career in the commercial aviation industry. Fourth high-cost and time-consuming training discourages a proportion of young female students to develop their careers the commercial aviation industry. The following paragraphs discuss these challenges and barriers in detail.

5.2.1 Work-life Imbalance

Frequent flying practice and accumulation of flying hours are an essential part of becoming a pilot and securing and maintaining employment; students and pilots spend thousands of hours on practice and work related flying. However, long-term practice and working hours may interfere with a female pilot's plans to have children. In this study, online forum participants made it clear that pregnancy is one of the factors that cause female pilots to give up their flight dreams. Pregnancy and childbirth necessitates the suspension of pilot training and career progression because females are required to take maternity leave – in consideration of flight safety, pregnant pilots or students are not permitted to fly a plane. Once they have children, an unstable work schedule and the high demand for flight hours may deprive female pilots from family life. Discussion

on the forums points to the fact that family life is the priority for the majority of female pilots, rather than being subject to an unstable work schedule and high-risk flights.

Work-life balance refers to an individual's ability to effectively deal with work and family life with the lowest ratio of role conflict; in other words, the individual feels they can satisfy both their work role and family role (Fayyazi & Aslani, 2015; Forster, Ebrahim, & Ibrahim, 2013). Women's involvement in domestic housework and childcare as well as employment can cause an increase in work-life imbalance (Fayyazi & Aslani, 2015). In their research on women employed by Emirates, Forster et al. (2013) found that Emirate women face work-to-family and family-to-work interferences. That means work and family responsibilities may either disturb their household tasks or their job performance. Gendered assumptions and expectations of women result in dual responsibilities for women in both domestic work and job tasks (Forster et al., 2013). Such imbalance between work and family may give rise to a higher female employee turnover intention (Fayyazi & Aslani, 2015).

In this research, a comparison of airline expectations and the experiences shared on forums shows that many female pilots feel that they cannot meet airline expectations and choose to abandon their career in order to maintain their family life. In general, work-life imbalance is one of the main reasons for employees to quit their jobs (Fayyazi & Aslani, 2015). If an employee invests a great amount of time in the work domain resulting in negligence of family, partnership, and friendship, such work role overload gives rise to a time-based conflict for the employee (Goswami, 2014). Individuals with a heavy workload and an irregular working schedule may experience occupational stress and health problems, resulting in a higher tendency to consider turnover (Goswami, 2014). Thus, the requirements for long-term practice, a high number of flight hours, and flexibility in working hours result in interference in a female pilot's family life. It is difficult for female pilots to adequately fulfil their roles in family life as well as in their jobs. When female pilots are faced with work-life imbalance, the majority choose to give up their job and take care of their families. The consequence of

this is that there is only a small pool of talented female pilots at any one time (Fayyazi & Aslani, 2015).

5.2.2 The lack of affirmative action

None of the airline recruitment sites examined in this research discuss affirmative action in support of female pilots. However, discussion on online forums demonstrated that affirmative action has attracted females to develop their career as a pilot over the last century. Affirmative action efforts have motivated women to enter challenging and male-dominated occupations (Balafoutas & Sutter, 2012). Balafoutas and Sutter (2012) state that affirmative action aims at promoting the representation and rank of women as equal to men's in male-dominated job positions. However, similar to female pilots, women in the science, technology, engineering, and maths fields are under-represented, despite affirmative action to encourage women to develop their careers (Bracha, Cohen, & Conell-Price, 2015).

Affirmative action succeeds in encouraging women to compete with men (Balafoutas & Sutter, 2012; Niederle, Segal, & Vesterlund, 2013). To some extent, affirmative action has increased the value of women in airlines and the commercial aviation industry as a whole. Furthermore, the information shared on online forums implies that affirmative action has also been beneficial by improving the social status and power held by female pilots in airlines. Some of the airlines studied in this research express their support of female pilots by presenting photos of women aviators. However, without governmental, financial, and management support, a large proportion of airlines do not consider affirmative action in their pilot recruitment. The lack of affirmative action may be detrimental for the retention of female pilots.

Information shared on the online forums showed that female pilots endure stress caused by fierce competition with their male colleagues. Female participants in the forums who

worked or had worked as pilots reported that male colleagues often underestimated their abilities and discriminated against them. Balafoutas and Sutter (2012) point out that gender differences result in difference in rank and employment, which can add to the work-life problems and discrimination experienced by women. Based on data collected from the online forums, previous history of affirmative action in support of women taken in the 1980s clearly benefited female pilots and the general social status and employment of women in airlines. This was particularly evident in the United States and Canada following the affirmative action issued by American and Canadian governments in the commercial aviation industry (Airliners.Net, 2013). At that time, it was easier for females than males to be employed as a pilot (Airliners.Net, 2013). Unfortunately, affirmative action directed at women's involvement in previously male-dominated industries, including airlines, has not continued. There is no affirmative action used by nine airlines in this study. A positive attitude and a show of support towards female pilots by airlines and governments may potentially change male attitudes towards working with women. The affirmation of women and their successes can motivate more women than men to take on competitive positions (Niederle et al., 2013).

5.2.3 Airlines' high educational requirements in STEM subjects

Another obstacle for female pilots is the gap between female pilots' educational background and airlines' educational requirements. Airlines require pilots who have achieved high grades and performed well in several subjects including mathematics and science during their secondary education. However, as one male pilot stated on an online forum due to the lack of opportunity in learning knowledge in science, technology, and engineering in high school, his wife found it more difficult than he to acquire a pilot licence (PPRuNe Professional Pilots Rumour Network, 2014). The gap between girls and boys in the study of science, technology, engineering, and mathematics (STEM) results in the under-representation of female pilots in the commercial aviation industry and other STEM-related fields (Harkness & Stallworth,

2013; Ing & Nylund-Gibson, 2013).

Early experience in STEM potentially develops students' interests in and develop a positive attitude towards STEM-related careers (Ing & Nylund-Gibson, 2013). Coursework selection in high school can help students to determine their fields of study at universities; however such fields are limited to females if girls are not encouraged to undertake STEM courses at secondary school (Harkness & Stallworth, 2013). For example, the study of mathematics at secondary school level allows individuals to broaden their choices in many science and technology careers and disciplines of study in tertiary education (Herzig, 2004). However, the ratio of females participating in mathematics study at the tertiary level is lower than that of males, due to the difficulty females face in fitting into the male culture of mathematics (Harkness & Stallworth, 2013).

Pilot applicants are required to have a high score in mathematics in their high school study; however, data collected from online forums shows that the lack of study in STEM courses may reduce job opportunities for females who wish to access pilot positions. According to the findings of Kessels, Heyder, Latsch, and Hannover (2014), girls are generally less confident than boys in STEM study with lower interest and self-efficiency, and some of them are anxious in the learning process. In contrast, boys have highly positive study attitudes towards STEM courses. As a consequence, differences between girls and boys in STEM course participation and learning capabilities results in the over-representation of males and the under-representation of females in STEM-related fields (Kessels et al., 2014). Girls' low performance in STEM courses and the lack of cognition in STEM-related fields finally limits their choices in many male-dominated positions such as engineer or pilot.

5.2.4 Expensive and time consuming training

Data from the airline recruitment sites indicates that airlines value candidates with tertiary educational qualifications from an aviation college or university. Even though data on university tuition fees is not analysed in this research, meeting tertiary educational requirements for pilot trainees requires considerable financial investment in aviation study and to acquire a pilot license. The research conducted by C. L. Depperschmidt (2008) on financial sources for flight costs indicates that the tuition fee for aviation colleges or a university aviation degree is paid mainly by the pilot students' parents and school loans, and only one-fifth of students complete their study supported by scholarships. The experience shared on the online forums shows that the high cost of training and study fees, and the comparatively low incomes earned early in their careers, mean that females are less confident in their choice of a pilot career. Nevertheless, rich aviation knowledge and formal university learning is preferred by airlines in consideration of pilot recruitment and selection (Yadav, 2012).

Gaining aviation qualifications and a commercial pilot license is a costly and time-consuming process (Yadav, 2012). Thus, a large number of students discontinue their study when they realise the high ratio of unemployment, high cost of training, and low wages (Yadav, 2012). These is no doubt that the gap between cost of aviation courses and real income is an issue for pilot students for both male and females. The high turnover of female pilots may start from aviation colleges or universities (Yadav, 2012). Hence, the substantial cost of training and aviation courses force many female pilot students to give up their careers in commercial aviation. The addition of unstable working schedules and work-life imbalance, presents further challenges for the retention of female pilots.

Chapter Six: Conclusion

The study analyses data collected from nine airlines' recruitment websites and three online forums by a three-dimensional theoretical framework of CDA. This chapter concludes findings and main themes in three dimensions of Fairclough's CDA framework, which are illustrated in the following paragraphs. The contributions and limitations of this research are also covered in this chapter. As a study focusing on females in a male-dominated industry, it is planned to raise attention towards the career issues faced by women in aviation.

The aviation industry has witnessed an increase in the social status and advancement of female pilots. Efforts have been made to reduce gender discrimination and bias against female pilots; for example, airlines and aviation colleges today actively recruit both male and female pilot applicants. Female pilot applicants today are freer than women aviators in the pre-and-post World War I and II periods to apply for job positions in various airlines. Compared to previous generations of women aviators, female pilots are more visible to both passengers and male pilots. They have professional aviation knowledge and skills, and strong service awareness. That means they fit airlines' recruitment requirements. Furthermore, they have more power to express their personal perceptions of career progression on online forums. However, female pilots are still under-represented in the commercial aviation industry (Morris, 2015). This study sought to investigate the obstacles for female pilots in their career progression.

The study found that the majority of the nine airlines examined have high requirements for pilot candidates. Analysis relating to the first dimension of Fairclough's CDA framework showed that there are eight job criteria pilot applicants must meet: educational level, citizenship, language level, height and age, license and qualification, medical requirements, flight time, and personal attributes. There is no doubt that being a pilot is a highly technical and skilled job, hence the strong requirements placed on applicants. Although these nine airlines do not directly express their desire for female

pilots on their recruitment pages, two photos posted by two airline clearly seek to attract talented female pilots. Analysis of two online forums revealed strong discussion on female pilots' career progression. The data analysed in the first dimension shows that problems such as work-life imbalance, pregnancy and childcare, a high-risk job, the lack of affirmative action, the lack of early career preparation, occupational stress, and male pilots' discrimination can discourage female pilots in their career progression.

Analysis relating to the second dimension of Fairclough's CDA framework showed that the development of the Internet has helped to broaden the pool of pilot job applicants. Airlines' online recruitment sites provide opportunities for pilot applicants to learn about not only job requirements and criteria, but also organisational culture. Furthermore, recruiters accept resumes from all qualified and talented job applicants regardless of their gender. The online recruitment environment creates space for pilot applicants and recruiters to learn about each other. In addition, the wide application of online discussion forums also provides a platform for female pilots and their families to share their working experience and personal perceptions. Discussion shows that even though female pilots have the same job opportunities as males, they still face hurdles in their job applications and career progression. Participants in these forums seek to encourage young female pilots to progress in this male-dominated area by sharing their previous working experience. The anonymous nature of the online forums allows participants to express their experiences and true thoughts about being a female pilot. Others who are not pilots, but know about the industry, also share their experiences and perceptions on these forums.

Analysis relating to the third dimension of Fairclough's CDA framework revealed the social context for the patriarchal values in the commercial aviation industry. Historically, many commercial pilots had previous military experience in either World War I or World War II, during which time they acquired flying and fighting experience (Mills, 1998; Mitchell et al., 2005). However, military experience is not essential in the current commercial aviation industry, although it is still desired by some airlines when

recruiting pilots. The culture of the military gave rise to an image of heroism and masculinity in the commercial aviation industry in the early years. Nowadays, airlines emphasise pilot applicants' professional knowledge and skills, service attitudes and behaviours towards passengers, and their ability to cooperate with other cockpit crew. Heroism and masculinity are no longer mentioned in airlines' recruitment advertisements, which serves to create an environment more attractive for female applicants. Nevertheless, many of the recruitment messages still use photos of mainly men to attract talented pilot applicants. Therefore, the findings of this study still indicate that the commercial aviation industry remains a fairly masculine environment overall, and such patriarchal power continues to influence the number of female pilots who progress in the aviation industry. Hence, more work is needed to eliminate patriarchal power in airlines and the commercial aviation industry.

Even though female pilots have the same job opportunities as male pilots without restrictions in recruitment, other hurdles such as high job requirements still discourage them in their career progression. Firstly, work-life imbalance forces some female pilots to abandon their career progression in the commercial aviation industry. Many female pilots feel that it is difficult to make choices between an unstable work schedule and their family time. Secondly, the lack of affirmative action decreases female pilots' confidence in their social status in a male-dominated industry. Without the support of affirmative action, female pilots feel it is hard to advance to higher positions compared to their male pilot colleagues. Thirdly, compared to boys, girls have less interest in STEM courses. The lack of basic knowledge in STEM and the lack of awareness of technical and mechanical occupations result in fewer females than males in technical job positions in the commercial aviation industry. Fourthly, the gap between high training costs and low income causes many female pilots to give up advancing their careers. Thus, as long as female pilots are not supported by the government, the commercial aviation industry, and their families, many of them will continue to abandon their pilot careers.

This research focuses on female pilots' social status and their career obstacles in a male-dominated industry. The research contributes to the field of gendered career studies. It aims to arouse individuals' attention to under-representation of females in the male-dominated industry. In terms of the limitations of the study, the data concerning online recruitment was collected from nine airlines, which account for only a minority of the global airlines. The job requirements of pilots displayed on these nine online recruitment sites do not represent the demands of all other airlines. The differences between airlines' scales, service areas, and international and domestic flights decide the various requirements for pilot positions. Furthermore, the discussion on the online forums examined in this research represents only a small number of individuals' perceptions. Most of these online forum members had worked in the commercial aviation industry, and therefore were more familiar with the nature of a pilot job than people working in other industries. The lack of input from "outsiders" and their perceptions of female pilots indicates that the career problems faced by female pilots is a neglected area of interest by the public including passengers.

Nowadays, female pilots are less negatively influenced by heroism and masculinity in the commercial aviation industry. However, patriarchal values and a culture of sexism still influences female pilots in their career progression. In addition to gender discrimination, they are confronted with other obstacles such as work-life imbalance, occupational stress, high training cost, low income, and the lack of organisational and governmental support. All of these hurdles may add to the high ratio of female turnover and under-representation in the male-dominated realm of aviation. This study found that airlines have made great efforts to recruit female pilots by providing females with the same job opportunities as males. However, few airlines understand the real obstacles faced by female pilots in their career progression. If airlines would like to retain talented female pilots, they should strive to help these women to remove or overcome hurdles in their career progression. Additionally, female pilots, pilots' families, and individuals who care about female pilot recruitment and retention are encouraged to express their personal perceptions on online media, which may draw more attention to the issues and

encourage more scholars to conduct further research.

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