An Empirical Examination of the Effects of Professional Credentials on Personal Financial Planning Practitioners’ Income in Hong Kong

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Declaration

I hereby certify that the work embodied in this Dissertation Project is the result of original research and has not been submitted for a higher degree to any other University or Institution.

(Signed) ___________________________

Lam Chung Sing
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<tr>
<td>CFP</td>
<td>Certified Financial Planner</td>
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<tr>
<td>ChFC</td>
<td>Chartered Financial Consultant</td>
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<tr>
<td>CPA</td>
<td>Certified Public Accountant</td>
</tr>
<tr>
<td>FChFP</td>
<td>Fellow Chartered Financial Planner</td>
</tr>
<tr>
<td>FPSB</td>
<td>Financial Planner Standards Board</td>
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<tr>
<td>GFCI</td>
<td>Global Financial Centres Index</td>
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<tr>
<td>HKD</td>
<td>Hong Kong Dollar</td>
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<tr>
<td>HR</td>
<td>Human Resources</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>LUA</td>
<td>Life Underwriters Association of Hong Kong</td>
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<tr>
<td>LUTCF</td>
<td>Life Underwriter Training Council Fellow</td>
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<tr>
<td>MPF</td>
<td>Mandatory Provident Fund</td>
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<td>MPFA</td>
<td>Mandatory Provident Fund Authority</td>
</tr>
<tr>
<td>OCI</td>
<td>Office of the Commissioner of Insurance</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Cooperation and Development</td>
</tr>
<tr>
<td>PFS</td>
<td>Personal Financial Specialist</td>
</tr>
<tr>
<td>PRC</td>
<td>People’s Republic of China</td>
</tr>
<tr>
<td>RFC</td>
<td>Registered Financial Consultant</td>
</tr>
<tr>
<td>RFP</td>
<td>Registered Financial Planner</td>
</tr>
<tr>
<td>SAR</td>
<td>Special Administration Region</td>
</tr>
<tr>
<td>SFC</td>
<td>Securities and Futures Commission</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
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Abstract

The objective of this dissertation is to empirically investigate the effect of professional credentials on personal financial planning practitioner’s income in Hong Kong. Financial planning in Hong Kong is relatively new among financial services, dating back only to the early 2000s. The financial planning industry in Hong Kong is largely unregulated, and professional certification is not required to act as a financial planner. Regardless, many individuals working in the financial planning field choose to undertake one or more professional certifications, such as a CERTIFIED FINANCIAL PLANNER\textsuperscript{CM} (the most common and most highly regarded) and others. There are currently over 66,000 CFP-certified financial planners in Hong Kong, along with an unknown number of other certifications. This study seeks to investigate why individuals undergo certification in the absence of external regulatory requirements. We employ human capital and inequality theories to describe the process of certification as a voluntary investment in knowledge and skill building, and then posit that this would only be justified if there were an expected financial return in the form of higher income. Utilising data from a sample of 5,019 financial planning professionals from a single Hong Kong insurance firm, we examine the relationship between earnings and certification, human capital factors (education and experience), and demographic factors (age and sex). The empirical results indicate that certification, level of education, experience, gender and age do impact on the earnings of financial planners in Hong Kong. The results also reveal that a cluster of certifications do impact on earnings of financial practitioners with four certifications (CFP, LUTCF, FCHCP, and RFC) all of which are highly associated with higher incomes, while only one, the RFP, was not. The RFP was also the least popular certification among financial planners. These findings, taken together, have two implications. First, certification is a path to increased income. Second, certifications do have different market values, thus offering an insight into why individuals choose one form of certification over another. Finally, company policymakers as well as regulators should take cognizance of the rewards associated with certification in order to determine whether it is worthwhile to mandate professional certification of financial planners in the financial services industry in Hong Kong.
Chapter 1  Introduction

1.1 Background of the study

This study examines the impact of professional credentials in the financial planning field on the income of financial planners in Hong Kong. The study focuses on financial planners and financial products salespeople utilize from one of Hong Kong’s largest insurance companies. Around a quarter of these professional salespeople hold one or more financial planning certifications. This study is designed to determine whether the financial certifications achieved by these professionals result in an increase in earnings relative to their non-certified peers. The study is conducted using human capital theory and income inequality theory, and is framed with the assumption that education (in this case signified by certification) will have an effect on income.

1.1.1 The Practice of Financial Planning

The practice of financial planning as it is practiced in modern financial service industries involves identifying the financial needs of a given customer (usually a single person or family) and identifying a path to meeting these needs through various financial products (Gitman, Joehnk, & Billingsley, 2010). In order to produce this plan, the financial planner must take into account various aspects of the client’s needs, such as their risk horizon, their time to retirement, the needs of their children and family, current expenses, short-term and long-term savings goals (such as vacations, saving for a house,
or a child’s education), and current and projected future income and investments (Harrison, 2005). The financial planner then creates a plan, which is a document detailing these requirements and setting out a series of products (such as savings, unit trusts, specific investments, insurance, and other instruments) that can be used to meet the individual or family’s financial goals (Harrison, 2005). The financial planner must not only identify the appropriate instruments for the specific client, but he or she must also identify the tax implications, inheritance issues, and the amount of risk involved in suggested investments and plans (Kerry, Beal, & Olynyk, 2012). The plan should also take into account contingencies, such as the death of the major wage earner, and identify plans that can overcome issues encountered in this area. Additionally, financial planners may be called on to update the prepared plans due to life changes or environmental changes, such as marriage or unexpected volatility in the stock market (Harrison, 2005).

As such, the relationship between the financial planner and the client is ideally a long-term and trust-based relationship.

Although the general idea of financial planning is consistent around the world, the specifics of its practice vary due to differences in the legal and regulatory frameworks that financial planners work under and the financial services industry in a given area. One noticeable aspect of difference is how financial planners are paid. While financial planners in some regions are paid by the client to produce a financial plan, in other regions the financial planner creates the plan for free, as a service designed to sell specific financial services (Kerry, Beal, & Olynyk, 2012). Other differences include the legal and regulatory responsibilities of the financial planner, the potential for requirement of certification, and the laws regarding tax, inheritance, and other issues.
that are the focus of the work (Gitman, Joehnk, & Billingsley, 2010). These differences mean that while a general statement about the practice of financial planning is applicable around the world, the specific rules under which the financial planner operates are not necessarily consistent.

Training for personal financial planning varies. Although in many cases financial planners are specially trained during their tertiary education and certified or licensed for the role, in other cases the financial planner may not be extensively trained (Cull, 2009). This means that the knowledge and skills of the financial planner may vary widely from individual to individual. One way in which many financial planners may access further training and seek to legitimize their professional knowledge is through certification (Rattiner, 2010). Certification by a professional body commonly involves certification through classroom or online courses, or in some cases self-study learning. Participants in the training course then complete certification tests that demonstrate theoretical and practical knowledge of the area and the specific regulations involved in their area of practice (Frumento & Korenman, 2013). Certifications are usually specific to the country of practice, and not all certifications are of the same level of complexity or require the same degree of formal training as others. As such, it is difficult to know the extent of impact of the certification on the effectiveness of a given financial planner in terms of skill or knowledge. However, it is known that certification increases the personal income of financial planners (which is commonly derived from sales to clients and planning preparation fees) (Arman & Shackman, 2012).
1.1.2 The History of Financial Planning as a Profession

The history of financial planning as a professional field is relatively brief, as it only emerged in the United States in the 1960s (Brandon & Welch, 2009). The first globally recognized association for the financial planning profession was the Society for Financial Counselling Ethics, established by Loren Dunton in 1969 (Brandon & Welch, 2009). Over the next 40 years, the profession grew substantially and spread around the world, especially in global financial centres (Harrison, 2005). However, certification in the field did not follow as rapidly. Attempts at establishing the first certification (the Certified Financial Planner or CFP certification) began in the 1970s, but it was not successful until 1995, when this was accepted as a formal certification in the U.S. (There are also a number of competing certifications, such as the Personal Financial Specialist (PFS) and others (Harrison, 2005).

Financial planning as a practice began to spread around the world in the 1970s (Harrison, 2005). However, the way that financial planning is treated varies widely country by country. Some countries such as Malaysia (the first country to require certification) have strict requirements for licensing and registration for a financial planner, while in many other countries, the term ‘financial planner’ is unregulated, and may be used by anyone (Brandon & Welch, 2009). International development of certification in financial planning was even slower than in the United States. The Financial Planning Standards Board (FPSB), which administers the international CFP certification process, was established only in 2004 (FPSB, 2013). (However, there were country-specific certifications in a number of countries, including Singapore, by the
mid-1990s (FPSB, 2013). While other certifications have been internationalised for a longer period of time, the CFP (as the oldest and widely considered the most robust certification) typifies the generally late arrival of certification in the financial planning field on the international scene.

1.1.3 Financial Planning in Hong Kong

Financial planning did not emerge in Hong Kong until 2000, offering only a dozen years of development in the field compared to almost 50 years of established practice in other places (Institute of Financial Planners of Hong Kong, 2008). According to the Institute of Financial Planners of Hong Kong (2008), the adoption of the field was rapid, with over 60,000 practitioners in Hong Kong by 2006. This means that compared to almost 50 years of established practice in other parts of the world, Hong Kong’s financial planning sector is at the beginning stage of development. The CFP was adapted for Hong Kong in 2000 (Financial Planet, 2012). Although there were over 60,000 financial planning industry practitioners in Hong Kong by 2006, the professional credentialing of these financial planners continues to be relatively low (Institute of Financial Planners of Hong Kong, 2008). However, figures for the CFP certification, the only certification with reliable international figures, suggest that Hong Kong is in the top range of the number of certified professionals.

Statistics indicate that the CFP certification is the most common financial planning certification in Hong Kong. The FPSB’s most recent statistics (2009) indicate that there were 3,389 CFP certification holders by 2008. This is a substantial growth rate
from 2005, when only 1,929 CFP holders were known in Hong Kong (annualized growth of about 25% p.a.). A comparison of various countries in the region shows that Hong Kong has more certification holders than Malaysia (2,508 holders), Singapore (671 holders), China (3,414 holders), and Taipei (580 holders) (Financial Planner Standards Board, 2009). Hong Kong has the fourth-largest number of certificated practitioners in the world, following the United States, Canada, Japan, and Australia. There are also statistics available for a number of other common financial planning certifications. There are approximately 600 holders of the Fellow Chartered Financial Practitioner (FChFP), issued by the Life Underwriters Association of Hong Kong (2008). As of 2008, there were approximately 2,600 holders of the Registered Financial Planner (RFP) certification in China, Hong Kong, and Macau (RFPI, 2007). Thus, although not all financial planners in Hong Kong are certified, there are a sufficient number of certificated professionals to allow for a comparison study, and it is clearly an important part of the professional landscape in Hong Kong.

1.2 Problem Statement

In many cases, professional certification or licensing may be required to ensure that the professional is fit to perform the duties required by his or her profession (Fitch, 2007). Certification and continuance of the certificate also require continuing education, ensuring that professionals remain up to date with current practice and principles of their field (Fitch, 2007). Many professions in the financial services field, such as accounting, auditing, and insurance, have legal requirements for licensing and certification as part of
the professional’s right to practice within this area (Fitch, 2007). However, in many other professions, there is no mandatory certification as a requirement to practice, meaning that the field may essentially be open to practitioners who are not aware of best practices or who may not be appropriately trained (Harrison, 2005). In many jurisdictions, financial planning is one of the fields of financial services that are largely unregulated, and there are very few jurisdictions (such as Malaysia) where financial planners are required to be certified (Fitch, 2007).

If certification is not required to legally practice in a given area of financial services, why do practitioners choose to undertake the certification process and continue to maintain certification? One obvious reason that professional certification may be sought in the absence of legal requirements is that it is perceived as a professional investment (Fitch, 2007). That is, the individual sees the certification as a benefit to his or her practice in the field, for reasons such as improved accuracy and effectiveness, or improved perceptions of skill and knowledge from clients and potential clients. In the case of professional practice, an investment in knowledge and certification of this type should translate into improved income as well as improved professional skill (Goetz, Zhu, Hampton, Chatterjee, & Salter, 2011). In the case of financial planning, this has been proved to be empirically true in one study for at least one certification. In their study of financial planners in the United States, where certification and licensing is not generally required, Arman and Shackman (2012) found that the Certified Financial Planner (CFP) certification resulted in significantly higher incomes. However, this is the only study that could be found that directly addressed the question of whether financial planning certification increased income. As such, the question of whether certification
improves the income prospects of financial planners is clearly a relevant question, but it has not been studied in great detail, and so an answer is not immediately apparent.

This research examines one potential reason for certification in Hong Kong – the prospect of increased earnings. Unlike Malaysia, financial planning practitioners in Hong Kong do not have a legal requirement for certification or licensure. This means that it is up to the individual financial planner or his or her employer to determine whether a financial planning certification will be a worthwhile investment. For the practitioner, it is likely that the best signifier of a good investment in professional training would be an increase in income (wages or commissions) as a result of the training. There has been limited research performed on this question. In theory, an investment such as certification and the training associated with it would improve financial planner performance by increasing knowledge and customer needs identifications (Ligon, 2003). An industry study found that there was a 63% increase in income associated with certification, but this study was not properly controlled (Chu, 2003, in Arman & Shackman, 2012). One study did find that the CFP certification was associated with an increase in income (although other certifications were not associated with this increase) (Arman & Shackman, 2012). However, none of this research was conducted in Hong Kong, and the research that was conducted is far from definitive. This means that there is a significant gap in the research that cannot be directly solved from secondary research. Instead, primary quantitative research is required to determine whether the certification has positive effects on the financial planner’s income.

This lack of research on the topic in general (and in Hong Kong in particular) means that there is little information for use either in personal decision-making by
financial planning professionals (who must make a rational calculation as to whether the certification will have positive returns) or for institutional policymakers at banks or government agencies (who must determine whether requiring financial planning certification, as Malaysia has done, is worthwhile). This research is intended to fill that gap by providing empirical information on the effect of certification on financial planner income in Hong Kong. It will also provide pragmatic information for financial planners and others seeking to determine whether financial planning certification is worthwhile. A quantitative analysis of earnings from a single organisation (one of Hong Kong’s largest insurance companies) will offer insight into how (and to what extent) the choice to undergo certification affects income. This analysis will also focus on demographic factors that affect income, in order to understand how professional certification and income are related to each other.

1.3 Research Questions

The research questions have been derived from the problem statement and objectives of the study. The research questions are as follows:

1. Does professional certification of personal financial planning practitioners make a statistically significant difference in incentive-based income, based on a sample of practitioners in Hong Kong?

2. What effects do demographic factors (age and gender) and human capital factors (years of education and experience) have on the financial planning practitioner’s income?
3. What effects do personal choices (such as the decision to undertake certification and the choice of certification) have on financial planning practitioner income?

4. What are the policy implications of the findings of this study for personal financial planning practitioners and institutional policymakers in Hong Kong?

1.4 Objectives of the Study

The objectives of the study include the following:

1. To empirically investigate the effect of professional credentials on the income of personal financial planning practitioners in Hong Kong.

2. To examine the impact of socioeconomic and demographic characteristics on the earning capacity of personal financial planning practitioners in Hong Kong.

3. To examine the impact of certification as a compensatory strategy and the choice of specific certifications on the income of the financial planning practitioner.

4. To make policy recommendations for improving the performance of personal financial planning practitioners in Hong Kong.
1.5 Research Methodology

This research uses quantitative research methodology. The researcher obtained a series of personnel records from a Hong Kong insurance company that detailed earnings and demographic and professional characteristics of 5,346 financial planning professionals (including sales agents and planners). Eliminating the inactive agents led to inclusion of 5,019 sales agents and financial planners, of which 667 held at least one certification and 4,352 held no certifications.

The main statistical techniques included descriptive statistics, correlation, means differences (including t-tests, ANOVA, and chi-square), and regression. Regression models estimated included Education, Business Cases, Age and Age Squared, Experience, and Years Certified as independent variables. The dependent variable was Total Incentive Income, operationalized using the sum of current-year commissions and rollover commissions. Regression was used to determine the effect and predictability of certification and other factors on income, while means difference tests and correlation were used to test differences between categories of individuals and relationships between variables, respectively. The full methodology of the research is outlined in Chapter 4.

1.6 Organisation of the Dissertation

This dissertation includes five more chapters. This is illustrated in Figure 1. Chapter 2 presents an overview of the Hong Kong financial industry and the political
economy of Hong Kong. This chapter describes some of the reasons why the prevalence of financial planning and professional credentials among financial planning practitioners is growing, and provides more evidence for the contribution of this research to the Hong Kong financial planning industry.

Chapter 3 is the Literature Review. The first part of this chapter will discuss human capital theory and other relevant theories that address differences in individual income among groups. Second, the chapter will discuss empirical studies that have addressed the issue of continuing education and certification on earnings outcomes and performance. This section of the research will be used to identify an appropriate model to describe differences in earnings between groups. Chapter 4 is the Research Methodology. This part outlines the empirical model adopted in this research, based on the theoretical framework described in Chapter 3. Research hypotheses, operant definition of variables, research population, sample and sampling strategy, measuring instrument, and data collection methods are described in this chapter.

Chapter 5 presents the empirical findings, using the derived linear regression model to determine whether practitioners who have professional credentials make more money than those who do not. It will also present the findings regarding whether other factors (including age, gender, years of experience, and formal schooling experience) affect the correlation between professional credentials and income. Chapter 6 concludes this research by discussing the research results, implications for policy makers, and suggestions for further study.
Figure 1. Structure of the Dissertation

Chapter 2
Hong Kong Financial Planning and Political Economy
(Background)

Chapter 3
Theoretical and Empirical Relationships Between Certification and Earnings

Chapter 4
Methodology

Chapter 5
Empirical Results and Discussion

Chapter 6
Conclusions, Implications, and Recommendations
Chapter 2  Political Economy and Financial Planning in Hong Kong

2.1 Introduction

Hong Kong’s economy is currently in a state of rapid change following the global financial crisis and on-going economic changes and reforms. The need for reform in the financial services sector was made clear by the financial crisis of 2007-2008 (Paal & Chan, 2008). Although Hong Kong had less exposure to the financial crisis within this sector than many economies, the negative effects of the crisis showed weaknesses in the financial services institutions and structures (Paal & Chan, 2008). Hong Kong has also introduced a number of other economic changes within the past few years, such as a minimum wage, which has increased the amount of oversight and regulation of financial relationships by the government (The Economist, 2010). In this increasingly more complex environment, financial planners are more important to personal investors than ever, since there is a growing number of products, investment rules, and issues that the individual needs to know about to invest effectively (Institute of Financial Planners of Hong Kong, 2011). Economic conditions have further increased the need for financial planners because of a combination of changing regulations and increasing cautiousness about investments (Institute of Financial Planners of Hong Kong, 2011). Thus, understanding the rules of financial planning in Hong Kong requires an extensive understanding of the economic conditions, as well as the history and current status of financial planning and financial planning certification in Hong Kong.
This chapter is intended to provide background information about the Hong Kong economy and describe the use of financial services, including financial planning, in the SAR. The chapter consists of five main sections. In Section 2.2, the general political economy of Hong Kong is discussed, to provide an overview of the external environment in which financial planners operate. This discussion includes detailed information about the political and legal status of Hong Kong (which is relevant for understanding the outcomes of the study in regard to the People’s Republic of China), as well as information about the regulation and structure of the financial services industry in Hong Kong. In Section 2.3, a historical overview of financial planning in Hong Kong is provided, focusing on available information regarding the practice of financial planning. Section 2.4 gives more detailed information about financial consultants in Hong Kong, focusing on their prevalence and overall quality. Section 2.5 discusses the consumer perceptions of financial consultants and credentials in Hong Kong. Finally, Section 2.6 offers some concluding remarks to the chapter.

2.2 Political Economy of Hong Kong

This section discusses the political economy of Hong Kong, including its economic performance, banking sector, and legal and regulatory issues and structure. There are two key aspects to the Hong Kong political economy’s performance. The first issue is the economic performance of the SAR in general, including macroeconomic indicators like GDP and inflation, as well as indicators including personal disposable income and savings rates. The goal of this discussion is to provide an overview of the
extent of economic development and use of financial services within the region. The structure and performance of the banking sector in Hong Kong is also important for understanding this area. A final aspect of this discussion is the political and regulatory environment of Hong Kong, which is important to understand because of its unusual relationship to the People’s Republic of China and the implications for regulation of financial services industries in the region.

2.2.1 Economic Performance of Hong Kong

There are a number of key macroeconomic performance indicators that influence financial institutions in Hong Kong, including the income of financial planners as well as revenue per planner. These factors influence personal investment because they change incentives to invest in various areas, as well as affect disposable income that could be used for investment (Blanchard, 2008). Macroeconomic indicators include GDP per capita, GDP growth, inflation, buying power of the HK dollar as compared to the international dollar (purchasing power parity or $PPP), and interest rates. Additional macroeconomic indicators, including gross and disposable income per capita and savings rates, are used to understand the individual picture of income in this area. One indicator that is not discussed in detail is specific exchange rates (against the dollar or pound) because the HKD operates in a fixed-rate regime. Thus, exchange rates would not be significant in short-term investment decisions (Blanchard, 2008). Statistics for this analysis have been retrieved from the Euromonitor Passport GMID database, which serves as an aggregator of statistics from various sources, including national statistical
databases, World Bank, International Monetary Fund (IMF), and various United Nations (UN) databases. It is notable that statistics for Hong Kong are kept separately from those of the PRC, due to the 1997 lease transfer agreement from Great Britain (GovHK, 2012). As such, these statistics reflect only the conditions in place in Hong Kong, not conditions within the PRC.

2.2.1.1 Macroeconomic Indicators

Macroeconomic indicators give a general state of the health of a given economy based on large-scale factors such as international trade and aggregate supply and demand. These factors can be used to rank a given economy such as Hong Kong in terms of its neighbours, as well as to understand its current position. This section reports on some key macroeconomic indicators of Hong Kong. This includes GDP growth and GDP per capita, inflation, interest rates, and international buying power (a proxy for exchange rates).

The gross domestic product (GDP) of a country or economic region is a measure of the final value of all sales made within the region (McConnell, Brue, & Flynn, 2011). The GDP is commonly calculated as GDP = C + I + G + (E – I), or the sum of consumer spending, business investment, government spending, and export surpluses (McConnell, Brue, & Flynn, 2011). (This calculation excludes intermediate sales and raw materials in order to avoid double counting.) The GDP is not a perfect measure of economic health of a given region, but it is useful in understanding the total economic value produced in some sectors of the economy (McConnell, Brue, & Flynn, 2011). It can also be used for
comparison. Figures 2 and 3 show the real GDP growth and GDP per capita in Hong Kong from 2001 to 2011. Figure 2 shows that the rate of GDP growth has been volatile, though generally positive. The exception was 2009, following the aftermath of the financial crisis, when GDP growth dropped to 2.5%. Similarly, real GDP per capita has continued a gentle upward climb in Hong Kong, growing from HKD26,969 in 2001 to HKD49,354 in 2011. This represents an annualized growth rate of about 8.3% per annum over this period. However, average growth since 2007 has been only 3.26% p.a., indicating a significant slowdown over the period since the economic downturn. This suggests that although real GDP is still growing, it has slowed due to the impact of the financial crisis. This could continue for some time, given the ongoing struggle in the international arena to regain conditions and economic growth and the current difficulties in the financial sector. As such, it should not be assumed that the next several years will be accompanied by a substantial amount of market growth.
Figure 2. Real GDP Growth in Hong Kong, 2001 to 2011

Source: Euromonitor data (2012)

Figure 3. Real GDP per capita in Hong Kong, 2001-2011

Source: Euromonitor data (2012)
One of the main factors that influences investment is the long-term interest rate, which determines the interest rate paid for capital investment (including personal capital investment such as mortgages as well as business investment) (McConnell, Brue, & Flynn, 2011). Inflation, in contrast, quantifies the increased cost of living experienced by individuals within a given market over a period of years (McConnell, Brue, & Flynn, 2011). Inflation rates and interest rates are commonly linked, with high interest rates being seen during periods of higher inflation (Mankiw & Taylor, 2006). Both inflation and investment function as indicators of demand growth, with low inflation and low interest rates suggesting low demand and high availability of funds (Mankiw & Taylor, 2006). However, the long-term interest rate may often be manipulated by the central bank through monetary policy, in order to encourage growth in a slowing economy or slow-down growth in an overheating one (Arnold, 2008).

Figures 4 and 5 show Hong Kong’s inflation and long-term interest rates, while Figure 6 compares them. Figure 4 shows that inflation in Hong Kong is volatile; although it has been at an average of 0.9% p.a. over the past decade, this has been highly variable, ranging from -3.1% (deflation conditions) in 2002 to 5.3% (moderately high inflation) in 2011. In contrast, interest rates have shown a generally steady downward curve, jumping downward rapidly in 2008 from the onset of the financial crisis. They have not come back upwards. This low rate reflects the Hong Kong Monetary Authority’s interest rate adjustment mechanism for managing exchange rates and a high demand for HKD as compared to devalued foreign currencies (Hong Kong Monetary Authority, 2011). Figure 6 shows that despite the general volatility of inflation, inflation
began to rise and interest rates to fall around 2007, suggesting that the financial crises
had a significant impact on interest rates and inflation.

Figure 4. Average Inflation in Hong Kong, 2001 to 2011

Source: Euromonitor data (2012)

Figure 5. Average Long-term interest rates in Hong Kong, 2001 to 2011

Source: Euromonitor data (2012)
The final area for comparison is the buying power of the HKD. Buying power refers to the value of the currency as compared to other currencies (as measured in what can actually be purchased, rather than official exchange rates) (Arnold, 2008). This offers a measure of how much spending power consumers and firms have in a given economy in relation to others. Exchange rates have been fixed at HKD7.8/USD since at least 2001, according to IMF statistics (Euromonitor, 2012). However, this does not mean that international buying power of the HKD has remained constant. The HKD has been gradually falling in international purchasing power as compared to other regions. This fall in the value of the HKD suggests that Hong Kong is not keeping up with general economic growth rates. This is particularly important for financial planning concerns, since one of the major reasons consumers seek out financial planning is to ensure that they can live through retirement comfortably (Cull, 2009; Harrison, 2005;
Gitman, Joehnk, & Billingsley, 2010). Thus, an economy in which many people are losing buying power could be one where demand for more careful financial planning could expand.

2.2.1.2 Additional Macroeconomic Indicators

In addition to the macroeconomic indicators above, there are also other macroeconomic indicators that could have implications for the need for personal financial planners in Hong Kong. Additional macroeconomic indicators reflect directly on the income and spending habits of consumers, and as such reflect the individual economic conditions of people in Hong Kong (Mankiw & Taylor, 2006).

Two key metrics that have been chosen are per capita disposable income (Figure 7) and savings ratio (Figure 8). Figure 7 shows that per capita disposable income (defined as income after taxes and other mandatory contributions) has generally been growing, with a slight dip in 2009 (with recovery in 2010). The average annualized growth in disposable income is just over 10% p.a. for this period. In contrast, the average savings ratio (or the amount saved on average from disposable income) has been falling gradually, with the 2011 figure of 25.5% being 6.7% lower than 2003’s high. This change in savings rates could be due to a number of factors, including increased cost of living and increased consumer desires. However, it does indicate that Hong Kong residents are generally saving less than they previously had. One factor in the reduction of savings could be the introduction of the Mandatory Provident Fund (MPF), a mandatory retirement scheme for all Hong Kong workers (GovHK, 2011).
This plan is managed across multiple private operators, overseen by the MPFA and regulated by the Mandatory Provident Fund Schemes Ordinance (GovHK, 2011). The MPF requires a given level of mandatory contribution from all workers in Hong Kong. While this fund is carefully managed to ensure returns (GovHK, 2011), it does result in a fall in personal savings, which could be a factor in this decrease.

Figure 7. Per capita disposable income in Hong Kong, 2001 to 2011

Source: Euromonitor data (2012)
A third key metric is the number of high net worth individuals (HNWIs) (measured as those with USD1 million or more in wealth) (Chan, 2011). The number of HNWIs is relevant because these consumers have historically been those with the most need for financial planning, in order to optimise their tax burden as well as manage significant amounts of money and assets (Brandon & Welch, 2009). While this group does not represent the full market for financial planning, it is a significant market segment, particularly for regions where financial planning is in early adoption stages (Rattiner, 2010). Historic figures are not available, but Capgemini’s 2011 World Wealth Report suggests that Hong Kong has approximately 101,300 people in this income category, an increase of 33.3% over 2010 (Chan, 2011). Hong Kong is ranked as one of the countries with the highest number of high net worth individuals (HNWIs), behind only the much larger Japan and China in the Asia Pacific region (Capgemini, 2012).
Hong Kong HNWIs are also highly sophisticated in their banking and investment choices; personal insurance adoption is second-highest among all Asian countries (second only to Japan), and Hong Kong investors demand a range of investments including hedge funds, stocks, and more exotic instruments (Capgemini, 2012). However, their use of financial planning services is still not consistent with other countries, demonstrating a relatively slow adoption of the financial planning paradigm by this key market segment (Capgemini, 2012). This is important to understand, since it determines the potential for growth within the financial planning market in Hong Kong.

2.2.2 The Financial Services Sector in Hong Kong

Hong Kong is one of the largest international financial, banking, and monetary centres in the world. According to the 11th Global Financial Centres Index (GFCI), produced in March 2012, Hong Kong ranks third in global financial centre indicators (behind only the UK and New York) (Long Finance, 2012). Hong Kong is also projected to become more significant in the near future (Long Finance, 2012). In terms of industrial involvement, Hong Kong is the world leader in Insurance, and in the top three rankings for all other services (including Asset Management, Banking, Government and Regulatory, Professional Services, and Wealth Management) (Long Finance, 2012). This makes the financial services sector one of the most important sectors in Hong Kong. This is particularly notable in areas such as foreign exchange, where Hong Kong is marked sixth in the world, as well as the stock market (GovHK,
However, all sectors of the Hong Kong financial services market are highly active.

The financial services sector is classified as one of the Four Key Industries for Hong Kong’s economic development (Census and Statistics Department, 2012b). The financial services sector includes banking, insurance, stock brokerage, asset management, and other financial services (Census and Statistics Department, 2012b). The four key industries contributed a total of 58% of GDP in 2010, the most recent figures available (Census and Statistics Department, 2012d). The financial services sector was the second-largest sector after trading and logistics, contributing 15.4% of total GDP (Census and Statistics Department, 2012c). This does represent a downward trend from the past several years, probably due to the impact of the global financial crisis. The financial services sector also employs 219,500 individuals in Hong Kong (around 6.3% of the total Hong Kong employed labour force) (Census and Statistics Department, 2012a).

The contribution of the banking industry totals 9.6% of GDP, with the insurance industry totalling 1.5% of GDP (Census and Statistics Department, 2012b). The finance industry accounts for 15.4% of GDP in total (including non-banking and non-insurance financial services) (Census and Statistics Department, 2012b). In 2010 (the most recent statistics available), the GDP contribution of the finance and services industry was HKD 262,021 million (Census and Statistics Department, 2012c). This represents 15% of the total GDP (Census and Statistics Department, 2012c).
2.2.3 The Political and Legal Environment of Hong Kong

This research focuses on Hong Kong and not on China generally because there are substantial legal and regulatory differences between the two regions, despite the nominal oversight of Hong Kong by the People’s Republic of China. Hong Kong is one of two Special Administrative Regions (SARs) of the People’s Republic of China, following the change in government from Great Britain in 1997 (GovHK, 2012). The current arrangement is scheduled to last 50 years, during which time the SAR is governed under the Hong Kong Basic Law (GovHK, 2012). This law, which is based on British common law, ensures various basic rights that are not addressed in the laws of the PRC (GovHK, 2012). Hong Kong is governed by an elected 60-seat Legislative Council led by the Chief Executive (GovHK, 2012).

In addition to general legal separation from the PRC, Hong Kong also has its own economic and regulatory environment. The official currency of the SAR, the Hong Kong dollar (HKD), is a commonly traded currency (GovHK, 2012). The Hong Kong SAR also is distinct from the PRC in its calculation of GDP and other economic statistics, enabling the separation of economic performance between the two areas (GovHK, 2012). The economic regulation of Hong Kong is exceptionally lightweight, as the SAR is oriented toward encouraging and developing free trade and a global marketplace (GovHK, 2012). This has been particularly effective in the financial services sector, which is one of the four largest industries in the SAR (GovHK, 2012). Hong Kong, which is centrally located in the Asia Pacific region, is also a traditional centre for import and export trade, which has maintained its importance following the
1997 transfer to the PRC for administrative controls (HKTDC, 2012). The SAR is driven by economic regulation and development that is not directly connected to the central government of the PRC, enabling a strong commitment to these free market and trade-based ideals (GovHK, 2012). Thus, a study of the Hong Kong economy as distinctive from the PRC is justified, given that it does not share a common legal or political framework.

2.2.4 The Hong Kong Financial Services Industry

The Hong Kong financial services industry is one of the key industries in Hong Kong, and as such receives substantial attention from the government. However, most of this attention is based not on extensive regulation, but rather on providing as much freedom as possible for market activity. A statement of regulatory intent from the Government of the Hong Kong SAR states:

“The Government of the Hong Kong Special Administrative Region (HKSAR) abides by the principle of keeping intervention into the way in which the market operates to a minimum and has endeavoured to provide a favourable environment in which business operates. Its policy of low and simple taxation allows maximum room for business initiatives and innovation. There is a strong emphasis on the rule of law and fair market. There are no barriers of access to the market by foreign businesses and no restrictions on capital flows into and out of Hong Kong. There are also no exchange controls”. (GovHK, 2011)

This statement is largely reflected in the regulatory approach to financial services found within the SAR. Primary regulators and their areas of regulatory interest include (GovHK, 2011):
• The Hong Kong Monetary Authority (HKMA): tasked with central banking responsibilities, including currency stability and oversight of the banking system.

• The Securities and Futures Commission (SFC): holding responsibility for oversight of financial markets and securities issues.

• The Office of the Commissioner of Insurance (OCI): holding responsibility for oversight of insurance providers and firms and insurance intermediaries within Hong Kong.

• The Mandatory Provident Fund Schemes Authority (MPFA): oversees the operation of Hong Kong’s mandatory retirement savings plan, the Mandatory Provident Fund.

The Hong Kong financial services sector includes a total of 262 licensed financial entities in the banking sector, including licensed banks and other depository companies as well as 67 foreign banks (GovHK, 2011). Additionally, there are 164 authorized insurance companies (including 86 Hong Kong companies and 78 foreign companies) (GovHK, 2011). The size of the insurance market in 2010 was approximately $205 billion (GovHK, 2011). Insurance agents themselves are not regulated in Hong Kong. However, insurance companies are expected to be “well established, financially sound, and well managed (GovHK, 2011)” prior to entry into the Hong Kong market. The OCI determines whether a given insurance company can enter the market (GovHK, 2011). Overall, however, the insurance market (the sector this research focuses on) does not have an extensive body of regulatory oversight with which it must comply.
2.3 Financial Planning in Hong Kong

While the financial services sector in Hong Kong is well established, the financial planning profession is not as consistent. In this section, a historical overview of the financial planning sector is offered and the various aspects of the sector are examined. The goal of the section is to describe how the financial planning sector emerged and what role it plays in the modern financial services sector in Hong Kong.

2.3.1 History and Earnings Overview

Personal financial planning did not enter the Hong Kong market until much later than many other countries, with most banks and investment houses organising financial planning services only around 2002 (Institute of Financial Planners of Hong Kong, 2008). The first certification available specifically for Hong Kong Practitioners was the CFP, which was instituted in 2000-2001 based on a country-specific implementation (Financial Planet, 2012). Thus, even though Hong Kong had a late entry to financial planning, the introduction of practitioner credentials was done at nearly the same time. This is unusual compared to many markets, where financial planning as a profession was in place for some time before practitioner credentials became common (FPSB, 2013).

There is no information on the effect of practitioner credentials on personal financial planning in Hong Kong, nor are there any hard statistics that can be found regarding potential incomes of financial planners. However, the charging structure of
the market does offer some potential insight into earnings. There are two main mechanisms for charging for financial planning. In the United States and Australia, financial planning is structured as a professional service, which costs around US$5,000 for a financial plan for a family (Hong Kong Baptist University, 2007). In the United Kingdom as well as in Hong Kong, income of financial planners comes from commission on the products sold rather than charging for the plan, in addition to a basic salary or nominal charge for the service (Hong Kong Baptist University, 2007). This suggests that the Hong Kong personal financial planner’s income is highly dependent on the ability to sell products and receive commissions from them.

2.3.2 Financial Planning Industry Structure

In Hong Kong, investment and personal financial planning services are offered by unit trusts and mutual funds (Hong Kong Securities and Futures Commission, 2012). According to the Hong Kong Securities and Futures Commission (2012), there are a total of 1,863 authorized unit trusts and mutual funds of various types registered in Hong Kong. This includes 330 bond funds, 995 equity funds, 78 diversified funds, 40 money market funds, 82 funds of funds, 111 index funds, 22 guaranteed funds, 6 hedge funds, and 17 other specialized funds, as well as 182 umbrella structures (Securities and Futures Commission, 2012). The net asset value of total assets under management was US $1,013,873 million as of December 2011 (Securities and Futures Commission, 2012). These instruments generally trade on the Hong Kong Stock Exchange, which is
the seventh largest stock exchange in the world by market capitalisation, as well as the third largest in Asia (World Federation of Exchanges, 2012).

Despite the relatively low level of regulation in Hong Kong’s financial products industry (of which the financial planning sector is one part), there may be changes in this industry coming. In particular, the Securities and Futures Commission has noted a significant uptake in insider dealing, market manipulation, and other violations of corporate governance rules associated with these products (Steward, 2012). As a result of this increase in reporting and criminal activity, it is possible that the financial services industry, including financial planning, may soon come under increased regulatory pressure (Steward, 2012).

2.3.3 Prevalence and Quality of Financial Consultants

In Hong Kong, financial planning is a new booming industry, which has a history of only twelve years. According to an industry survey conducted in 2006 (the most recent available), there were over 60,000 practitioners in the financial planning industry (Institute of Financial Planners of Hong Kong, 2008). There are relatively few credentialed financial planners compared to the number of people working in the financial planning field, although there may be more than in many other countries. One of the most common credentials in the world is the Certified Financial Planner (CFP). There were 3,389 certified financial planners in Hong Kong with the CFP certification by 2008 (FPSB, 2009). Although this is not as many as the United States, Hong Kong ranks fifth in the world in this certification (after the US, Canada, Australia,
and Japan). Banks employ 53% of certified financial planning professionals in Hong Kong, while 22% work in insurance companies and the remainder in asset management companies or as independent financial advisors (Institute of Financial Planners of Hong Kong, 2008).

The Hong Kong Securities and Futures Commission undertook an investigation of the quality of licensed investment advisors in 2004 and 2006 (Securities and Futures Commission, 2005; Securities and Futures Commission, 2007). These reports found that the overall performance of this sector was unsatisfactory. It was found that consultants did not have sufficient client knowledge (including clients’ investment objectives, investment experience, or financial status). Some of the license holders did not understand the nature and structure of products (including their risk and return profiles) before offering them to investors. Other license holders did not provide reasons to justify investment advice, including offering high-risk funds to people with low risk tolerances (such as the retired). An example of this type of failure was the introduction of a collective investment scheme deemed to be suitable only for experienced investors with high-risk tolerances to a retired client who was intending to attain a stable retirement income. However, a recent skills assessment of over 3,000 members from the Institute of Financial Planners of Hong Kong (2011) indicates that CFP professionals had generally higher performances, including consistently identifying risk tolerance and matching risk tolerance to investment strategies, as well as taking a cautious approach to retirement planning. This suggests (though it does not conclusively prove) that CFP professionals in Hong Kong have higher performance capabilities than the general population of uncertified financial providers.
2.3.4 Consumer Views on Financial Consultants and Credentials

There is little information about the consumer perception of financial consultants and credentials in Hong Kong, but there is some evidence of frequency of use. Although there are a wide range of investment and insurance products available to Hong Kong residents, financial planning services are still not widely used. According to a joint report from the Hong Kong Baptist University and the Society of Registered and Financial Planners (2007), only 19% of respondents had used financial planning services in the previous two years. This is significantly lower than the penetration rate from similar studies conducted in the US and UK (Clarke, 2000). Increasing wealth and investment variety, increasing availability of insurance products, increasing use of financial planning services, and increasing capital flows from Mainland China are likely to increase the complexity of financial planning in Hong Kong (Hong Kong Baptist University and the Society of Registered and Financial Planners Ltd, 2007).

The Hong Kong Baptist University (2006, 2007) has undertaken a series of studies about investor concerns in choosing investment consultants. This study compared investor concerns about bank staff, SFC license holders at financial advisory agencies or fund houses, and insurance agents and brokers. Seventy-four per cent of respondents indicated that they focus on the consultant’s products and market knowledge. The second and the third priorities were the consultant’s willingness to understand their needs (68%) and whether consultants can explain clearly the details of the products they are introducing (62%) (Hong Kong Baptist University, 2006, 2007).
However, while this study identified concerns regarding planners, it did not identify overall satisfaction with the existing planners.

### 2.4 Concluding Remarks

This chapter has discussed the current economic conditions and banking structure in Hong Kong, as well as the role of financial planners and the financial planning industry within this environment. The economic conditions that Hong Kong is currently operating under, while not as bad as in some economies, have taken a toll in terms of reduced GDP and per capita income as well as in rising inflation and falling international purchasing power. Economic conditions also suggest that Hong Kong’s general savings rate is falling (possibly due to the implementation of the MPF in 2000). However, Hong Kong does have an exceptionally high number of wealthy individuals, suggesting a strong market for personal financial planning. This is borne out by the findings of the chapter, which suggest some 60,000 financial planners and practitioners working in banks and insurance firms. However, certification rates are not very high, quality is mixed, and there is no evidence of whether financial services certification improves consumer perceptions. In the next chapter, a complete literature review is presented that discusses the theoretical relationships between financial planner certifications and earnings, as well as the empirical evidence that relates to this topic. This information is used to build a formal methodology that can test the relationships within the data set.
Chapter 3  Literature Review

3.1 Introduction

The relationship between financial planning and earnings has not been widely studied within the literature. However, this is a question of obvious importance to financial planners, as well as to those who use their services. The increasing importance of financial planning in a complex world of personal financial choices, especially for higher-income earners, suggests that understanding the income determinants of financial planners is particularly important—not only for practitioners in the field, but for regulators and policymakers tasked with understanding the field and its income structure and determinants. However, there is little existing research that directly applies to these questions. As such, a general framework of income determinants has been selected, especially focusing on human capital theory as the base of the theoretical framework.

In this chapter, a general overview of the research on income determinants is presented, along with a discussion of the limited available research on financial planning and income. In Section 3.2, theoretical considerations of income and financial planning are presented, including human capital theory (the main determinant) as well as auxiliary factors, such as lifecycle theory (age) and educational inequality theory (gender). In Section 3.3, empirical research regarding this topic, including in collateral fields such as financial management, is discussed. Section 3.4 addresses the limitations of the previous research and outlines how the current research is intended to fill these gaps. Finally, Section 3.5 offers some concluding remarks for the chapter.
3.2 Financial Planning and Earnings: Theoretical Considerations

There are many different theories that discuss income and earnings and how they are related to education and other aspects of personal development. In this section, the main theories used in this study are discussed, and the relevance of each of these theories for the current research is examined. The main theory that this research explores is human capital theory, a branch of economic theory that examines the role of human development in the economic efficiency and earnings potentials of individuals. Additional theories explored that can be used to understand earnings potential include ability theory, educational inequality theory, and lifecycle theory. Stochastic theory is also discussed, although this is considered to be inconsistent with known facts about earnings and their relationship to the person. This will allow for further study in the next section, where further empirical applications of these theories are discussed.

3.2.1 Human Capital Theory

The key theory used within this research to explain the effects of professional certification on earnings is human capital theory. Human capital theory was primarily developed by Gary Becker, and is used to explain the differences in income and income potential available to individuals and societies based on differences in education and other development factors. This section defines human capital and discusses the role of human capital theory in the development of the research model.
3.2.1.1 Definition and measurement of human capital

There is no single definition of human capital. Human capital theory has been used with a number of different goals, and as such, a number of definitions have arisen. A human resources-oriented definition states that human capital is “collective knowledge, skills, abilities, and other characteristics…of an organization’s employees and managers that create a capacity (potential that can be realized) for competitive advantage” (Lengnick-Hall & Lengnick-Hall, 2003, p. 45). In classical human capital theory literature, human capital is defined as “any one individual’s physical, intellectual, emotional, and spiritual capacities” (Porritt, 2007, p. 163). Human capital can also be understood as the stock of skills and resources used for the activities that humans undertake, including work, leisure, and other life activities (Porritt, 2007). This implies that economic productivity can be improved by improving human capital.

While human capital is a concept that can be grasped intuitively, there are substantial problems in consistently measuring and monitoring it. Measuring human capital involves identifying specific linkages between human capital characteristics and their statistical relationship to measures of performance (Baron & Armstrong, 2007). This type of measurement can be oriented to demographic measurement, or it can be based on characteristics such as education and experience (Ingham, 2012). Human capital measurement can also be oriented toward the organisation, for example by measuring the rate of turnover (Baron & Armstrong, 2007). However, in all cases this data must be first collected and then transformed into information that reflects on the management of human capital individually or within the organisation (Ingham, 2012).
this research, some of the measures of human capital (including years of education and experience) have been taken into account, as have demographic factors including age and gender. However, it is not certain that these measures are sufficient to reflect the development of human capital in the organisation.

There are three commonly used measures of human capital that can be found within the literature, according to an overview of research in this area (Le, Gibson, & Oxley, 2003). However, none of them are without difficulties. One of these measures is the cost of providing human capital, which is commonly operationalized as the social and private cost of education, training, and other aspects of human capital (such as nutritional support programs) (Le, Gibson, & Oxley, 2003). This approach is useful for understanding the total investment in income, but it is not sufficient to describe the individual impact of human capital development. A second measure is that of income, in which it is presumed that increased income is indicative of increased human capital (Ingham, 2012). Commonly, this measures human capital as an increase in income based on educational attainment (Ingham, 2012). However, this model is particularly problematic, in that it confuses the causes and effects of human capital development; furthermore, in the case of this study, the goal is to determine the effects on income directly. A third measurement approach uses years of education or attainment of other forms of education as a proxy for the attainment of human capital (Becker, 1993). This is the most relevant representation for the current study, since it will enable the examination of income as a function of human capital. However, this does not serve as a perfect indicator either, since it does not allow for identification of non-education based human capital development (Becker, 1993).
3.2.1.2 The origins of human capital theory

The economic model of human capital is based on insights of the classical economist Adam Smith, who offered a primitive definition of human capital that is consistent with modern theories:

“Fourthly, of the acquired and useful abilities of all the inhabitants or members of the society. The acquisition of such talents, by the maintenance of the acquirer during his education, study, or apprenticeship, always costs a real expense, which is a capital fixed and realized, as it were, in his person. Those talents, as they make a part of his fortune, so do they likewise that of the society to which he belongs. The improved dexterity of a workman may be considered in the same light as a machine or instrument of trade which facilitates and abridges labour, and which, though it costs a certain expense, repays that expense with a profit” (Smith, 2009, p. 166).

Human capital theory is a branch of modern economic theory pioneered by Gary Becker (1964). In *Human Capital*, Becker (1964) outlined a theoretical model of human capital and its effect on economic performance at the macroeconomic level. Human capital, according to Becker (1964), is the primary determinant of economic outcomes, including macroeconomic outcomes and microeconomic outcomes (such as income). Thus, the development of human capital on the societal and individual level is the key to enhancing economic expansion and success, as measured in various ways (Becker, 1964; Becker, 1993). This work and following research also identified human capital’s role in improving economic outcomes and individual incomes as being associated with intellectual capital (education) rather than any of the other human capital factors (Becker, 1964; Becker, 1967; Becker, 1993. However, this concept has been expanded significantly by other authors and in other directions, and the majority of modern human
3.2.1.3 Investment in people

Investment in people is generally the approach of modern human capital theory discussions when the goal is to increase economic benefits (Ingham, 2012). Human capital is also extensible into other forms of capital, such as social capital (benefits derived from the relationships between people and groups) and organisational capital (benefits to the organisation from the social and human capital of its members) (Baron & Armstrong, 2007). Human capital investments may take the form of investments in basic health and nutrition, particularly in developing economies (Barrett & Maxwell, 2005). These investments provide a foundational level of human capital development, as well as providing protection for the most vulnerable members of a society (Barrett & Maxwell, 2005). However, the majority of human capital research focuses on education as a means of developing human capital. In part, this is because education is believed to contribute to health and nutritional improvements through learning and network effects, allowing individuals to improve their living conditions by providing skills and knowledge (Todaro & Smith, 2008). However, a more important reason in terms of empirical analysis is that education is readily operationalized using measurements like educational expenditure per capita, years of expected education, literacy rates, years of achieved education, or other collected data (McMahon, 2002). This can include
certification or degree attainment, enabling analysis of education on income achievement at the microeconomic level (McMahon, 2002).

3.2.1.4 The importance of education

Education is very important in the human capital literature, and it is modelled and analysed in several different ways. Education can be classified as formal (that which occurs within the formal school environment) or informal (which occurs at home or at work) (Psacharopoulos & Patrinos, 2004). The most commonly analysed form of education is formal education, which is classified into the primary, secondary, and higher education levels (McMahon, 2002). Although the returns from informal education can be more difficult to quantify, both types of education are known to improve income (Psacharopoulos & Patrinos, 2004). Another form of classification of education is classifications related to job knowledge acquisition (Ryan, 1998). Common forms of job knowledge acquisition include on-the-job training, apprenticeships (which include theoretical and practical learning over a period of time), and specialised vocational education at secondary and higher levels (Ryan, 1998).

The contributions to earnings vary depending on the type of education. On-the-job training is commonly associated with low-wage jobs and does not provide the same wage benefits as education does (Cuesta & Salverda, 2009). However, even on-the-job training does provide some benefit, especially for moving out of the lowest-wage jobs (Cuesta & Salverda, 2009). Evidence also suggests that apprenticeships may offer improved income benefits over vocational training, although this too varies depending
on the economy (Ryan, 1998). However, formal education is perceived to have a much stronger effect on earnings (Baron & Armstrong, 2007). Generally, individuals have a number of different types of education, including informal, formal, and job-related education, to draw from, which can make isolation of specific influences difficult (Becker, 1993).

One of the significant factors about voluntary certification is that it is usually undertaken as a post-formal educational process, when the individual is already in the workplace or hoping to enter the workplace (Fitch, 2007). This strongly suggests that certification represents an informal educational investment for human capital that is undertaken voluntarily by the individual. In fact, the voluntary undertaking of professional certifications, along with formal education past the secondary level, is commonly considered to be one of the main choice-based components of human capital (Han, Lin, & Chen, 2008). It is also one of the most readily measured factors in an adult population, and can provide substantial information about the extent of human capital attainable by any given person (Becker, 1993). Thus, professional certification is clearly important for human capital development, but its precise role is contested within the research.

The role that is found for certification in the human capital literature for certification is varied. The study by Davidsson and Honig (2003) found that certification by entrepreneurs is considered to be useful up to a point due to the ability to learn new skills or gain entry to a limited field. It can be argued that individuals who invested too highly in certification could become risk-averse and locked into a single area of practice due to the high cost (both intellectual and financial) of the certification process.
(Davidsson & Honig, 2003). However, an increase in knowledge is unlikely to be the only reason for the voluntary pursuit of professional certification. One discussion from the nursing field suggests that professional certification can serve as a form of personal marketing, by providing a concise summary of what the individual knows and what skills they hold (Woods, 2002). The role of professional certification is also seen as drawing professionals to a given area, effectively enabling the organisation to hire the most effective workers for their purposes by offering a specific set of information (Woods, 2002). In the information technology field, professional certification is often seen as a career advancement technique, offering an opportunity to learn new skills and expand existing skill sets (Paré & Tremblay, 2007). In this environment, the use of professional certification is often encouraged by the organisation as a means of improving organisational commitment and increasing the human capital availability for the organisation and individual (Paré & Tremblay, 2007). These studies suggest that the role of certification in gaining skills is important, but that certifications also act as a means of signalling that an individual holds these skills. This could be highly important, particularly for individuals with lower levels of formal education, since this would enable them to demonstrate specific skill levels and prerequisites for various positions.

3.2.1.5 Models of human capital theory

Mincer (1968, 1970, 1974) offers a commonly used empirical conceptualisation of human capital theory that describes the relationship between education and performance. This model uses earnings increases to operationalize increases in human
capital, with education operationalized as the length of training (Mincer, 1958; Mincer, 1970; Mincer, 1976). This model specifies a linear relationship, including average earnings in an occupation, basic earnings level, formal schooling, and experience, as well as hours spent working. However, this model does not take into account the degree of post-education work experience, which is also a factor in earnings according to most definitions of human capital theory (Lengnick-Hall & Lengnick-Hall, 2003; Porritt, 2007). This is particularly true in developing economies, where a significant portion of the human capital involved in the economy is generated by experience outside the formal economy (Dustmann, Fadlon, & Weiss, 2011). This implies that it is important to consider the length of experience, since this is how people build skills and understand the required resources and tasks (Dustmann, Fadlon, & Weiss, 2011). This model is also inconsistent with the information that is available within the current data set. As such, this particular model will not be used in the research, but it does provide a useful start to understanding what factors need to be considered.

3.2.1.6 Human capital in the financial services industry

There have been a number of studies on human capital in the financial services industry, though most of these studies have not directly focused on the role of certification and its effect on income. One study examined the antecedents and consequences of human capital in the financial services organisation (Bontis & Serenko, 2009). They found that factors in human capital in financial services included knowledge as well as organisational commitment and length of service (associated with
organisational commitment) (Bontis & Serenko, 2009). They also found that expansion of human capital in the organisation led to an increase in the efficiency of the organisation, because workers with higher human capital behaved more effectively on the whole (Bontis & Serenko, 2009). Training and development activities, managerial leadership and feedback, and employee satisfaction are all factors in developing human capital within the organisation (Bontis & Serenko, 2009; Ingham, 2012). A study in the auditing field found a positive relationship between professional certification and performance, with this study suggesting that encouraging employees to improve their skills through professional certification led to improvements in auditor quality (Cheng, Liu, & Chien, 2009). This study further emphasises the linkage between human capital quality (and the use of professional certification as a means of developing it) and the efficiency and effectiveness of the financial services organization (Cheng, Liu, & Chien, 2009). However, what this study does not address, and what few other studies address, is the direct role of human capital in the financial services industry in terms of the individual income of professionals in a given field. As such, this is an area that demands further research.

3.2.2 Ability Theory

The Ability Theory is the oldest theory that attempts to explain income distribution (Sahota, 1978). This theory presupposes normal distribution of ability (including mental and physical ability) among the population, and then suggests that income distribution acts as a function of ability and productivity (Sahota, 1978). This
model offers the benefit of simplicity, but even Sahota (1978) felt it to be too simplistic. Pareto (1987) conclusively disproved the Ability Theory by demonstrating that income follows a lognormal distribution rather than a normal distribution, disproving a fundamental assumption of the model (Akintunde, 2011).

Today, the Ability Theory as described by Sahota (1978) is not considered widely applicable (Akintunde, 2011). There are few modern studies that incorporate it directly. However, this does not mean that ability differences do not affect income. Of far more interest in the current research is the development of models that describe factors involved in differences in ability outcomes. One theory is that variance is caused by inherited assets, which create non-competing groups based on variances in ability (Pigou, 1960). Another author suggests that differences in schooling experience and scholastic ability are formative in adult ability differences (Blinder, 1974). Human capital theory holds that investment in human capital results in differences in ability (Porritt, 2007). Ability is also represented as one of the components of educational inequality (Seguino, 2011). As such, the Ability Theory is not directly discussed in this research, but it is integrated into the model through the use of other theories.

3.2.3 Educational Inequality Theory

Educational inequality has been identified as a major contributory factor in income differences. Studies of educational inequality based on race began in the United States in the 1960s, after the experience of some decades of segregated education (Attewell & Newman, 2010). Researchers generally found a relationship between gaps
in access to education from the primary level upward and adult earnings potential (Attewell & Newman, 2010). These gaps vary depending on the social environment, but are not unique to the United States. Some common types of gaps include those based on gender, ethnic or racial group membership, and family socioeconomic status (Attewell & Newman, 2010). This theory is politically unpopular because many governments hold to the assumption of equal opportunities offered to all citizens, regardless of the reality of the situation (Attewell & Newman, 2010). Furthermore, it can be difficult to quantify the occurrence or effects of educational inequalities in an adult population (McMahon, 2002). However, this does not mean that the theory is not useful in understanding differences in income attainment between those that may appear identical in a records database. The majority of current research into income inequality is based on differences in gender and familial income inequality.

Modern educational studies note that there are different ways to measure inequality (Ferreira & Gignoux, 2011). Equality of achievement refers to the ability of individuals to achieve the same results (such as the same income or bonus), while equality of opportunity refers to the lack of structural barriers preventing those achievements (Ferreira & Gignoux, 2011). Equality of opportunity does not necessarily actually indicate educational equality, since formal institutional barriers to education such as exclusion of women or other groups are relatively rare (Ferreira & Gignoux, 2011). This access is commonly used to defend equality claims by governments due to the lack of formal barriers to participation (Attewell & Newman, 2010). Equality of achievement may be influenced by factors such as personal prejudice or social expectations that women should leave the workplace to care for children or that people
of certain ethnicities are only suited to certain kinds of tasks, as well as differences in educational funding and school availability (Ferreira & Gignoux, 2011). Furthermore, it is not possible to truly measure equality of educational opportunity. These results are measurable only by outcomes (Ferreira & Gignoux, 2011). As such, even though interested groups prefer to focus on equality of opportunity, in this case only opportunity of achievement is relevant. One study based on opportunity of achievement in India found that there was a lower bound of 11% to 17% (with younger workers having higher rates of inequality) based on family socioeconomic inequality (Singh, 2010). This clearly indicates that inequality of opportunity in education has a serious effect on wage expectations.

Although educational inequality and income inequality are associated with each other, it is not a straightforward cause and effect relationship (Mayer, 2010). As Mayer (2010) points out, educational inequality in childhood is a predictor of income inequality as an adult. However, the reverse is also true, with family income inequality predicting educational inequality. Thus, an increase in income inequality leads to an increase in educational inequality, subsequently leading to a spiralling increase in income inequality in the subsequent generation (Mayer, 2010). Mayer (2010) does note that there are many other factors involved in income inequality. He also notes that government programs to reduce the effects of income inequality, like school funding distribution, nutritional supports, and enhanced educational support programs for low socioeconomic status students, can reduce the effects of familial income inequality on educational outcome inequality.
Information on childhood socioeconomic status and ethnic group membership is not available in the data set used in this research. As such, this theory will be integrated into the model based only on gender, which is the only income inequality factor that can readily be isolated from the data.

3.2.4 Life Cycle Theory

Life cycle theory posits that age is the main factor in determining income, based on three stages of the personal life cycle (Haveman, Bershadker, & Schwabish, 2003). In the first stage (entry-level), income is determined only by education, while in the second stage imputed labour compensation is also included (Haveman, Bershadker, & Schwabish, 2003). In the third stage, income is imputed compensation for non-market activities and market activities (labour). A number of classical authors have used this model as a means of explaining the relationship of age and income based on increases in skill and experience, as well as increases in savings accumulation (Blinder, 1974; Bronfenbrenner, 1971; Kuznets, 1953; Polanyi & Wood, 1975). However, this relationship becomes more complex near retirement age, where empirical evidence shows that income begins to fall (Atkinson, 1983; Haveman, Bershadker, & Schwabish, 2003). This results in an inverted parabolic relationship between age and income. This theory is possible to model with the existing data and also has been widely accepted within the existing research. Lifecycle theory is rarely discussed explicitly within the research, but a large number of empirical studies have supported it. These empirical studies are discussed in the Section 3.3.
3.2.5 Stochastic Theory

The Stochastic theory is based on simple probability and random chance (Cowell & Champernowne, 2010). This theory states that random forces determine income distribution. The offspring of a wealthy family can become poor, while someone born poor can become rich at random (Cowell & Champernowne, 2010). Mathematical functions of stochastic theory, including those posited by theorists such as McAlister, Kapteyn, and Edgeworth, have been routinely tested in varying areas of research into random occurrence, including income inequality (Cowell & Champernowne, 2010). One influential model of stochastic theory is Gibrat’s law of proportionate effect, posed by Robert Gibrat (1931) in reference to the relationship between the growth of the firm and its starting size. This model used a Markov chain model to describe the relationship between income and ability and skill, which diminishes over time (Gibrat, 1931). Gibrat’s law has been used in modelling income inequalities for some time, although it was initially posed based on the size of the firm (Cowell & Champernowne, 2010). However, it is not intuitively obvious and does not necessarily fit an empirical model of the world. Shorrocks (1976) was one of the first to reject the stochastic model of earnings, making the observation that earnings do not depend fully on chance and probability. Instead, factors like age, sex, industry, and other factors are relevant to earnings and earnings potential (Shorrocks, 1976). Thus, even though stochastic variation is relatively easy to model, it is not directly included in the model for this research because of the unsatisfactory nature of the explanation of income variation as
sheer random chance. However, the stochastic influences are implicitly included in the error term of the linear regression (Healey, 2011).

3.3  Financial Planning and Earnings: Empirical Research

There are a number of empirical studies that address the relationship between various factors and income. These studies demonstrate a variety of views on the relationship between income and other factors. Some of these empirical studies have provided better support than others, however. There are also only a few studies that are focused on financial planners or the finance industry in general. This section discusses empirical studies using the theories presented above. It also discusses research within the financial services industry that could prove relevant to the current research.

3.3.1  Human capital studies

There are many studies that examine the contribution of education to human capital development and income. Early studies of human capital development emphasised the empirical and theoretical role of human capital development in the production of income in a variety of situations and demographic groups (Becker, 1967; Griliches, 1972; Griliches & Mason, 1972). These foundational studies are now outdated in empirical applications due to changes in industry structure and wages, but they still serve as an important theoretical result that has set the stage for later studies. Human capital studies can generally be classified into those that consider education and
those that consider experience. In this case, the researcher has added a third category (certification) to reflect the specific indicator of human capital that is of interest to this study.

### 3.3.1.1 Education

A growing number of empirical studies have taken several different approaches to operationalizing education. Schulz (1965) focused on formal schooling only and examined income differences based on differences in educational level. He found that college graduates had higher wages than high school graduates, especially when taking into account the effects of accumulated experience. Becker’s (1964) theoretical and empirical work explained that the contribution of education was a function of investment in post-school learning and training by illustrating the function in terms of expected income. Mincer (1958) measured educational returns to income by studying the correlation of earnings before and after training. However, there is a particular weakness with the use of education (especially formal education) as a proxy for education-related human capital (Wößmann, 2003). In particular, the traditional specification of education based on the number of years of human capital ignores the diminishing returns to income that individuals see past the secondary level (Wößmann, 2003). This suggests that although up to secondary education the amount of education received has a strong effect on income, this effect is not as strong afterward; thus, it cannot be presumed that, for example, a PhD graduate will make monotonic amounts more income than a Master’s candidate (Wößmann, 2003). This suggests that the
specification of human capital in terms of income needs to be considered carefully prior to simply applying a linear specification (Wößmann, 2003).

The information from a meta analysis from one group of authors also shows a relationship between education and income, though this relationship varies depending on educational level. Returns are as high as 26.6% at the primary level (for private primary education). However, they fall to their lowest level at 10.8% for publicly funded further education (Psacharopoulos & Patrinos, 2004). This strongly suggests that education does not have a consistently high rate of return. Psaracharopoulos and Patrinos (2004) also found that public education (social investment) had an overall lower rate of return to personal income per capita than did private education (private investment) (Psacharopoulos & Patrinos, 2004). The reasons for this are not entirely consistent, but some possibilities include that higher education is attached to assumed social status, and as such, serves a signalling function in addition to an educational function and that the quality of education is higher in the private educational system than in the public system (Psacharopoulos & Patrinos, 2004). However, whether the second explanation is correct is highly dependent on the social and private educational systems within a given country, and so cannot be taken for granted.

The effects of education on earnings have been shown to be unstable over time. For example, one panel study from United States data (1950 to 2009) found that the value of high school and university education changed over the study period (Verdugo, 2011). This change was associated with changes in industrial focus and environment and a shift from a manufacturing-based economy to a services and technology-based economy (Verdugo, 2011). In the manufacturing economy, a high school education was
sufficient to begin a career at a reasonable income level, while in the services and technology-based economy, a high school education is sufficient only for lower-tier service jobs; in addition, higher-paying technology jobs required university education (Verdugo, 2011). The value of a university degree was gradually eroded such that by 2009, it was approximately worth the same as a high school degree in the 1950s, meaning that educational attainment had significantly diminishing returns over this period (Verdugo, 2011). Furthermore, the study also found that the higher the educational class, the more significant were the effects of wage inequality between gender and socioeconomic family groups (Verdugo, 2011). This suggests a connection between educational inequality and income as well.

Furthermore, the returns to education are not stable across different economies. A meta analysis showed that returns to education were lowest in the Middle East and North Africa, followed by non-OECD European countries, OECD countries (worldwide), and Asia (which is average) (Psacharopoulos & Patrinos, 2004). The regions that showed the highest returns to education included Latin America and the Caribbean and sub-Saharan Africa (Psacharopoulos & Patrinos, 2004). This seemingly upside-down correlation is likely due to the overall level of education within a region, given that as the standard of education rises within a given region it is likely that the returns to this education will be reduced (Psacharopoulos & Patrinos, 2004). Because of this distribution across varying geographies, it cannot be presumed that education will have the same benefit to the individual or on a societal-wide basis across the world, but instead it will be geographically distributed (Psacharopoulos & Patrinos, 2004).
This study focuses only on return to income to the individual from human capital, which is relatively easy to measure (Psacharopoulos & Patrinos, 2004). However, it should be noted that there is a class of benefits that are accrued to society, rather than only to the individual, that are also dependent on educational aspects of human capital development (Psacharopoulos & Patrinos, 2004). These benefits, which the authors term social benefits, may be seen by the organisation, the family, or any other group in which the educated individual functions (Psacharopoulos & Patrinos, 2004). For example, the family is likely to benefit from intergenerational benefits (such as access to improved educational or social opportunities) afforded by an improved educational system (Psacharopoulos & Patrinos, 2004). Similarly, the organisation in which an individual works will also benefit from an improvement in their individual human capital through enhanced productive capacity (Psacharopoulos & Patrinos, 2004). However, as the authors noted, the evidence for these positive externalities or social benefits is not consistent, and some studies have actually shown a negative effect (Psacharopoulos & Patrinos, 2004). This does not directly reflect on the outcomes of this study, but it could point to another reason why individuals might undertake certification and further experience (such as to ensure intergenerational educational and financial transfers of benefits).

3.3.1.2 Experience

One of the major trends in human capital studies is the study of occupation and industry-specific human capital, compared to general human capital. This type of human
capital is commonly understood to be skills and experiences that are unique to a given
industry and occupation (Kambourov & Manovskii, 2009). Kambourov and Manovskii
(2009) studied the problem of occupation and industry-specific human capital using a
large-scale database in Canada that detailed earnings from 1968 to 1980. The authors
looked for evidence of increasing returns to industry and occupation-specific human
capital. They found that controlling for all other variables resulted in an income increase
of between 12% and 20% for each five years of accumulated experience in a specific
industry and occupation (Kambourov & Manovskii, 2009).

A second study on the effects of occupational and industry human capital on
wages had similar findings, although these findings were more nuanced (Sullivan, 2010).
Sullivan’s (2010) study of the 1979 cohort of the Longitudinal Study of Youth found
that the effects of occupation and industry-specific human capital varied by industry. In
skill-intensive and skill-specific industries, like carpentry, there was a gain in income
associated with occupation-specific skills, but not industry-specific skills (Sullivan,
2010). However, industries such as management and financial services showed a strong
return to industry-specific human capital, with increases as high as 23% associated with
each five years of experience within the industry (Sullivan, 2010). Occupational
increases in these industries were observed, but were much weaker than industry-
specific increases (Sullivan, 2010). A further study also found that position within the
firm resulted in an increased return to human capital (Choudhury & Jones, 2010). This
implies that those at higher levels within the organisation, especially positions attained
by an increase in experience, will have better returns to their education and experience
than those that do not (Choudhury & Jones, 2010). This offers a justification for adding
total years’ experience in the industry as part of the human capital equation, in addition
to formal education. In the current data set the only information available is industry-
specific human capital (years’ experience). According to Sullivan’s (2010) research, this
may have a stronger effect on financial services outcomes in any case, so this is
acceptable.

Experience without ongoing development may not be sufficient to maintain
income and earnings potential from returns to human capital, because human capital (as
with other forms of capital) has a depreciation rate (Arrazola & de Hevia, 2004). The
study performed by Arrazola and de Hevia (2004) found that without ongoing
professional development and education, returns to human capital (including experience)
fell at a rate of between 1% and 1.5% per year in a sample of Spanish workers. This
suggests that including only experience as a factor in human capital development will
result in falling income over time. Thus, experience and education (especially ongoing
education such as certification) are required to fully understand income and its
relationship to human capital over the long term.

3.3.1.3 Certification

There is limited evidence for professional certification and its effect on income,
though somewhat more evidence is available for the relationship between certification
and productivity. One study compared the equity fund management performance of
CFA charter holders and non-charter holders from 1988 to 1992 (Shukla & Singh,
1994). This study found that CFA charter holder-managed funds were more diversified
than others, but also riskier (Shukla & Singh, 1994). The authors did not find a statistically significant difference in the performance of these funds. Another study compared the accuracy of Certified Public Accountant (CPA)-prepared returns and non-CPA prepared returns and paid and non-paid preparers (Hite & Hasseldine, 2003). This study used the number of errors in the prepared returns as an indicator of tax preparer efficiency and accuracy. They found that paid preparers (who had received some training) had a lower error rate than non-paid preparers (who had commonly received no formal training), while CPAs (with the highest level of training) had the lowest rate of errors (Hite & Hasseldine, 2003).

Another study suggested that there was a direct connection among the certification, education, and income aspects of financial planning (Goetz, Zhu, Hampton, Chatterjee, & Salter, 2011). This study indicated that in order to improve certification effects on income, the certification examinations should be integrated directly into the educational and training curriculum (Goetz, Zhu, Hampton, Chatterjee, & Salter, 2011). These studies do suggest a relationship, although they have not used linear regression and thus are not directly integrated into the current study.

A recent study addressed the effect of professional certification on financial planner income (Arman & Shackman, 2012). This is the only known study that addresses the issue of professional certification and financial planner income in a reliable fashion. One of the major contributions of this study is demonstrating that not all certifications will have the same effect (Arman & Shackman, 2012). The authors used a database that contained around 1,800 responses from financial planners, including those who were not certified, and those who held various certifications.
including Certified Financial Planner (CFP), Chartered Financial Consultant (ChFC), and Personal Financial Specialist (PFS) (Arman & Shackman, 2012). The authors found two interesting conditions within this dataset. First, there was no significant difference for the ChFC and PFS certifications and no certification. Holders of these certifications had the same income as the uncertified professionals (Arman & Shackman, 2012). However, CFP certification holders did have a significantly higher income (Arman & Shackman, 2012). Furthermore, CFP certification holders had an increased level of income over the other groups when income was performance-based (such as with bonuses) than when it was primarily based on salary (Arman & Shackman, 2012). This strongly suggests that at least the CFP certification has a positive influence on financial planner earnings, though it does not necessarily make a statement about other certifications available. As the authors noted, there are hundreds of such certifications available worldwide, and although the CFP is considered the highest level of certification, there are many others that could have an effect (Arman & Shackman, 2012). Thus, from the limited evidence available, it is expected that this research will identify a positive relationship between certification and income.

There are relatively few studies on the effects of professional certification that have used regression techniques. One study used the Armed Forces Qualification Test (AFQT) on a population of U.S. military veterans (Griliches & Mason, 1972). Professional certifications may be under-adopted because voluntary certifications are rare (Harris, 2001). Instead, professions are more commonly either non-certificated or under a mandatory certification regime (Harris, 2001). Because of this, comparisons between certified and non-certified professionals are relatively rare. One such study
examined the contribution of income of a fifth-year student teacher training program (Lewis, 1990). This study used incremental wage changes among program-takers to quantify the improvement in wages, finding that there was an increase in incremental wage income over non-takers (Lewis, 1990). However, other studies directly addressing this problem are rare.

These findings generally support the relationship between education and economic growth described in human capital theory. However, there are some studies that moderate this relationship. One study compared returns to education across demographic groups, including gender and ethnic groups (Perna, 2005). This study found that not all demographic groups have the same returns to education (Perna, 2005). Thus, it cannot be taken for granted that the income performance of individuals will be equal, and thus differences in individuals must be taken into account.

Evidence for the effects of certification in general is relatively weak within the research. Lengnick-Hall and Aguinis (2011) point out that despite thousands of certified human resources professionals around the world, there have been few studies that empirically examine the benefits of this certification. The authors note that certified HR professionals do have a higher chance of being hired initially, which could improve their wage expectations, since certification is a valued commodity (Lengnick-Hall & Aguinis, 2011). However, they also note that the most effective use of HR certification is by those that do not have university training in HR. This suggests that certification could serve as a proxy indicator for human capital that would be advantageous in this position, but cannot indicate knowledge or efficiency (Lengnick-Hall & Aguinis, 2011). However, the evidence for this possibility is weak because there have been few studies performed.
in the area, particularly for professional certifications.

3.3.2 Educational Inequality

The majority of empirical studies on educational inequality focus on either birth family socioeconomic status or gender. In this research only gender information is available within the data, and so the literature review focuses on gender. Educational inequality also has a direct connection with human capital, in that increased income inequality and educational inequality are directly associated with a drop in human capital (Meija & St-Pierre, 2008). This strongly demonstrates that the use of human capital theory and educational inequality theory as an integrated theoretical base is justified.

A study in the American financial services industry found that there was a significant difference by gender among individuals who were involved in commissions-based earnings positions (Lahey & Quist-Newins, 2011). This study of commissions-based earners found that there were significant differences in earnings between men and women (Lahey & Quist-Newins, 2011). Lahey and Quist-Newins (2011) found that women have lower gross earnings across all categories of experience and occupation than men, taking into account base pay (if any) and commissions. The study also found that women were disadvantaged in other ways. For example, women paid significantly more overhead on average than men, even though fewer women paid overhead, indicating that their overhead costs are much higher (Lahey & Quist-Newins, 2011). Partial explanations included differences in productivity (with more men being classed
in the top-earning categories, which routinely have higher bonus payments) or certification (with more men holding certifications than women) (Lahey & Quist-Newins, 2011). However, number of hours per week, which is commonly advanced as an explanation with the assumption that women are more likely to take additional time off or work part-time, was not found to be a factor. Women and men worked the same number of hours (Lahey & Quist-Newins, 2011). Thus, in the financial services industry gender is a significant determinant of earnings, with women earning less than men, according to this study. This study is particularly relevant to the current study because of the commissions-based nature of financial planning in Hong Kong.

It should be noted that not all wage inequality in the financial services industry is attributable to demographic factors. Inequality is also associated with compensation structures in place for some positions and differences in unemployment risk (Philippon & Reshef, 2012). Educational inequality was explicitly identified as not being a factor in wage differentials across groups within this study (Philippon & Reshef, 2012). Thus, this is an area where there is some debate over the effects on income.

3.3.3 Age

As discussed above, lifecycle theory is one of the theories that reflect on the outcomes of age. Although this is rarely discussed explicitly within the literature, there are a number of studies that address the role of age in earnings and provide potential explanations for its effect.
One potential explanation for an increase in wages based on age is that older workers are more productive than younger workers, due to higher rates of accumulated knowledge and skill (Dostie, 2011). However, evidence suggests that this relationship may not hold true, especially at the younger and older ends of the age distribution. Dostie (2011) compared productivity and wages based on age from Canadian data dating from 1999 to 2005. He found that across the distribution, there was a general correlation between wages and productivity (Dostie, 2011). However, at the younger end of the age distribution, workers were actually paid less than their productivity would predict, while at the higher end of the age distribution workers were paid more than their productivity would predict (Dostie, 2011). This clearly suggests that there may not be a strong relationship between wages and productivity, particularly for older workers.

However, as the author notes, productivity metrics can be inaccurate and imprecise, meaning that few exact conclusions can be drawn from this finding (Dostie, 2011). Furthermore, this is not a consistent relationship across all geographic regions. For example, a study of Japanese wages and productivity used total factor productivity (TFP) as the productivity indicator (Shirakawa, 2010). This study found an inverse parabolic distribution, with the peak at 40-45 (Shirakawa, 2010). Following 45, worker productivity and wages both began to fall, but wages actually fell faster than productivity (Shirakawa, 2010). This suggests that, at least in Japan, workers begin to become markedly less productive after 45, and that income expectations begin to fall off as well (Shirakawa, 2010). It is not certain whether this response is generalizable or whether it is a peculiarity of the Japanese work environment. However, it is consistent
with other studies that suggest an average falling rate of income toward retirement (Atkinson, 1983; Haveman, Bershadker, & Schwabish, 2003).

3.4 Limitations of Previous Studies

The main limitation that can be identified within the existing body of research is that there is little evidence (only a few studies) about the role of certification on financial planner income, or about the financial planning industry in Hong Kong, that explicitly touch on income. In fact, there is only one study that directly addresses the issue of certification and financial planner income reliably, and this research does not take place in Hong Kong (Arman & Shackman, 2012). The evidence that does exist suggests that the planned theoretical framework is a strong indicator of likely relationships and that inequality and age are likely to influence financial services income (Arman & Shackman, 2012; Lahey & Quist-Newins, 2011). However, given that there are only a few studies in the research area, this does not provide substantial evidence for the research. Although Ligon (2003) does offer a theoretical explanation for increases in income related to certification, this has never been tested within the empirical research. Thus, the application of existing models to the current area of study is highly appropriate to fill a gap in the existing research.

This extends into other areas as well, such as the potential role of certification as a proxy for education in the human capital model as discussed by one set of authors (Lengnick-Hall & Aguinis, 2011). Thus, the biggest problem with previous studies is not in the methodologies used; it is simply that the financial services industry in general
has been so little explored in this area. In general, the empirical models (which will be discussed in more detail below) are both relatively simple to implement and clear in their implications and understanding. Another problem encountered in some studies is operationalizing variables such as productivity (Dostie, 2011). In this case, operationalization of variables has been limited by the available data. However, the development of the models used for analysis (described in Section 3.2) does not attempt to model factors such as productivity, instead focusing on easily operationalized models such as years of experience and education.

3.5 Concluding Remarks

This chapter presents a critical review of existing literature on financial planning, certification, and earnings effects (the direct topic of the determinants of financial planners on income). It is found that very few studies have examined the impact of financial planning certification on the income of financial planners. The evidence for financial planning certification effects on income is limited, and there is no evidence specifically for Hong Kong. However, there are other relevant topics of discussion that can be identified in the literature. A theoretical base of human capital theory, lifecycle theory, and educational inequality theory was established in this chapter. Empirical evidence for the application of these theories to earnings potential was then discussed. Finally, the limitations of the existing literature were examined. The biggest limitation is that the specific topic of interest has simply not been studied in the literature to any extent. This is the gap that this research is intended to fill. In the next chapter, the
theoretical framework of the research is outlined, and the empirical methods used to examine the research question are presented.
Chapter 4  Methodology

4.1 Introduction

This chapter presents the methodology that was used for primary research in this study. This methodology is a quantitative methodology based on linear regression and descriptive statistics. Chapters 2 and 3 have provided some useful information regarding the financial planning industry in Hong Kong and the potential relationship between certification and earnings in this industry, based on theories and previous research. These chapters suggested that financial planning is a booming sector in the financial services industry, and that earnings could be relatively high. However, it also suggested that the level of certification was not very high (though it was growing). Evidence from Chapter 3 identified a number of key elements in earnings determination, including human capital and demographic factors. However, it did not provide support that was convincing enough that a relationship between certification and income may be assumed. Thus, there is a need to develop a sound theoretical and empirical model to investigate the relationship.

The rest of this chapter is organised as follows: Section 4.2 briefly outlines the theoretical framework and regression model, drawing on the literature as described in Chapter 3 (Literature Review). Section 4.3 outlines the empirical model specification, while Section 4.4 presents the hypotheses that will be tested. Section 4.5 discusses the methods used in the research, including the population and sample, the data collection approach, the data analysis approach, and the hypotheses that will be tested. Section 4.6
discusses the sources of data. Finally, Section 4.7 offers some concluding remarks and summary of the methodology chapter, and discusses the following chapter.

4.2 Theoretical Framework and Regression Model

The key theories that are integrated into the theoretical model for this research include human capital theory, educational inequality theory, and lifecycle theory. Although the Ability Theory and Stochastic theory are included implicitly (through the inclusion of ability in human capital and educational inequality theories in the case of the former and the error term in the linear regression equation in the case of the latter), these theories are not addressed further within this research. This section presents a concise theoretical framework that will be implemented in the research, and discusses the regression model that will be used in the analysis as well.

4.2.1 Theoretical framework

Using the literature review outlined above, the following theoretical framework (Figure 9) is used to visualize the research process. This theoretical framework is used to formulate the regression model as described below. Table 1 shows the independent variables for each of the theories examined, as well as the main theorists who discuss them. A formal statement of the theoretical framework is that human capital, educational inequality, and lifecycle influence earnings, and certification is a significant component of human capital.
Figure 9. Theoretical framework derived from the literature (Source: Author)
The theoretical framework within this research includes three key external variable groups, including human capital, educational inequality, and lifecycle period. The relationships between earnings and characteristics of the individual are discussed in detail in Chapter 3. (References in which each of the elements are listed in Table 1.) A
brief description of these relationships is as follows: The elements of human capital that will be explored include education, experience, and certification. The role of certification (in this case operationalized by financial planning certifications of various types) is identified as the key human capital factor, with education and experience also playing a role. The second element of the theoretical framework, educational inequality, is signified by gender, on the basis that gender influences educational chances in many situations. The third element of the theoretical framework, age, is based on lifecycle theory. This influence may be nonlinear, which will be explored in the regression model using an age-squared variable. This is a simplified theoretical model in that interactions between variables (for example, interactions between age and experience) will not be explored, although these could be significant.

4.3 Empirical Model Specification

In order to create a workable regression model from the theoretical framework above, there was a need to identify the key elements and determine which of these were testable under the information that was available within the research. Griliches & Mason’s (1972) model for this relationship was the most fundamental one that can be found, and is commonly still used today in studies of education effects on income (Barrett G. F., 2012; Block, Hoogerheide, & Thurik, 2011; Denny & O'Sullivan, 2007; Li, Ding, & Morgan, 2009). Thus, this is an appropriate model to begin building the analysis on.
The authors started by assuming income to be a simple linear function of education and ability (Griliches & Mason, 1972). They further elaborated on the education variable of two factors so that the effects of both formal schooling and post-schooling experience are included. This is supported by the bulk of empirical research regarding the human capital theory, which conceptualises education and experience (especially occupation and firm-specific experience) as the key elements in human capital (Choudhury & Jones, 2010; Kambourov & Manovskii, 2009; Mincer, 1958; Schulz, 1965; Sullivan, 2010; Verdugo, 2011). This equation will form the basis for elaboration of the regression model that will be used within this study.

The equation is specified as follows:

\[ L = \beta_0 + \beta_1 E + \beta_2 A + \epsilon \]  

(1)

where \( L \) is income, \( E \) is educational attainment, \( A \) is ability and \( \mu \) presents other factors affecting income but not correlated with education and ability. Griliches and Mason (1972) found that income, \( I \) was better to be replaced by its logarithm form, \( L \), an approach that has been followed here.

In this research, the focus had been put on effects of professional credentials on personal financial planning practitioners, which is supported by previous research indicating that certification has an impact on income (Arman & Shackman, 2012; Goetz, Zhu, Hampton, Chatterjee, & Salter, 2011; Griliches & Mason, 1972; Hite & Hasseldine, 2003; Lewis, 1990; Shukla & Singh, 1994). However, there is still insufficient research to accept this relationship as a given (Lengnick-Hall & Aguinis, 2011). Not all sales agents can be personal financial planning practitioners. Only degree holders or those who have at least five years of front line experience in the finance
industry hold Financial Planner positions. Therefore, the ability of the sample population uses a proxy definition based on the number of new business cases opened each year. (This was chosen because of the limitations of the dataset available, which did not have more concrete metrics for achievement or ability available.) Equation 1 is thus modified to Equation 2:

\[ L = \beta_0 + \beta_1 E + \beta_2 A + \epsilon \]  

(2)

where \( L \) is logarithm of income, \( E \) is the highest educational level attained during formal schooling, \( A \) is the number of new business cases opened in a year, and \( \mu \) presents the effects from other factors.

In life cycle theory, it is believed that age is an important factor affecting one’s income. In general, while age increases, income increases at the same time due to assumed increases in productivity and accumulated earnings (Blinder, 1974; Bronfenbrenner, 1971; Dostie, 2011; Haveman, Bershader, & Schwabish, 2003; Kuznets, 1953; Polanyi & Wood, 1975). However, this relationship is not necessarily linear, but may follow an inverse parabolic distribution, with earnings lowest toward retirement (Atkinson, 1983; Haveman, Bershader, & Schwabish, 2003; Shirakawa, 2010). With reference to life-cycle theory, and taking into account the potential nonlinearity of age effects on earnings, Equation 2 is modified as Equation 3:

\[ L = \beta_0 + \beta_1 E + \beta_2 A + \beta_3 Y + \beta_4 Z + \epsilon \]  

(3)

where \( L \) is logarithm of income, \( E \) is educational experience, \( A \) is number of new business cases, \( Y \) is age, \( Z \) is age-squared, and \( \mu \) presents other factors affecting income.
In human capital theory, it is proposed that individuals and society derive economic benefits from investments in people. Education is already represented to the extent that it can be (excluding informal education, which is not available). However, years of experience in the industry and years since certification are human capital elements that will be further included on the basis of human capital studies above based on industry-specific human capital (Choudhury & Jones, 2010; Kambourov & Manovskii, 2009). Therefore, Equation 3 is re-specified as follows:

\[ L = \beta_0 + \beta_1 E + \beta_2 A + \beta_3 Y + \beta_4 Z + \beta_5 T + \beta_6 C + \varepsilon \quad (4) \]

where \( L \) is logarithm of income, \( E \) is formal schooling experience, \( A \) represents business cases (as a proxy for ability), \( Y \) is age and \( Z \) is age-squared, \( T \) is income, \( C \) is years since certification, and \( \mu \) presents other factors affecting income. Equation 4 is the final income-generating equation used within this study.

4.4 Hypotheses

Based on the literature and theoretical model, several hypotheses have been proposed that are tested using a combination of linear regression and other inferential statistics (as described above).

4.4.1 Hypothesis 1

Hypothesis 1 is based on Research Question 1, which reads: “Does professional certification of financial planning practitioners make a statistically significant difference
in incentive-based income, based on a sample of practitioners in Hong Kong?” Direct evidence for this difference is limited. One theoretical analysis suggests that unobservable investments in education (such as certification) would increase the capabilities of the financial planner, thus increasing his or her income (Ligon, 2003). The only reliable analysis of financial planning income based on certification did find that there was a significant difference, but only for holders of one certification (the CFP certification) (Arman & Shackman, 2012). However, evidence on certification and income from other fields does indicate that certification increases income, or at least earnings potential, of other workers, usually through a human capital increasing mechanism (Goetz, Zhu, Hampton, Chatterjee, & Salter, 2011; Griliches & Mason, 1972; Harris, 2001; Hite & Hasseldine, 2003; Lengnick-Hall & Aguinis, 2011; Lewis, 1990; Shukla & Singh, 1994). Additionally, theoretical evidence of human capital theory suggests that investments in human capital, such as the training inherent in the certification process, will increase earnings and earnings potential (Barrett G. F., 2012; Block, Hoogerheide, & Thurik, 2011; Choudhury & Jones, 2010; Denny & O'Sullivan, 2007; Kambourov & Manovskii, 2009; Li, Ding, & Morgan, 2009; Mincer, 1958; Mincer, 1970; Schulz, 1965). On the basis of this evidence from the empirical and theoretical literature, Hypothesis 1 is proposed:

**Hypothesis 1:** Practitioners who have obtained professional credentials have higher income than those who have not obtained professional credentials.
4.4.2 Hypothesis 2 (2a to 2f)

The second hypothesis concerns the effects of demographic and educational variables on the earnings of financial planners. This hypothesis is based on Research Question 2, which reads, “What effects do demographic factors (age and gender) and human capital factors (years of education and experience) have on the relationship between professional certification and income?” The variables tested include Age (Y), Gender (G), Years of Industry Experience (T), Formal Educational Level (E), Years Since Certification (C), and Certification Class (K).

**Hypothesis 2a:**

The first demographic variable to be tested is that of age. Age as a predictor of income is a natural extension of lifecycle theory, which holds that there is a reverse parabolic relationship between career stage (entry-level to retirement) due to different compositions of income determinants including education, experience, and non-market activities (Blinder, 1974; Bronfenbrenner, 1971; Haveman, Bershadker, & Schwabish, 2003; Polanyi & Wood, 1975). Age is also found to be important in empirical studies of income determinants (Atkinson, 1983; Dostie, 2011; Griliches, 1972; Kuznets, 1953; Shirakawa, 2010). As such, Hypothesis 2a is proposed:

*Hypothesis 2a: Age is positively correlated with practitioner’s income.*
**Hypothesis 2b:**

The second demographic factor addressed in Research Question 2 is gender. Gender is addressed under educational inequality theory, which holds that gaps in educational opportunity and attainment limit earnings potential for some classes of workers, such as women and ethnic minorities (Attewell & Newman, 2010; Ferreira & Gignoux, 2011; Mayer, 2010). Additionally, empirical studies have shown that there is a significant difference in earnings by gender in the financial industry, although there are some questions as to whether this difference is actually based on educational inequality (Lahey & Quist-Newins, 2011; Philippon & Reshef, 2012). This research does not have enough detailed data available to identify educational inequality measures; however, gender can be tested. As such, Hypothesis 2b is stated:

_Hypothesis 2b: There are significant differences in practitioners' income by gender._

Hypotheses 2c through 2f address human capital factors related to education and experience. Although there are other factors involved in human capital (such as nutrition and healthcare), it is known that education and work experience are two of the most important measurable factors in the workplace for determining income (Baron & Armstrong, 2007).

**Hypothesis 2c:**

Hypothesis 2c addresses the issue of experience. Experience is understood to be a theoretical component of human capital (Baron & Armstrong, 2007). It is also known through empirical studies to affect income levels (Choudhury & Jones, 2010;
Kambourov & Manovskii, 2009), which found that experience had a direct positive effect on income levels. As such, Hypothesis 2c is proposed:

\textit{Hypothesis 2c: The number of years’ experience in the financial industry is positively correlated with practitioners’ income.}

\textbf{Hypothesis 2d:}

Hypothesis 2d addresses the number of years since certification, which acts as a combination of education (through certification) and experience. This is supported by various literature studies on the influence of education and experience on income (Baron & Armstrong, 2007), which posited that education and experience affected income, although it has not been tested explicitly in previous studies.

\textit{Hypothesis 2d: The number of years since first certification has a positive correlation with practitioner’s income.}

\textbf{Hypothesis 2e:}

Hypothesis 2e is supported by human capital theory, which holds that formal education is one of the main determinants of income (or income potential) available (Baron & Armstrong, 2007; Sahota, 1978; Schulz, 1965). This is also supported by a number of studies that address the role of formal education in income attainment, including under conditions such as birth family poverty and lower cognitive capabilities (Barrett G. F., 2012; Block, Hoogerheide, & Thurik, 2011; Choudhury & Jones, 2010; Li, Ding, & Morgan, 2009; Sullivan, 2010; Verdugo, 2011). These studies generally
support a positive relationship between formal educational attainment and increased income. Thus, Hypothesis 2e is proposed:

_Hypothesis 2e: The level of formal education achieved makes a significant difference in practitioners’ income._

_Hypothesis 2f:

Finally, it is known that practitioner certification does make a significant difference in financial planning income at least in some situations, as demonstrated theoretically and empirically (Arman & Shackman, 2012; Ligon, 2003). As such, Hypothesis 2f is proposed:

_Hypothesis 2f: The practitioner holding any certification for any time period results in a difference in income._

4.4.3 **Hypothesis 3 (3a and 3b)**

The third hypothesis addresses the questions of personal choice posed in Research Question 3. This question is based on the fact that, at least in this case, there is an absence of regulatory pressure or organisational requirement for individuals to attain certification or specifying which certifications must be achieved. Therefore, there is an element of personal choice in attaining certification.

The first question is very basic: why do people undertake certification in the first place in the absence of external pressures? Much of the research on human capital and certification suggests that professional certifications serve the purpose of signalling
specific skills and experience and commitment to the professional role, as well as providing formalized further education (Davidsson & Honig, 2003; Fitch, 2007; Han, Lin, & Chen, 2008; Paré & Tremblay, 2007; Woods, 2002). These studies suggested a role for certification as a means of signalling education and training. In this research, it is considered that those most in need of this signalling are those without higher educational levels, who require additional external validation. As such, Hypothesis 3a is posed:

Hypothesis 3a: Insurance agents with lower levels of formal education will be more likely to pursue certification than those with higher levels of formal education.

The second aspect of personal choice in development of human capital and income via certification is the choice of certification. Given that certification is required neither by the company nor by regulatory requirements, there is wide personal choice in certifications. The target company tracks five different certifications, including the CFP, LUTCF, FCHCP, RFC, and RFP. Of these certifications, all have some number of certificate holders, and many agents have more than a single certification. How do individuals select the appropriate certification? One possibility is the influence on income levels. Previous research has shown that the type of certification obtained by the financial planning practitioner makes a difference in the income gains (Arman & Shackman, 2012). Arman and Shackman (2012) found that the CFP certification, considered to be the highest level of certification, makes the highest difference in increased income. As such, it is possible that the choice of certification is based (at least partially) on the perception of increased income. Perceptions cannot be measured within
this research, but the research does enable the examination of actual effects on income from different certifications. As such, following Arman and Shackman (2012) and previous discussions of personal choice and its impact on human capital development (Psacharopoulos & Patrinos, 2004), Hypothesis 3b is stated:

_Hypothesis 3b: There will be differences in income based on the specific certification held, with higher-earning certifications having stronger uptake than those that have lower income effects._

4.5 Method of Analysis

There are four key points to be discussed in the methods section in relation to the research design. This includes the population and sample, data collection, data analysis, and hypotheses that are tested in the research. This discussion is conducted below with reference to the literature in order to demonstrate the ways in which it was developed and how this research plan is related to the existing literature. All analysis was conducted in SPSS Version 19.

4.5.1 Descriptive Analysis

Descriptive statistics were used to provide a complete demographic and professional portrait of the sample. These statistics do only describe the sample (Healey, 2011), but given the size of the sample, they do offer some insight into the general population. Demographic variables examined included age and gender. Human capital
variables included years’ experience, educational level, position held, total certification rate, years certified, type of certification held, total business cases, and total commissions. Descriptive statistics were calculated based on the type of data. Presentation methods include charts (histograms, pie charts, and bar charts), frequency tables, and measures of central tendency and spread (including mean, median and standard deviation), as appropriate to the type of data under analysis.

4.5.2 Correlation Analysis

Pearson correlation is used to test the direction and strength of the relationship between commission income (I) and numerical variables for Hypotheses 2a, 2c, and 2d. The variables tested against Income are Age (Y), Experience (T), and Years Certified (C). Significance is measured at the $p < .05$ significance level. Correlation tests the co-occurrence of two factors, though it cannot identify causal relationships or be used predictively (Healey, 2011). However, correlation will help determine whether there are potential relationships between these variables.

4.5.3 Testing for Means Differences

Categorical variables can be tested for means differences in a variety of ways, depending on the type of data and number of categories. Differences in income related to Gender (G) (Hypothesis 2b) are tested using an independent $t$-test for difference in means, with significance tested at $p < .05$ and the direction and extent of differences
found also reported. This test determines whether, and in what direction, two different
groups within the data set differ in their distribution (Healey, 2011).

Differences in Educational Level (E) (Hypothesis 2e) and Certification Class (K)
(Hypothesis 2f) are tested using ANOVA, which is a generalisation of the independent t-
test for difference in means for more than two groups (Healey, 2011). This analysis is
performed at a significance level of $p < .05$. Post-hoc testing (LSD and Bonferroni) is
used to determine the difference in income levels between groups.

Calculation of differences in educational level and certification choice
(Hypothesis 3a) was performed using chi square analysis, to determine the degree of
difference in distribution between educational categories. The chi square analysis test is
used to determine whether there are significant differences in the distribution between
categorical variables (Healey, 2011). Differences in income from different certifications
(Hypothesis 3b) were examined using ANOVA analysis, with significance tested at the
$p < .05$ level. As with other differences requiring ANOVA testing, differences between
groups were examined using post-hoc testing (LSD and Bonferroni testing).

4.5.4 Regression Analysis

For research question 1 (Hypothesis 1) a multiple regression was used that
compared the effects of all variables along with individual variables in the relationship
between certification (represented as years since certification, where those that are not
certified will have 0 years). This test used linear regression (ENTER method) in SPSS.
This analysis is performed using regression as expressed in Equation 4 (Section 4.2.2). The regression model can be summarized as above, as follows:

\[ L = \beta_0 + \beta_1 E + \beta_2 A + \beta_3 Y + \beta_4 T + \beta_5 C + \varepsilon \]  

(4)

where \( L \) is logarithm of income (operationalized as total commission figures), \( E \) is formal schooling experience, \( A \) represents business cases (as a proxy for ability), \( Y \) is age and \( Z \) is Age-squared, \( T \) is income, \( C \) is years since certification, and \( \mu \) presents other factors affecting income.

In this study, additional single regression equations were specified and estimated to isolate the effects of individual variables in the relationship between factors. The chart below (Table 2) shows the regressions that were used in this regression test. The dependent variable in all equations will be \( L \) (log income), based on Griliches and Mason’s (1972) income model. These models isolate the effects of each of the four categorical variables. This regression will be run using 2011 data, to allow the greatest amount of time for certification to penetrate into the population from its 2000 beginnings. The cross-sectional approach is supported by several other studies, which have also used cross-sectional effects to determine influence of various factors on salesperson income (Jantan, Honeycutt, Thelen, & Attia, 2004; Johlke, 2006; Küster & Canales, 2008; Pettijohn, Rozzell, & Newman, 2010; Román, Ruiz, & Munuera, 2002).
Table 2. Model Specification for Linear Regression

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
<th>Model 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>E (Education)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>A (Business Cases)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Y (Age)</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z (Age-Squared)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>T (Experience)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>C (Years certified)</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

4.6 Data Sources and Collection of Data

4.6.1 Population and Sample

The level of analysis at which this research is conducted is the financial planner (individual) level. As previously stated, the population of financial planners in Hong Kong is approximately 60,000, although the certified population is much smaller (Institute of Financial Planners of Hong Kong, 2008). The sample includes all sales agents from one of Hong Kong’s largest insurance agencies (who has requested to remain anonymous within this survey in order to prevent loss of company information) over the past 12 years (since 2000). Between one and 12 years of information is included in the data set for each insurance sales agent, depending on his or her tenure with the firm; however, many agents were employed by the firm prior to 2000, making some portion of their experience in the firm undiscoverable.

The sample includes 5,341 active agents within the company. However, a sampling frame is applied to exclude agents with no commission income. Commission income is used as the basis for income because it is directly related to financial planner
skill, given that financial planners in Hong Kong receive commissions based on sales to customers rather than on their planning activities (Hong Kong Baptist University and the Society of Registered and Financial Planners Ltd., 2007). Agents with no commission income are typically those that have moved into non-commission roles (such as managerial roles), who have retired, or who have not yet begun to receive commission because they are still in the initial training period. Excluding agents with no commission income leaves a total sample of n = 5,019 agents.

4.6.2 Data Collection

A target company was selected based on contacts within the Hong Kong insurance and financial planning industry. The researcher discussed the project with several firms, and selected a firm based on availability of data and willingness to share this data under certain conditions, including anonymity within the completed research. Only one firm was ultimately available for the research. Data regarding the entire agent population was obtained from the Management Support division of the target company, following obtaining permission from the firm’s leadership. For confidentiality reasons, the firm involved in the study cannot be named. However, its identity was disclosed on the University of Newcastle ethics application associated with this research.

The data set was stripped of potential identifying markers (which did not include names or employee numbers but did include date of birth and date of hire). The initial sampling technique used was a census sampling technique (using the entire data set), though this was later reduced based on requirements. The sample consisted of 5,019
agents, including 667 agents (13.3%) that are certified as of 2011. This includes both financial planners and sales agents. The data set obtained from the firm included agent records from 2000 to 2011. However, not all agents were active throughout this period, as most agents joined during the period from 2000 to 2010. In order to maximize the number of agents available for analysis, the data from 2011 was used. This did result in the elimination of agents with $0 in rollover or new commission income (approximately 323 agents). However, this was significantly smaller than the number that would have resulted from using other years’ income. As such, 2011 was chosen as the cross-sectional time period for this research.

Calculations on the original data were then performed to produce total commission compensation figures (I) and other figures, such as total experience and certification rates. Additionally, log (income) was calculated for the linear regression period. Types of certification were also categorised, and the total number of certifications held was calculated. This preparation was performed in Excel and SPSS.

4.7 Concluding Remarks

This chapter has outlined the methods used in the original research within this analysis. The discussion began with the theoretical framework and linear regression model that was used in the analysis. It then continued with an outline of the method that was selected for the research, including discussion of the population and sampling strategy, the data collection process, and the analysis process. The hypotheses that are tested in this research were also presented. These hypotheses are based on the literature
as well as on the research questions, and are intended to directly identify the answers to the research questions and achieve the objectives of this research. The hypotheses address the core issues of the research, including the impact of certification on income, the effects of demographic and human capital effects on income, and the effects of personal choice on income. These hypotheses are comprehensive in terms of the analysis to be conducted as well as the findings that can be examined within the context of existing research. The goal of this chapter has been to present the analysis methods used and to examine the conditions under which the research took place. In Chapter 5, the results of this analysis are presented. They are then contextualised within the literature to show where there are significant differences from and similarities to the existing literature. This discussion will inform of the further discussion of managerial and academic implications in Chapter 6.
Chapter 5   Empirical Results and Discussion

5.1 Introduction

This chapter discusses and examines the results of the research based on the literature review and considers how the research ties together. The literature review and theoretical model suggested that there would be connections between demographic factors, certification, and earnings. In fact, the review showed that there were some connections though not as many as suggested in the literature.

This chapter consists of two further sections. Section 5.2 presents the empirical findings of the research, including the socioeconomic characteristics, correlation, ANOVA, and regression results. It also discusses the findings and contextualises these findings compared to the theoretical framework as well as comparing information to existing empirical findings where possible. This section presents the bulk of the primary research done for this paper. Finally, Section 5.3 provides some brief concluding remarks for this chapter.

5.2 Empirical Results and Discussion

The empirical results presented in this chapter were formulated based on the literature review and the key tenets of this review. These foundations particularly include human capital theory (Section 3.2.1), educational inequality theory (Section 3.2.3), and lifecycle theory (Section 3.2.4).
5.2.1 Socioeconomic and Performance Characteristics of Financial Planners

Socioeconomic characteristics discussed in this research can be classified in three categories. These include demographic characteristics (Age and Gender), human capital characteristics (Position, Experience, Education, and Certification), and performance (Income and Business Cases). Demographic characteristics are based on educational inequality theory and lifecycle theory, while human capital characteristics are based on human capital theory. Performance indicators are used because these are the main determinants of income (i.e. income is based on the number of business cases opened). A further characteristic that is examined is the choice of certification among those that have selected certifications.

5.2.1.1 Demographic characteristics

Demographic characteristics included Gender and Age. Figure 10 shows the gender distribution of the respondents, showing that the sample is 41.38% male and 58.62% female. This suggests that the financial planning sample is somewhat biased toward female participation, though it is not known how this compares to the composition of the financial planning field as a whole. The mean age for this sample was 49.6 years (SD = 10.1 years). Figure 11 shows the educational distribution, showing that most agents were non-degree holders.
Figure 10. Gender distribution of Financial Practitioners

Figure 11. Educational level attained by Financial Practitioners

Source: Derived by the author.

5.2.1.2 Human capital characteristics

Human capital characteristics in the sample include Position (Sales Only or Financial Planning), Experience, Education, and Certification. Sales positions are
empowered to sell only products chosen by consumers, while financial planners also offer planning and advice services. Table 3 shows the descriptive statistics for the number of years certified and total years of experience in 2011. Figure 12 shows that 36.5% of the sample was rated as financial planners, while 63.5% are sales-only positions. This suggests that only a relatively small number of participants have reached the higher level of certification.

Table 3. Average years of certification and experience for practitioners across the sample

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years certified in 2011</td>
<td>5019</td>
<td>.00</td>
<td>14.00</td>
<td>0.65</td>
<td>2.04</td>
</tr>
<tr>
<td>Experience in 2011</td>
<td>5019</td>
<td>.00</td>
<td>30.00</td>
<td>4.39</td>
<td>5.11</td>
</tr>
</tbody>
</table>

Figure 12 Position held by Financial Practitioners

Note: Sales positions entail selling only pre-chosen products, while financial planning positions also include planning and advice services.
Figure 13 shows the distribution of educational levels. Given the high number of sample members that do not have educational information available, these members are excluded from consideration when educational level is taken into account, resulting in a sample size of \( n = 4,559 \) for these analyses.

Figure 13. Rates of Certification of Financial Practitioners, 2011

![Certified (2011)]

Figure 13 shows that approximately 12.8% of the sample \((n = 643)\) hold one or more certifications, while 87.2% of the sample \((n = 4,376)\) hold no certifications. For the certified members, the years certified are 4.93 years \((SD = 3.21\) years). The level of degree attainment and certification within the sample suggests that there is a relatively low level of overall formal human capital investment as defined within this study (including formal education and/or certification). However, the high rate of 9.1% non-disclosed educational statuses does suggest that this could be somewhat different from the stated level.
5.2.1.3 Performance

The two performance variables used in the analysis include Business Cases (representing the total number of new clients in a given year) and Commission income (representing the total of new and rollover commissions received from annual sales activities). Table 4 shows the descriptive statistics for these variables. These variables show that the performance of the financial professionals varies widely, with some professionals making only $272 in commissions during the year and the largest earner making almost $11 million. This suggests that there is a wide range of potential performance in the financial planning group.

Table 4. Descriptive statistics for business cases and total commissions of Financial Practitioners, 2011

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Cases</td>
<td>5019</td>
<td>0</td>
<td>406</td>
<td>27.02</td>
<td>22.98</td>
</tr>
<tr>
<td>Total Commissions</td>
<td>5019</td>
<td>272.06</td>
<td>10,686,184.43</td>
<td>196,651.07</td>
<td>308,478.48</td>
</tr>
<tr>
<td>Valid N</td>
<td>5019</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.2.1.4 Type of Certification

There were five types of certification tracked by the target company. These include the Certified Financial Planner (CFP), Fellows of Chartered Financial Practitioner (FCFHP), Life Underwriting Training Council Fellow (LUTCF), Registered
Financial Consultant (RFC), and Registered Financial Planner (RFP). The average number of certifications per financial planner was 1.2 certifications. A total of 123 financial planners (approximately 18.4% of the certified sub-sample) held multiple certifications. Table 5 shows the frequencies of each of the certifications. The total of this sample is larger than the total certificated sub-sample, because of these multiple certifications. This analysis shows that the LUTCF certification is most common, followed by the CFP and FCFHP (which have nearly the same number of certificate holders). The least popular certification is the RFP. In Table 5, the per cent of total certificates is the total percentage of certificates held. The percentage of certificated agents is the total number of agents holding the certificates (from the sub-sample that holds any certificates). These numbers are different because a number of agents hold more than one certificate, making the percentage of total certificates slightly lower than the percentage of certificated agents in all cases.

Table 5. Frequency of various certifications in the certificated sub-sample

<table>
<thead>
<tr>
<th>Certification</th>
<th>Frequency</th>
<th>Per cent of Total Certificates (N = 803)</th>
<th>Per cent of Certificated Agents (n = 667)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFP</td>
<td>203</td>
<td>25.3%</td>
<td>30.4%</td>
</tr>
<tr>
<td>FCFHP</td>
<td>200</td>
<td>24.9%</td>
<td>30%</td>
</tr>
<tr>
<td>LUTCF</td>
<td>227</td>
<td>28.3%</td>
<td>34%</td>
</tr>
<tr>
<td>RFC</td>
<td>115</td>
<td>14.3%</td>
<td>17.2%</td>
</tr>
<tr>
<td>RFP</td>
<td>58</td>
<td>7.2%</td>
<td>8.7%</td>
</tr>
</tbody>
</table>

*Source:* Derived by author.
5.2.2 Correlation Analyses

This section presents the analyses for these variables, including statistical outcomes and further discussion of the findings. These analyses are based on theoretical foundations, including human capital theory, as well as educational inequality theory and lifecycle theory, which suggest differences in earnings outcomes. Hypotheses are formally stated in Section 4.3.4. The Pearson correlation analysis was used to examine the relationship between total commission income and age (Hypothesis 2a), years of experience in the financial industry (Hypothesis 2c), and years of certification (Hypothesis 2d). Table 6 shows the outcomes of all correlation tests referred to in the following sections.

Table 6. Correlation analysis outcomes for testing Hypotheses 2a, 2c, and 2d

<table>
<thead>
<tr>
<th></th>
<th>Total Commissions (2011)</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in 2011</td>
<td>0.137</td>
<td></td>
</tr>
<tr>
<td>Experience in 2011</td>
<td>0.207</td>
<td>0.134</td>
</tr>
<tr>
<td>Years Certified in 2011</td>
<td>0.134</td>
<td></td>
</tr>
</tbody>
</table>

5.2.2.1 Age and Income of Financial Practitioners

We investigate the hypothesis that age is positively correlated with a practitioner’s income (Hypothesis 2a). Table 6 reports the Pearson correlation between age and income to be: \( r = 0.137 \) (p = 0.000). Given that the p-value is less than the critical value of 0.05, we conclude that there is a positive correlation between age and a practitioner’s income in Hong Kong. It should be noted, however, that the relationship
between age and a practitioner’s income is weak given that the correlation coefficient is less than $r = 0.3$, a measure of the strength of the association between the variables (Healey, 2011). Given this finding, Hypothesis 2a is proved and it can be accepted at the 5% significance level.

The finding regarding age is consistent with the existing studies regarding age, with changes in the age distribution affecting performance (as represented in this study by income rather than a productivity proxy) (Dostie, 2011; Shirakawa, 2010). However, this was a weak relationship. The effect of aging may not be as strong in this data set because of the elimination of those with HKD0 commissions. This eliminates the newest employees as well as those employees that may be retiring or winding down sales careers for third-stage career changes. While this was necessary for the analysis, it could reduce the impact of age on earnings.

### 5.2.2.2 Experience and Income of Financial Practitioners

We investigate the hypothesis that experience is related to income for financial practitioners. Hypothesis 2c was tested using a correlation between the number of years of experience and income. Results for this test are shown in Table 6. This correlation ($r(5,019) = 0.207, p = 0.000$) is also significant. However, it is once again a relatively weak correlation that does not pass the threshold for practical significance at $r = .300$ (Healey, 2011). As such, Hypothesis 2c is proved and it can be accepted at the 5% significance level, though it is a relatively weak correlation. Experience was expected to be a major factor in the earnings, given its centrality to human capital theory, which
holds that increasing experience leads to expanded earnings potential (Baron & Armstrong, 2007; Becker, 1964). Additionally, there is substantial evidence regarding experience in the literature review that supports the findings. It was expected that industry experience would be a more substantial indicator of earnings potential given the requirement for industry-specific experience (Kambourov & Manovskii, 2009; Sullivan, 2010). However, this relationship was weaker than expected given the empirical evidence.

One reason for this difference in returns could be differences in position. Choudhury and Jones (2010) suggested that there were increased returns to experience at higher levels, so the correlation was re-examined in subsets of the data including sales-only job grades and financial planning job grades (a more senior position requiring at least five years of experience). This resulted in a stronger correlation for the sales-only group ($\chi^2 = 0.347, p = 0.000$). In contrast, the financial planner group’s correlation ($\chi^2 = 0.066, p = 0.005$) was significantly weaker. This is opposite to the direction proposed by Choudhury and Jones (2010), indicating that more experience was actually more beneficial for sales positions than for financial planner positions. There is no clear explanation for this opposite relationship either within the data or within the literature. It is possible that it is due to client behaviours (such as seeking out more experienced sales agents) or workplace arrangement (such as queuing new customers to experienced sales agents).
5.2.2.3 Years of Certification and Income of Financial Practitioners

In this section, we examine the relationship between the number of years a practitioner has been certified and the income attained. Table 6 shows the results of this correlation. This correlation is once again technically statistically significant, \( r(5,017) = 0.134, p = 0.000 \), indicating that Hypothesis 2d is **proved. This hypothesis can be accepted at the 5% significance level**.

The inclusion of years of certification was the weakest potential relationship to be found within the data in comparison to age and experience, given that there is limited evidence on the relationship between certification and income in the financial planning field or the financial services industry in general. This was expected given the overall weakness of the research in this area (Lengnick-Hall & Aguinis, 2011). However, Arman & Shackman (2012) found that an increase in earnings is associated with certification, but only for CFP certifications. It is important to note that, in this study, financial practitioners with different sets of certification were considered. This could result in some individuals in the data set having better returns from certification than others, diluting the responses. Other studies have shown an improvement of financial professionals’ efficiency or performance with certification, but this was not directly related to income (Hite & Hasseldine, 2003; Shukla & Singh, 1994). Thus, these results are generally consistent with the existing literature, although the correlations are weak.
5.2.3 ANOVA, T-test and Chi Square Results

Three relationships between demographic and human capital variables were tested using independent t-tests for difference in means and ANOVA tests. These relationships are described in Hypothesis 2b (Gender and Income), Hypothesis 2e (Education Level and Income), and Hypothesis 2f (Certification and Income), as well as Hypothesis 3a (Educational Level and Certificate Choice) and Hypothesis 3b (Certificate Choice and Income). This section discusses the statistical outcomes as well as the literature on these findings. These hypotheses are described in detail in Section 4.3.4.

5.2.3.1 Gender and Income (Hypothesis 2b)

Hypothesis 2b examines the differences in practitioners’ income by gender. Differences in income by gender were tested using an independent t-test for difference in means. The results of the t-test ($t(5017) = -6.599, p = 0.000$) indicate that there is a significant difference in commission earnings by gender.

Table 7 shows the descriptive statistics for each group, showing that mean earnings are HKD58,092.25 higher for women than for men. This indicates that women are significantly more successful than men in this sample. Thus, hypothesis 2b is proved and it can be accepted at the 5% significance level. Descriptive statistics showed that the female sales group ($M=220,691.23, SD=307,731.91$) had a higher commission income than the male group ($M=162,598.98, SD=306,934.22$). Contrary to expectations
from the literature, women had stronger earnings than men. This is inconsistent with findings from the American financial markets, where men have significantly higher earnings than women (Lahey & Quist-Newins, 2011), as well as with theories regarding gender inequality in earnings. Most studies have suggested that educational inequality tends to negatively affect earnings of women as compared to men (Meija & St-Pierre, 2008). This is commonly seen because women face various conditions in many societies including earlier completion of formal education, lower rates of college education, and so on. However, this is not necessarily the case in this data set.

Further analysis was conducted to compare education levels and experience, to determine whether educational differences or experience could account for the difference in earnings as compared to previous research. A Pearson chi-square analysis ($\chi^2 = 127.349, p = 0.000$) shows that there is a statistically significant difference in distribution between male and female sample members for educational levels. Table 7 shows a frequency distribution for the distribution of education level between genders. This shows that although female respondents have slightly higher rates of Master’s degrees, at other degree levels male respondents do have higher rates of education. Thus, women are earning more within this company despite educational inequalities. An independent t-test for difference in means ($t(5017) = -1.631, p = 0.103$) did not show a significant difference in experience between genders. Years of certification were similarly tested, and did not show a significant difference in means ($t(5017) = 0.261, p = 0.794$).
Table 7. Summary statistics of educational level by gender

<table>
<thead>
<tr>
<th></th>
<th>Gender</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>NA</td>
<td>158</td>
<td>302</td>
</tr>
<tr>
<td>% within Gender</td>
<td>7.6%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Non-Degree</td>
<td>1075</td>
<td>1794</td>
</tr>
<tr>
<td>% within Gender</td>
<td>51.8%</td>
<td>61.0%</td>
</tr>
<tr>
<td>High School/AD</td>
<td>103</td>
<td>87</td>
</tr>
<tr>
<td>% within Gender</td>
<td>5.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Bachelor</td>
<td>579</td>
<td>486</td>
</tr>
<tr>
<td>% within Gender</td>
<td>27.9%</td>
<td>16.5%</td>
</tr>
<tr>
<td>Master</td>
<td>156</td>
<td>273</td>
</tr>
<tr>
<td>% within Gender</td>
<td>7.5%</td>
<td>9.3%</td>
</tr>
<tr>
<td>PhD</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>% within Gender</td>
<td>0.3%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

A cross-tabulation did not show any significant difference in distribution of certification between genders, either. As such, it is not possible to determine from this data set why the results are inconsistent with the expected findings from the research. In particular, these findings are inconsistent with the educational inequality theory, which holds that lower educational access reduces incomes (Lahey & Quist-Newins, 2011; Meija & St-Pierre, 2008). These findings are more consistent with other studies, which have demonstrated that educational inequality is not a factor in differences in income (Philippon & Reshef, 2012).

5.2.3.2 Education Level and Income (Hypothesis 2e)

Hypothesis 2e tested the idea that differences in formal educational levels attained would make a difference in the income level of sales people. Since education
levels have more than two categories, it is tested using ANOVA, with post hoc analysis (using the Bonferroni and LSD methods). The sample data set had a high rate of non-reporting of educational level (n = 460). Given that this non-reporting would not provide any reliable information, these elements were removed from the sample, leaving a total sample of n = 4,559 sales representatives. The ANOVA results (F = 35.832, df = 4, p = 0.000) showed that there were significant differences between the groups. LSD and Bonferroni testing showed that there were statistically significant differences between all groups (Non-Degree, High School/AD, Bachelors, and Masters), with the exception of Ph.Ds. The only statistically significant difference for the Ph.D. earners was between this and a Masters. It should be noted, however, that only six Ph.D. holders are included in the analysis, which could reduce the practical applications of this analysis. Table 8 shows the descriptive statistics for each of these groups, demonstrating that Masters holders have the highest average earnings, while Ph.D. holders have the lowest average earnings. However, there is no clear linear relationship between educational levels and earnings, given that non-degree holders earn more than high school degree holders and Ph.D. holders earn the least. This indicates that hypothesis 2e is proved and it can be accepted at the 5% significance level.
Table 8. Summary statistics of commission income for educational level groups (Hypothesis 2e)

<table>
<thead>
<tr>
<th>Education Level</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Degree</td>
<td>2869</td>
<td>166,615.95</td>
<td>217,896.495</td>
</tr>
<tr>
<td>High School/AD</td>
<td>190</td>
<td>149,299.43</td>
<td>179,855.913</td>
</tr>
<tr>
<td>Bachelors</td>
<td>1065</td>
<td>206,151.17</td>
<td>233,150.806</td>
</tr>
<tr>
<td>Masters</td>
<td>429</td>
<td>346,529.90</td>
<td>690,934.971</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>6</td>
<td>78,140.67</td>
<td>934,120.83</td>
</tr>
<tr>
<td>Total</td>
<td>4559</td>
<td>191,943.24</td>
<td>302,548.406</td>
</tr>
</tbody>
</table>

Differences in income by educational level were expected given the human capital theory base of the research (Baron & Armstrong, 2007; Becker, 1964; Schulz, 1965). However, this relationship was not linear, as expected. In part, this non-linearity could be due to the different requirements of the industry, as suggested by Verdugo’s (2011) research, which indicated that the value of various educational achievements changed over time and within different types of industries. The low levels of Ph.D. earnings could be related to the low level of Ph.D. employment, or could be attributed to other reasons such as part-time employment by Ph.D. holders. This is an area for further analysis.

5.2.3.3 Certification and Income (Hypothesis 2f)

Hypothesis 2f stated that certification (of any time or duration) makes a difference in income. The final comparative means analysis that was conducted addressed certification and income. This was addressed using an absolute measure of certification (sample members were either certified or uncertified as of 2011). It was tested using an independent t-test for difference in means. The results of the t-test (t
(5017) = 10.673, p = 0.000) indicate that there is a significant difference in total commissions between certified and non-certified professionals. In fact, the mean earnings of certified financial planners (M = 314,046.23, SD = 260,084.87) are almost twice that of uncertified planners (M = 178,658.75, SD = 211,377.58). This clearly indicates that hypothesis 2f is proved. This hypothesis can be accepted at the 5% significance level.

The findings in this research are consistent with the only other major research on the relationship between financial planner income and certification (Arman & Shackman, 2012). This study did not differentiate between types of certification, which Arman and Shackman (2012) did. This suggests that, even though (as discussed above) the time since certification did not figure in the income projection, the fact of certification was important. This suggests that certification is more consistent with the effects of education in human capital formation, rather than the effects of experience (Baron & Armstrong, 2007).

### 5.2.3.4 Educational Level and Certificate Choice (Hypothesis 3a)

Hypothesis 3a tested the likelihood of pursuing formal education, positing that those with lower levels of formal education will be more likely to seek out certification. This hypothesis was tested using a chi-square analysis, which identifies variations in the expected distribution of categorical data. In this case, it was assumed that there would be an equal distribution of certification among educational levels. To perform this analysis, a total of 4,559 agents from the data set were included, due to the exclusion of 460
agents that did not disclose information about their educational status. Table 9 shows a cross-tabulation that compares the rates of certification among the various educational levels. This shows that the highest level of certification occurs in the Bachelor degree category, while the lowest level of certification is at the High School or AD level. (The Ph.D. level is excluded from discussion because the percentages are skewed due to the very small size of the category).

Table 9. Cross-tabulation of certification rates by degree level (Hypothesis 3a)

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Certification</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Non-Degree</td>
<td>325</td>
<td>2,544</td>
</tr>
<tr>
<td></td>
<td>11.3%</td>
<td>88.7%</td>
</tr>
<tr>
<td>High School or Advanced Diploma</td>
<td>17</td>
<td>173</td>
</tr>
<tr>
<td></td>
<td>8.9%</td>
<td>9.11%</td>
</tr>
<tr>
<td>Bachelors Degree</td>
<td>195</td>
<td>870</td>
</tr>
<tr>
<td></td>
<td>18.3%</td>
<td>81.7%</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>75</td>
<td>355</td>
</tr>
<tr>
<td></td>
<td>17.2%</td>
<td>82.8%</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>33.3%</td>
<td>66.7%</td>
</tr>
<tr>
<td>Total</td>
<td>613</td>
<td>3,946</td>
</tr>
<tr>
<td></td>
<td>13.4%</td>
<td>86.6%</td>
</tr>
</tbody>
</table>

The second stage of this analysis involved chi-square calculation for the distribution of these categories. This was performed at the same time as the cross-tabulation above. From a visual analysis of the cross-tabulation, it does appear that there is a significant difference in distribution. The chi-square analysis outcomes ($\chi^2 = 43.384, p = 0.000$) confirmed this visual analysis, indicating that there is a significant difference in the choice of certification based on educational levels. Thus, there is a difference in the choice of certification by educational level. However, this direction is not as proposed,
with high school or lower educated agents seeing the most advantage in achieving certification. Instead, it is the Bachelor degree group, at 18.3% of the total Bachelor holders also holding certifications, which is most likely to attain certification. Hypothesis 3a is **partially proved** and it can be accepted at the 5% significance level.

A discussion of why this is the case is particularly relevant to this research, since it identifies many of the problems with obtaining certification. An analysis of the literature suggested that those with lower levels of education would see the most gains from certification if certification acted as a signalling mechanism for human capital that was expressed outside the formal educational channels (Davidsson & Honig, 2003; Fitch, 2007; Han, Lin, & Chen, 2008; Paré & Tremblay, 2007; Woods, 2002). However, this was in fact not the case; instead, those with Bachelors degrees saw the highest uptake. This could be due to the observed diminishing returns to human capital observed from secondary education (Psacharopoulos & Patrinos, 2004; Wößmann, 2003). These diminishing returns indicate that the increase in income from achieving a high school diploma is significantly higher than the increase in achieving a Bachelors degree or further educational degree (Psacharopoulos & Patrinos, 2004; Wößmann, 2003). However, it is further education that is commonly associated with substantial increases in income (Psacharopoulos & Patrinos, 2004). This condition suggests that it could be those who achieve a Bachelors degree, and then find that their income does not increase as much as expected, who seek out further ways to increase their income, such as attaining certification. It is also likely that the completion of the Bachelors degree will better prepare the potential certificate holder for the rigor of the certification process. Furthermore, at least some certifications, such as the CFP, require the certificate holder
to hold a Bachelors degree or higher in any discipline prior to the certification (Certified Financial Planner Board of Standards, 2012). While this is not the case for all certifications, as evidenced by the fact that high school-educated agents do hold certifications, it could limit the opportunities for certification and reduce its attractiveness as a means of signalling skill or human capital.

To determine if this was the case, a further analysis was conducted comparing educational level to type of certification, as well as the attainment of multiple certifications. This cross-tabulation is shown in Table 10 (showing only the number of certificate holders for each of these areas and percentage of total in the educational level group). This analysis shows that Bachelor holders are most likely to hold CFP and LUTCF certifications, as well as most likely to hold multiple certifications. Given that these certifications are among the most educationally intensive certifications (Arman & Shackman, 2012), it is likely that the previous educational training of the individual influences the choice of the certification, if not the choice to engage in the certification. However, it is also notable that there are a number of CFP holders who do not have a Bachelors degree; it is possible that this rule was implemented following their certification or there were other issues involved. However, it is not certain that a signalling explanation is appropriate at the lower levels of the educational range in this case; instead, this may be a signalling mechanism employed by those in the middle of the range, who are noticing their loss of educational benefit.
Table 10. Cross-tabulation of certification type by educational level

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Certification Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CFP</td>
</tr>
<tr>
<td>Non-degree</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>2.1%</td>
</tr>
<tr>
<td>High School or</td>
<td></td>
</tr>
<tr>
<td>Advanced Diploma</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>3.7%</td>
</tr>
<tr>
<td>Bachelors</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>10.2%</td>
</tr>
<tr>
<td>Masters</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>6.1%</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>202</td>
</tr>
<tr>
<td></td>
<td>4.4%</td>
</tr>
</tbody>
</table>

5.2.3.5 Certificate Choice and Income (Hypothesis 3b)

Hypothesis 2b is a two-stage analysis testing the differences in income based on the type of certification held. It is presumed that certificates held by those that are higher earners will be more common than those that are lower earners. This analysis takes place in two stages. The first stage, involving counting the certification frequencies of the various certifications tracked by the company, is included in Table 5, above. In summary, the most frequently held certification is the LUTCF, followed by the CFP, FCHFP, RFC, and RFP. In order for hypothesis 3b to be proved, there would need to be a statistically significant difference between these variables, with the mean distribution of income being consistent with the popularity of the certificate choice. This was
determined using an ANOVA distribution among the full data set (n = 5,014), followed by LSD and Bonferroni testing to determine whether there was a significant difference between them. Within this analysis, there is a category for multiple certifications (n = 123), indicating the substantial portion of around 18% of the individuals that have attained two or more certifications. Table 11 shows the descriptive statistics obtained for this analysis, ranked by the mean income reported. This showed that the highest-paid certification was the RFC, followed by the FCHFP, multiple certifications, CFP, LUTCF, and RFP.

Table 11. Descriptive statistics for income (2011 total commissions) by certification type (Hypothesis 3b)

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFC</td>
<td>99</td>
<td>373 352.70</td>
<td>333 896.501</td>
</tr>
<tr>
<td>FCHFP</td>
<td>103</td>
<td>352 374.15</td>
<td>365 741.984</td>
</tr>
<tr>
<td>Multiple Certifications</td>
<td>123</td>
<td>340 556.16</td>
<td>240 076.743</td>
</tr>
<tr>
<td>CFP</td>
<td>167</td>
<td>306 938.90</td>
<td>199 388.547</td>
</tr>
<tr>
<td>LUTCF</td>
<td>118</td>
<td>272 299.88</td>
<td>155 962.888</td>
</tr>
<tr>
<td>RFP</td>
<td>57</td>
<td>191 820.87</td>
<td>204 954.279</td>
</tr>
<tr>
<td>Uncertified</td>
<td>4352</td>
<td>178 658.75</td>
<td>311 377.580</td>
</tr>
<tr>
<td>Total</td>
<td>5019</td>
<td>196 651.07</td>
<td>308 478.482</td>
</tr>
</tbody>
</table>

This question is not only about the difference in income from non-certification, but the relative ranking in popularity between groups. The ANOVA analysis indicated that there were significant differences in income between groups ($F = 21.999$, $p = 0.000$).

Post-hoc analysis using LSD and Bonferroni measures was also used to determine whether there was a distinct difference between groups. Table 12 shows the
categories where mean differences were found to be significant between groups.
Findings are reported on the basis of significance or p-value, where p < 0.05 indicates a
statistically significant difference in means between the groups. The top number is the
result of the LSD test, while the bottom number indicates the Bonferroni test. This
analysis shows that there are statistically significant differences between the uncertified
and all certification classes except RFP. The CFP class income is not statistically
different from the FCHFP, LUTCF, RFC, and multiple certifications. Similar results are
shown for the FCHFP class, though the LUTCF is statistically different from the RFC.
Thus, the CFP, FCHFP, LUTCF, and RFC categories, as well as the multiple
certification category, have approximately equal returns according to the certification
process. Thus, these certifications can be expected to be equal in their effects on income
(within a very broad standard deviation) and approximately equal in their choice within
the sample.

Table 12. Significance of differences in means between categories of certification

<table>
<thead>
<tr>
<th></th>
<th>CFP</th>
<th>FCHFP</th>
<th>LUTCF</th>
<th>RFC</th>
<th>RFP</th>
<th>Multiple</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertified</td>
<td>0.000</td>
<td>0.000</td>
<td>0.001</td>
<td>0.000</td>
<td>0.746</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.021)</td>
<td>(0.000)</td>
<td>(1.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>CFP</td>
<td></td>
<td>0.234</td>
<td>0.345</td>
<td>0.086</td>
<td>0.014</td>
<td>0.353</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.000)</td>
<td>(1.000)</td>
<td>(1.000)</td>
<td>(1.000)</td>
<td>(0.290)</td>
</tr>
<tr>
<td>FCHFP</td>
<td>0.051</td>
<td></td>
<td>0.625</td>
<td>0.001</td>
<td>0.772</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.000)</td>
<td></td>
<td>(1.000)</td>
<td>(0.030)</td>
<td>(1.000)</td>
<td></td>
</tr>
<tr>
<td>LUTCF</td>
<td></td>
<td>0.015</td>
<td></td>
<td>0.102</td>
<td>0.082</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.315)</td>
<td></td>
<td>(1.000)</td>
<td>(1.000)</td>
<td></td>
</tr>
<tr>
<td>RFC</td>
<td></td>
<td></td>
<td>0.000</td>
<td></td>
<td>0.425</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.007)</td>
<td></td>
<td>(1.000)</td>
<td></td>
</tr>
<tr>
<td>RFP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.049)</td>
<td></td>
</tr>
</tbody>
</table>
Note: Significances were calculated using both LSD and Bonferroni tests. Each number represents a p-value, with the top number indicating the p-value found by the LSD test and the bottom number indicating the p-value found by the Bonferroni test. Divergent significances by these two tests occurred in CFP/FCHCP, CFP/RFP, and LUTCF/RFC pairs, with a near-divergence in the FCHCP/LUTCF pairs.

All categories of certification resulted in higher incomes than the non-certified group. However, the RFP showed the least return, with only a relatively modest gain of $3,162.11 associated with the attainment of the certification. According to the analysis above, this group is statistically different from all other certification classes (substantially lower). This is also the least frequently chosen category (as shown in Table 13, which compares choice frequency to position in the mean earnings table). This comparison shows that the rankings between the RFC, FCHFP, CFP, LUTFC, and multiple certifications are inconsistent in terms of frequency (though this inconsistency is not necessarily statistically significant, just as with the income rankings for these categories). However, the RFP is the least popular certificate both in terms of its selection for certification and its effect on income. Furthermore, while there is substantial cross-certification between the FCHFP, RFC, CFP, and LUTCF, comparison between categories shows only one person has a multiple certification including an RFP. This does suggest that there is a difference in earnings based on the certification, and furthermore that certificate holders and potential certificate holders are aware of this difference, at least in regard to the RFP. Thus, hypothesis 3b is proved and it can be accepted at the 5% significance level.
Table 13. Comparison of popularity of certification and the effect on earnings

<table>
<thead>
<tr>
<th>Certification</th>
<th>Frequency (Position)</th>
<th>Positional Effect on Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFC</td>
<td>115 (5)</td>
<td>1</td>
</tr>
<tr>
<td>FCHFP</td>
<td>200 (3)</td>
<td>2</td>
</tr>
<tr>
<td>Multiple Certifications</td>
<td>123 (4)</td>
<td>3</td>
</tr>
<tr>
<td>CFP</td>
<td>203 (2)</td>
<td>4</td>
</tr>
<tr>
<td>LUTCF</td>
<td>227 (1)</td>
<td>5</td>
</tr>
<tr>
<td>RFP</td>
<td>58 (6)</td>
<td>6*</td>
</tr>
</tbody>
</table>

* Indicates a significant difference in mean incomes

Although these findings confirm Hypothesis 3b, they do so in an unexpected way. Rather than being able to identify the most valuable certification in terms of its effects on income, it appears that the agents involved in the study are able to identify the least valuable certification under these terms. This is significant because the RFP certification, which is also the least popular, had an effect on income that was not statistically significant. In effect, this means that the selection of this certification had no effect at all on the income of the individual. This probably accounts for why it was held by only 1.12% of the full sample, substantially lower than the other certifications. In contrast, there is no evidence that there is a significant difference in mean incomes between the other certification groups, and in fact the number of certifications between groups is very similar. This strongly suggests that while there may be some understandable confusion about the value of very similar certifications, there is no lack of awareness about which of these certifications do not pay.
The limited evidence regarding the relative value of certifications did have somewhat different findings. Arman and Shackman (2012) found that the CFP certification was the most highly valued certification in the personal financial planning profession, and that it was the only one in which there was a significant difference in earnings from no certification. However, this study was different from the current study in a number of ways. First, it was conducted in the United States, which has a different regulatory and legal environment as well as a different mechanism for remuneration of personal financial planners than that of Hong Kong (Arman & Shackman, 2012). In particular, American financial planners are routinely paid for the work of preparing a given plan, while Hong Kong financial planners earn money based primarily on commissions from sales of products. This could result in a different ranking of importance for these certifications. Additionally, Arman and Shackman (2012) compared a different set of certifications than those available in this survey. As the authors noted, there are dozens, if not hundreds, of financial planner certifications of varying degrees of perceived and actual value available worldwide (Arman & Shackman, 2012). This means that comparisons between different groups of certifications are likely to result in different rankings. Thus, it is not as important that the specific certifications be arranged in a manner different from those in Arman and Shackman’s (2012) research, since the current research reflects the differential value of some certifications as compared to others.

Overall, these findings support the basis of human capital theory and its approach to education and experience, which holds that individuals can choose to engage in further education such as certification in order to increase their earnings.
potential, and that they will do so in a way that they perceive to be most useful in increasing this earnings potential (Baron & Armstrong, 2007). This finding also provides strong support for understanding professional certification as a means of active investment in earnings potential, rather than a signalling mechanism or other attempt to improve the non-financial position of the individual. This is because it specifically demonstrates that participants seek to reduce the depreciation of their human capital by choosing certifications with higher levels of value, rather than lower levels of value (Arrazola & de Hevia, 2004). This is a personal training and development choice individuals make in order to increase their human capital within the organization (Bontis & Serenko, 2009). Of course, it is also highly likely that individuals form opinions based on supervisor feedback and external information about incomes, rather than in a vacuum (Bontis & Serenko, 2009). As such, the selection of certain certificates by high-earning financial planners could reinforce their relative desirability. Overall, however, it is clear that income is a determining factor (if not the sole determining factor, in the case of the undifferentiated certifications) in the choice of certification.

5.2.4 Regression Results

The regression analysis was intended to provide an answer to research question 1, which read, “Does professional certification of personal financial planning practitioners make a statistically significant difference in incentive-based income, based on a sample of practitioners in Hong Kong?” This research question was then formulated as Hypothesis 1, which read:
Practitioners who have obtained professional credentials have higher income than those who have not obtained professional credentials.

This hypothesis was tested using linear regression in six models, using the formula:

\[ L = \alpha + \beta_1 E + \beta_2 A + \beta_3 Y + \beta_4 Z + \beta_5 T + \beta_6 C + \epsilon \]  \hspace{1cm} (4)

where \( E \) is educational level, \( A \) is number of new business cases, \( Y \) is age, \( Z \) is age-squared, \( T \) is experience, and \( C \) is number of years certified. Six models were tested in the analysis, using the combination of variables presented in Table 2 (Section 4.3.3.1).

The outcomes of these regression models are shown in Table 14 (Regression Outcomes). This shows that after the complete model (Model 1), the most predictive model is Model 3 (including Business Cases). This accounts for most of the difference in outcomes. For Models 1 and 2, sample members with no listed educational level were excluded, resulting in a reduced data set (\( n = 4,559 \)), for reasons previously discussed in section 5.2.1.2. Briefly, a non-reporting rate of about 9.2% for this statistic made it difficult to make any correction for the non-reporting segment.
Table 14. Regression Results for Commission Income (Log Income)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>9.200**</td>
<td>11.131**</td>
<td>10.256**</td>
<td>10.155**</td>
<td>10.902**</td>
<td>11.331**</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Educational Level</td>
<td>0.088**</td>
<td>0.150**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Cases</td>
<td>0.039**</td>
<td></td>
<td>0.043**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td></td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.019**</td>
<td></td>
<td></td>
<td>0.033**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td></td>
<td></td>
<td>(0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experience</td>
<td>0.063**</td>
<td></td>
<td></td>
<td></td>
<td>0.120**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td>(0.000)</td>
<td></td>
</tr>
<tr>
<td>Years Certified</td>
<td>-0.039**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.149**</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.000)</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.557</td>
<td>0.013</td>
<td>0.469</td>
<td>0.052</td>
<td>0.177</td>
<td>0.043</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.556</td>
<td>0.013</td>
<td>0.469</td>
<td>0.052</td>
<td>0.177</td>
<td>0.043</td>
</tr>
<tr>
<td>No. Observations</td>
<td>4,559</td>
<td>4,559</td>
<td>5,019</td>
<td>5,019</td>
<td>5,019</td>
<td>5,019</td>
</tr>
</tbody>
</table>

Note: a The values in brackets are p-values. The asterisks *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

In addition to these initial models, a number of other models were defined that included some definition of the above. These were all variations on Model 1, and are shown in Table 15. However, there were no significant differences found between most of the models, and none had a higher R-squared than Model 1, suggesting that they did not improve the total explanatory value of the model. Only Model F, which included whether the individual was certified at all, along with all other variables available, had a slightly higher adjusted r-squared than Model 1, suggesting that the fact of certification had slightly more explanatory power than other variables. However, this was a very minor improvement.
Table 15. Modifications of the Model 1 regression including age-squared, gender, and years certified variables

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>6.920</td>
<td>6.979</td>
<td>7.075</td>
<td>7.034</td>
<td>6.923</td>
<td>6.918</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
</tr>
<tr>
<td>Educational Level</td>
<td>0.042</td>
<td>0.040</td>
<td>0.039</td>
<td>0.038</td>
<td>0.045</td>
<td>0.047</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
</tr>
<tr>
<td>Business Cases</td>
<td>0.039</td>
<td>0.039</td>
<td>0.039</td>
<td>0.038</td>
<td>0.038</td>
<td>0.038</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
</tr>
<tr>
<td>Age</td>
<td>0.150</td>
<td>0.147</td>
<td>0.146</td>
<td>0.136</td>
<td>0.137</td>
<td>0.136</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
</tr>
<tr>
<td>Age-squared</td>
<td>-0.002</td>
<td>-0.002</td>
<td>-0.002</td>
<td>-0.001</td>
<td>-0.001</td>
<td>-0.001</td>
</tr>
<tr>
<td></td>
<td>0.000***</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
</tr>
<tr>
<td>Experience</td>
<td>0.054</td>
<td>0.046</td>
<td>0.047</td>
<td>0.049</td>
<td>0.047</td>
<td>0.055</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
<td>0.000**</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.162</td>
<td>0.169</td>
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<tr>
<td></td>
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<td></td>
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<td></td>
<td>0.000**</td>
<td>0.000**</td>
</tr>
<tr>
<td>Years Certified</td>
<td>-0.039</td>
<td></td>
<td></td>
<td></td>
<td>0.171</td>
<td>-0.077</td>
</tr>
<tr>
<td></td>
<td>0.000**</td>
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<td></td>
<td></td>
<td>0.000**</td>
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</tr>
<tr>
<td>Was certified</td>
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<td></td>
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<td></td>
<td>0.293</td>
</tr>
<tr>
<td>R-squared</td>
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<td>0.552</td>
<td>0.554</td>
<td>0.556</td>
<td>0.559</td>
</tr>
<tr>
<td>Adjusted R-</td>
<td>0.554</td>
<td>0.552</td>
<td>0.551</td>
<td>0.554</td>
<td>0.555</td>
<td>0.558</td>
</tr>
<tr>
<td>squared</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. Observations</td>
<td>5,019</td>
<td>5,019</td>
<td>5,019</td>
<td>5,019</td>
<td>5,019</td>
<td>5,019</td>
</tr>
</tbody>
</table>

Note: The asterisks *, ** and *** denote significance at the 10%, 5% and 1% level, respectively.

The analysis of linear regression shown in this section indicates that all identified variables do have effects on earnings, although some of these influences are stronger than others. Referring to table 14, the full model (test A) shows that effects in order of strength are educational level, experience, business cases, age, and years certified (a slight negative effect). In the individual models, the effects can be ranked as educational level, years certified, experience, business cases, and age. Table 15 includes age squared (Z) as a factor. The Model A ranking for this test is age, experience, educational level,
business cases, years certified, and age squared. The strength of experience is consistent across the model. The number of years of certification does have an effect on earnings consistently across the models tested, although it does not explain as much variance as other factors. Thus, Hypothesis 1 can be accepted, with the caveat that the number of years experience is not the main factor in the earnings equation.

These results are primarily explainable using the foundations of human capital theory. The basis of human capital theory is that human productivity (and by extension income and earnings, especially in commission-based jobs) is driven by investment in human capital, such as health and education, and by experience (Becker, 1964; Becker, 1967). In this research, human capital was defined as a combination of education and experience, following a number of other authors (Baron & Armstrong, 2007; Barrett & Maxwell, 2005; Cuesta & Salverda, 2009; McMahon, 2002; Psacharopoulos & Patrinos, 2004; Todaro & Smith, 2008).

An extension of this theory was that certification would serve as one of the components of human capital, as it represents a signifier of education in the same way that degrees do. This allowed for the use of Mincer’s (1958; 1970; 1976) models for human capital by integrating the number of years of experience of certification into a regression model. This did not result in a strong relationship between income earnings and years since certification. However, further analysis that compared certification holders and non-certified salespeople showed a substantial difference in earnings. Thus, it is not clear that certification acts like experience in the human capital model; instead, it may be much more like achievement of an educational degree, which is a signifier of educational achievement but which does not necessarily increase returns over time. This
is still part of the human capital model, but it is not a part of the human capital model in the way that was anticipated during formation of the research.

There are also other potential reasons for the relative weakness of this relationship compared to other factors. One of the reasons could be in the variety of certifications that were included within the analysis (at least five certifications were included). However, previous research has shown that while the Certified Financial Planner (CFP) certification does have a positive effect on earnings, this is not the case for all certifications, many of which have no effect on income (Arman & Shackman, 2012). Thus, it is possible that the quality of certification needs to be considered as well. Overall, however, the findings were consistent with other studies on the influence of certification on future earnings.

5.3 Concluding Remarks

This chapter has presented the empirical analysis of the findings. In regard to the primary research question, there was a relationship identified between certification and income level, although this relationship can be better qualified as an educational construct (providing only a one-time increase) rather than an experience construct (providing accumulating increases). Additionally, factors including age, educational level, experience, certification, and years of certification were found to have statistical relationships to earnings. Age, industry experience, and years of certification were found to have a relatively weak relationship, although further analysis showed that experience was more important for sales-only (junior) positions than it was for financial planner positions.
(senior) positions. The gender analysis found that female planners had higher incomes than male planners, an outcome that could not be explained by differences in education, experience, certification, or by reference to literature. It is likely that this can be explained by reference to the structure and history of the financial planning industry in Hong Kong, which has largely been female-dominated in the sales ranks. In particular, it may be that financial planning is viewed as a female role in the workplace, leading to more senior female financial planners and perhaps even a preference for female financial planners in the customer base. However, this information is not available within formal histories of financial planning in Hong Kong, and represents an area that would require more detailed organisational analysis to determine for certain.

Formal educational level was also found to be a difference, with earnings peaking at the Master’s level. Certification was found to almost double commission incomes. Finally, the research found that there was a relationship between the choice of certification and educational level, with the most common educational level electing to undergo certification being the Bachelor’s level. This is likely due to several factors, including certification requirements for previous education at the Bachelor’s level and a mismatch between expectations for income and lowered returns as compared to average. Furthermore, the findings indicated that while the certifications with higher income returns were fairly consistent in their adoption, the RFP certification was both the least popular and had the least effect on earnings. In fact, the difference in earnings from this certification was not statistically significantly different from not holding any certification. This suggests that agents may not know directly which certification has the
highest earnings, but they do know which one has the lowest earnings, and this one should be avoided.
Chapter 6  Summary, Conclusion, and Policy Implications of Findings

This chapter serves to summarise the key findings of the study, draw some conclusions, and highlight some policy implications of the findings for managerial decision-making in financial institutions and government settings. Finally, we offer some suggestions for future research.

6.1 Summary of Key Findings

The first research objective and hypothesis addressed the effect of professional credentials on the income of financial planning practitioners in Hong Kong. This relationship was tested using a number of regression models that featured certification along with demographic factors. This test did find a significant difference in income between certification (including years certified), and further testing did show a significant difference in means between certification and income. Thus, hypothesis 1 was proved and objective 1 was fulfilled. Professional credentials do increase the income of financial planning practitioners, at least in this institution.

It was also recognized that demographic variables were likely to have an effect on earnings of financial planning practitioners (Objective 2 and Hypothesis 2). Variables that were tested for this effect included age (H2a), gender (H2b), years experience in the financial industry (H2c), number of years certified (H2d), formal educational level (H2e), and simply holding a certification at all (H2f). These hypotheses were tested using a variety of statistical approaches. H2a, H2c, and H2d were tested using correlation; H2b and H2d were tested using an independent t-test for difference in
means; and H2f was tested using an ANOVA test. All of these tests showed that there were significant differences in earnings based on these outcomes. Thus, these hypotheses were proved.

In the third objective, the intention of certificate holders was explored. To test this, the potential relationship between certification and formal income (H3a) and the importance of choice of specific certification (H3b) were tested. Testing of H3a using a chi-square test did reveal a significant difference in the distribution of certification based on educational level. However, it was not in the direction supposed. Instead, Bachelor holders were most likely to be certified, followed by Master holders, then non-degree holders and High School degree holders. The researcher suggests that while the certification might signal certain elements of formal education, the certification process also requires certain personal skills that may not be available to less-educated people. Thus, H3a was partially proved – while there was a difference in distribution, it was not in the direction suggested by her research. However, H3b, tested by an independent t-test for difference in means, did show that certified employees did earn more than non-certified employees regardless of the length of certification. Thus, H3b was proved.

For some analyses, further statistical studies were conducted to determine what other effects could be occurring. However, not all variants could be explained. Gender analysis showed that women had higher earnings than men, contrary to expectations. These results could not be explained by differences in education, experience, or certification, however. Men had slightly higher levels of education on average than women, while industry experience and certification rates were largely the same. Thus, why women had higher rates of income could not be explained. Industry experience was
shown to be significantly stronger for sales-only employees, who are lower in the organisational hierarchy, than for financial planners. This is contrary to the expected findings of increased returns from experience for higher-ranked workers. However, this could be explained by the mandatory five years of experience for financial planners. Overall, results do show that financial planning certification does have an effect on income, with certified staff having almost double the mean commission income compared to non-certified staff. However, this has a relatively weak predictive capability, especially compared to business cases (which have a direct impact on commission income). The analysis for research question 3b was also extended in order to determine how the influence of potential income might affect certification. This found that four of the certifications (including the CFP, LUTCF, FCHFP, and RFC) were statistically indistinguishable from each other and from holders of multiple certifications and were statistically significantly higher than non-certificated agent incomes, but that the RFP – the least popular certification – was statistically significantly lower than all of these four, and indistinguishable from incomes of non-certificated agents. This strongly suggests that while there are other distinguishing factors between some certifications, the RFP at least is least popular because it entails the least increase in benefits.

6.2 Conclusions

Overall, the results indicate that certification does represent a form of human capital, and that there is a relationship between the achievement of certification and improvement in earnings for the individual participant. However, what is not as clear is
the amount of certification experience (or the number of years that someone has held a certification) and its relationship to earnings. This relationship was weak in the analysis, but the independent t-test between certified and non-certified groups showed a much stronger difference. Under these conditions, it is possible that the main aspect of certification that should be considered is that the candidate is certified, not that he or she has been certified for so many years. In other words, the certification acts as a substitute qualification along the lines of an educational qualification, rather than as an indicator of experience or skill. Thus, under a human capital theory model, the professional certification (at least within this group of professional workers) should be considered part of the formal educational stock of the worker, rather than a post-education qualification or experience.

Similarly, it is possible that certification has relatively weak returns because employers and customers are not yet accustomed to understanding professional certification as an indicator of increased educational capital, and thus the total rewards seen from this capital are not realised. This is not an issue that was examined in this study, but it could be a factor that could be identified in future research. Of course, it is also a significant possibility that at least some of these certifications do not deliver on their promise of improved skill and knowledge. This would be consistent with the findings of previous research that suggested differences in returns for various certifications.

The findings do provide a clear answer to the first research question. The attainment of certification does make a difference in the income of financial planners in Hong Kong, almost doubling the mean income compared to non-certified professionals.
That this does not have a strong predictive effect could be due to other factors, such as the predominant importance of new business cases as compared to all other factors. Furthermore, demographics and human capital factors, the subject of the second research question, were found to be statistically relevant, though not necessarily in the ways expected. The variance in gender differences is particularly important, given that Hong Kong’s findings are directly contrary to findings in Western countries. This is an important difference between the Hong Kong and other large financial centres that should be studied in more detail.

These findings do strongly suggest that agents select the certification they undertake based on its perceived increase in income. In particular, the RFP certification, which was the least popular certification, was also the certification that had the least effect on income. All other certifications had much stronger effects on income, indicating an increased potential for income in all cases and in some cases doubling or more than doubling the income. The effects of the certification were so strong that non-certificated incomes were actually below average for the full sample, despite the preponderance (88%) of non-certificated agents. This strongly suggests that despite the modest correlations found above in the demographic results, there are strong effects from certification on the individual income. Who elects to undertake the certification process was also an interesting finding of this research. In particular, it was found that Bachelor holders were most likely to undertake the certification. Some of this is likely explained by the requirement for a Bachelors degree or higher for some certifications; however, it is also suggestive that Bachelor holders are comfortable with the advanced training required and do not mind making the investment in further education that the
voluntary certificate represents. This strongly suggests that those who get the most out of certification are those who are already invested in human capital and are aware of the meaning and potential for education to improve their incomes, or those who are unsatisfied with their current returns in human capital investment. These findings also demonstrate that there is a strong likelihood that individuals do act based on their perceived interests in investing in a voluntary professional certification. This fact can be used to improve the certification process within the organisation.

6.3 Managerial Implications of the Empirical Findings

The third research question relates to the managerial implications of the empirical findings. The results of this study offer a clear implication for the insurance firm that the findings were taken from. The increased earnings associated with certification clearly indicate that certification either improves the performance of salespeople in the first place or is an indicator of strong performance on the part of workers. In either case, it would be appropriate for the firm to consider certification as an approach to further education in order to improve the firm’s human capital stocks.

The use of certification as an outside training program, however, should be carefully considered in terms of what certifications actually offer value. The evidence from the literature review suggests that the Certified Financial Planner (CFP) certification has a significantly higher value than other certifications. Thus, the firm should consider introducing a training program that encourages the achievement of CFP for its sales and financial planning staff. This should also be considered by other similar
firms as a way of improving the effectiveness of their sales forces. A further policy implication of this research is that the findings of studies in Western countries will not necessarily apply to Hong Kong. Thus, the companies implementing programs should consider undertaking their own effectiveness testing to determine what effects certification will have.

6.4 Policy implications of the empirical findings

The final question of this study is the policy implications of the empirical findings. In other words, from a government policy perspective, do the empirical findings warrant the need for the Hong Kong government to implement a policy aimed at regulating the financial sector? The empirical evidence provided in this study suggests that this is not the case. Currently, agents select certification based, at least in part, on the potential for increased income. By requiring certifications, this raises the potential that the firm could increase the “white noise” associated with certification types, thus muddying the individual investment decision. This could result in lower quality of returns to certification; since the firm’s commissions represent a portion of its sales, it is clear that motivated certified agents are more beneficial for the firm than unmotivated agents. For example, lower difficulty levels involved in the RFP could lead to a higher rate of RFP certifications, which will not have an effect on either agent income or firm revenues. A better choice may be to encourage certification through the training and development program, and remove barriers to certification (for example, by reimbursing agents for the certification course costs on successful completion). This
would reduce the risk associated with certification and encourage more motivated agents to engage in the certification process, while not diluting the value of the certification for individuals or the firm.

### 6.5 Limitations of the Research

The researcher has attempted to eliminate method-based limitations of the research, but a few such limitations do remain. First, the study is cross-sectional, which could limit the time the results are applicable. It is also specific to one organisation in Hong Kong, meaning that geographic and institutional constraints could apply. In particular, there could be undetected organisational cultural issues that influence the outcomes. The type of inquiry that could be performed was limited based on the information in the source data set. For example, it was not possible to conduct a full educational inequality analysis, or control for the effects of part-time work. Social and cultural motivations also could not be examined. Despite these methodological weaknesses, the general plan of the research is similar to other studies used to examine earnings, suggesting that it is sufficient for these purposes (Le, Gibson, & Oxley, 2003).

### 6.6 Suggestions for Future Research

This study has examined the impact of financial planning certification on earnings in the Hong Kong financial services industry using one financial institution as a case study. Future research should extend this analysis to other financial institutions in Hong
Kong, or outside Hong Kong entirely. Another important aspect of financial planning
not explored is customer perception about financial planners’ certification. This finding
may highlight the importance of financial planning certification in Hong Kong and
provide credence as to whether there is the need for regulation or self-regulation in the
Hong Kong financial services industry.
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