HUMAN CAPITAL DEVELOPMENT AND LABOUR PRODUCTIVITY WITH SPECIAL REFERENCE TO KERALA

Thesis submitted to the
UNIVERSITY OF CALICUT
in partial fulfillment for the requirements
for the award of the degree *of*

Doctor of Philosophy in Economics

By

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(U.O. No. 7459/2015Admn dated 13.07.2015)

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This is to certify that the thesis entitled "**Human Capital Development and Labour Productivity with Special Reference To Kerala**" is a research work carried out by **Ms. Sumitha.K.**, Research Scholar, P. G. & Research Department of Economics under the supervision and guidance of **Dr. M G Mallika**, Research Guide of Economics of this College during the period of 2015 - 2023.

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DECLARATION

I hereby declare that the thesis entitled "**Human Capital Development and Labour Productivity with Special Reference to Kerala**" is a bonafide record of research work carried out by me at P.G. & Research Department of Economics, The Zamorin's Guruvayurappan College, Kozhikode, under the guidance of **Dr. M G Mallika**, and no part of this thesis has been previously presented or submitted elsewhere for the award of any degree or diploma or similar title to this or any other University

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Sumitha.K

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Abstract

This study investigates the impact of human capital development, specifically focusing on education and health, on employment preferences and labor productivity (earnings) among workers in Kerala, India. Utilizing both secondary data from the India Human Development Survey (IHDS) 2011-12 and primary data collected from Feroke Municipality, the research employs various statistical tools such as the Mincer earnings function, multinomial logistic regression, and Kruskal-Wallis test. The analysis reveals that higher education levels increase the likelihood of salaried employment and lead to better earnings for both regular and self-employed workers. However, casual laborers show minimal earnings improvement with education. Gender disparities in pay are significant across employment sectors, with men consistently earning more than women at all educational levels. Socio-economic status, particularly parental education and family income, significantly influences the educational attainment and health of individuals, which in turn affects their productivity. Caste and employment sector also play critical roles in shaping earnings, with lower castes and casual workers facing notable disadvantages. The study concludes that targeted policy interventions are necessary to address gender pay gaps, improve private sector employment conditions, and promote equitable access to education and opportunities across caste groups.

Keywords: Human capital, labour productivity, level of education, health status, socio-economic status.

മനുഷ്യ മൂലധന വികസനവും തൊഴിലാളിയുടെ ഉൽപാദനക്ഷമതയും: കേരളത്തെ അവലംബമാക്കി പഠനം

സംഗ്രഹം

മനുഷ്യ മൂലധനം എന്നത് തൊഴിലാളിയിലെ നിപുണതകളെയും കഴിവുകളെയും സൂചിപ്പിക്കുന്ന ആധുനിക സാമ്പത്തിക വിദഗ്ധർ വിദ്യാഭ്യാസവും ആരോഗ്യ പരിചരണവും മനുഷ്യ മൂലധനം മെച്ചപ്പെടുത്തുന്നതിനും അതിലൂടെ ഒരു രാജ്യത്തിന്റെ സാമ്പത്തിക ഉത്പന്നം വർദ്ധിപ്പിക്കുന്നതിനും അനിവാര്യമാണെന്ന് വാദി ക്കുന്നു. കേരളത്തിൽ വിദ്യാഭ്യാസത്തിലും ആരോഗ്യ പരിചരണത്തിനുമുള്ള ഉന്നതനേട്ടങ്ങൾ മറ്റ സംസ്ഥാനങ്ങൾക്ക് മാതൃകയായി നിലനിൽക്കുന്നു. സാമൂഹികവും വിദ്യാഭ്യാസപരവുമായ പുരോഗതിയിൽ കേരളം പല പശ്ചാത്യ രാജ്യങ്ങളുമായും താരതമ്യപ്പെടുത്താവുന്ന നിലയിലേക്ക് ഉയർന്നിട്ടുണ്ട്. ഇന്ത്യയിലെ സംസ്ഥാനങ്ങളിൽ മനുഷ്യമൂലധനവികസനത്തിൽ കേരളം ഒന്നാം സ്ഥാനത്തിലാണ്. അതിനാൽ, പ്രസ്തുത പഠനം 2011-12 ലെ ഇന്ത്യയുടെ മനുഷ്യ വികസന സർവ്വേ (IHDS) യിലെ ഡാറ്റയും 2019-20ലെ ഫറോക്ക് മുനിസിപ്പാലിറ്റിയിലെ തൊഴിൽ ചെയ്യുന്നവരിൽ നിന്നും സമാഹരിച്ച പ്രാഥമിക ഡാറ്റ ഉപയോഗിച്ച്, മനുഷ്യമൂലധനത്തിന്റെ പ്രധാന ഘടകമായ വിദ്യാഭ്യാസവും ആരോഗ്യവും കേരളത്തിലെ തൊഴിലാളികളുടെ തൊഴിൽതരത്തെയും ഉൽപാദനക്ഷമതയെയും (വരുമാനം) എങ്ങനെ സ്വാധീനിക്കുന്നു എന്ന് വിശകലനം ചെയ്യുന്നു. കേരളത്തിലെ തൊഴിലാളികളുടെ ജോലി തരം തിരഞ്ഞെടുക്കുന്നതിന് സ്വാധീനിക്കുന്ന,പ്രധാന ഘടകങ്ങളാണ് വിദ്യാഭ്യാസത്തിന്റെ നില, ലിംഗം, മതം എന്നിവയാണെന്ന് പഠനത്തിലൂടെ കണ്ടെത്തി. രണ്ടാമതായി,മാനവ മൂലധനത്തിന്റെ സ്വാധീനം കേരളത്തിലെ തൊഴിലാളികളുടെ ഉത്പാദന ക്ഷമതയെ എങ്ങനെ ബാധിക്കുന്നു എന്നതിന്റെ വിശകലനം, മിൻസർ സിദ്ധാന്തം ഉപയോഗിച്ച് നടത്തി. പഠനത്തിന്റെ പ്രധാന കണ്ടെത്തലുകൾ ആണ് വിദ്യാഭ്യാസത്തിന്റെ തോതുകൾ, സ്ഥിരമായ/ശമ്പള തൊഴിലാളികളുടെ വരുമാനം വർദ്ധിക്കുന്നു എന്നത്. എന്നാൽ ,ഇത് കാഷ്വൽ തൊഴിലാളികളുടെ വരുമാന വ്യത്യാസം കാര്യമായ വ്യത്യാസങ്ങൾ ഒന്നും വരുത്തുന്നില്ല. കേരളത്തിൽ, ജാതിവ്യത്യാസങ്ങൾ ശമ്പളത്തിൽ ഇപ്പോഴും നിലനിൽക്കുന്നു. ഒരേ വിദ്യാഭ്യാസ നിലയുള്ള സ്ത്രീകളെയും പുരുഷന്മാരെയും എടുക്കുമ്പോൾ പഠനം കാണിക്കുന്നത് പുരുഷന്മാർക്കാണ് കൂടുതൽ ശമ്പളം ലഭിക്കുന്നത് എന്നതാണ്, എല്ലാ മേഖലയിലും ഈ വ്യത്യാസം കാണിക്കുന്നുണ്ട്. ഉയർന്ന വിദ്യാഭ്യാസം നേടിയ സ്വയം തൊഴിലാളികളായ സ്ത്രീകൾ, സ്വയം തൊഴിലാളികളായ പുരുഷന്മാരെ അപേക്ഷിച്ച് കൂടുതലാണ് വരുമാനം സമ്പാദിക്കുന്നത്. പ്രാഥമിക വിദ്യാഭ്യാസമുള്ള കാഷ്യൽ തൊഴിലാളികൾ/(പുരുഷനും സ്ത്രീയും) പ്രാഥമിക വിദ്യാഭ്യാസം നേടിയ സ്ഥിരമായ ശമ്പളവിതരണ തൊഴിലാളികളേക്കാൾ കൂടുതൽ വരുമാനം നേടുന്നു. സ്ഥിരമായ ശമ്പള വിതരണ തൊഴിലാളികളിൽ,ജനറൽ വിഭാഗക്കാർക്ക് എസ് എസ് /എസ് ടി സമുദായത്തെക്കാൾ കൂടുതൽ വരുമാനമാണ് നേടുന്നത്. സ്വയം തൊഴിലാളിയായ പൊതു വിഭാഗക്കാർ,ഒബിസി, എസ് എസ് /എസ് ടി വിഭാഗങ്ങളേക്കാൾ കൂടുതൽ സമ്പാദിക്കുന്നു. കാഷ്യൽ തൊഴിലാളികളുടെ ഇടയിൽ വലിയ സാമൂഹിക വ്യത്യാസങ്ങൾ കാണപ്പെടുന്നില്ല. സ്വകാര്യമേഖലയിലെ തൊഴിലാളികളേക്കാൾ കൂടുതൽ വരുമാനം സർക്കാർ മേഖലയിൽ ജോലി ചെയ്യുന്നവർക്ക് ലഭിക്കുന്നു. തൊഴിൽ മേഖലയിൽ വ്യത്യാസമില്ലാതെ, ജാതി ശമ്പള വ്യത്യാസം

കാണപ്പെടുന്നു. എന്നാൽ, ഈ വ്യത്യാസം സ്വകാര്യ മേഖലയിലാണ് കൂടുതലായുള്ളത്. പഠനത്തിൽ, അച്ഛന്റെ വിദ്യാഭ്യാസം അമ്മയുടെ വിദ്യാഭ്യാസം കുടുംബത്തിന്റെ വരുമാനനില എന്നിവ അവരുടെ കുട്ടികളുടെ മാനവ മൂലധന വികസനത്തെ നിർണായകമായി സ്വാധീനിക്കുന്നു എന്നു കണ്ടെത്തി. ഫറോക്ക് മുൻസിപ്പാലിറ്റിയിലെ തൊഴിലാളികളുടെ ഉൽപാദനക്ഷമത വിശകലനം ചെയ്തപ്പോൾ, വിദ്യാഭ്യാസത്തിന്റെ നില, അനുഭവം, ലിംഗം, തൊഴിൽമേഖല എന്നിവ വരുമാനത്തെ സ്വാധീനിക്കുന്ന പ്രധാന ഘടകങ്ങളായി കണ്ടെത്തുന്നു. സാമൂഹ്യ- ആസ്തി ഘടകങ്ങളിൽ, അച്ഛന്റെ വിദ്യാഭ്യാസ തരം, അവരുടെ കുട്ടികളുടെ വരുമാനം നിർണ്ണയിക്കുന്ന ഒരു പ്രധാന ഘടകമാണെന്ന് കണ്ടെത്തി. പഠനത്തിൽ നിന്നുള്ള നിഗമനം വിദ്യാഭ്യാസം, ലിംഗം, ജാതി, തൊഴിൽ മേഖല എന്നിവ വരുമാനത്തിന്റെ നിർണായക ഘടകങ്ങളായി നിലനിൽക്കുന്നു. കൂടാതെ, ഉയർന്ന വിദ്യാഭ്യാസ നിലവാരങ്ങൾ സാധാരണയായി മെച്ചപ്പെട്ട തൊഴിൽ അവസരങ്ങൾക്കും വർദ്ധിത വരുമാനത്തിനും വഴിയൊരുക്കുന്നു.

പ്രധാന വാക്കുകൾ: മനുഷ്യ മൂലധനം, തൊഴിൽ ഉൽപ്പാദനക്ഷമത, വിദ്യാഭ്യാസ നിലവാരം, ആരോഗ്യ നില, സാമൂഹിക-സാമ്പത്തിക നില.

CHAPTER 1

INTRODUCTION

1.1. Introduction.

Modern economists argue that a country's natural resources play a crucial role in its economic development. Nations rich in natural resources often have the potential to develop more quickly than those lacking such resources. However, without effective management and utilization, these resources may become depleted over time. To maximize their value, countries require a well-trained and educated workforce capable of leveraging these resources efficiently. Economic development, or the productive capacity of a nation, relies not only on physical capital such as natural resources, foreign aid, and international trade but also heavily on the education and training of its labor force. An educated workforce, equipped with skills and creativity, can significantly contribute to a country's growth. As a result, developing nations prioritize investments in education and healthcare sectors to foster human capital. These investments—spanning education, health, talent, and skills development—are referred to as human capital investments. While the concept of human capital is not new, it gained prominence in economic discussions in the late 20th century.

Today, human capital is a widely discussed concept with various interpretations. The term "capital," which originates from the Latin word for "head," can have multiple meanings. Human capital is defined by Merriam-Webster (2018) as "the population as a source of national wealth." In economics, capital is considered a factor of production that expands a society's productive capacity. A human being can be seen as a capital asset, generating a continuous stream of economic benefits throughout their working life. Unlike physical assets, human capital cannot be bought or sold but can be acquired through self-investment. Investments in human capital include all efforts aimed at enhancing human

resources. Expenditures on human resources and development are increasingly seen as processes that contribute to and improve the quality inherent in people.

Human capital refers to the skills and abilities possessed by the labor force, which are considered valuable resources or assets. Investing in human capital involves investing in people, such as through their education, training, and healthcare. These investments enhance individual productivity, as noted by Goldin (2014). Contemporary economists widely acknowledge that education and healthcare are critical for improving human capital and, consequently, boosting a nation's economic output (Becker, 1993). By investing in individuals, their economic productivity is increased. In countries with a surplus of labor, this abundant workforce can be transformed into human capital through targeted investments in education and health. Therefore, education and healthcare are vital to a nation's human capital development.

Education is considered a form of capital good closely linked to the concept of human capital. It plays a crucial role in developing skills and is a significant factor in productive activities. It is widely recognized that education contributes to the creation of higher-quality citizens and helps elevate the overall standard of living in society. As an agent of change, education has driven substantial investments in many developing countries. Health is another essential form of human capital, serving as a foundational element for building other types of human capital. According to the envelope theorem, improvements in health enhance income by making human capital more productive, rather than through additional investment. This suggests that lifetime earnings increase because good health in childhood enables faster learning and stronger development throughout life.

Kerala has an outstanding track record in education and healthcare, serving as a model for other Indian states. It has achieved levels of social and educational development comparable to those in many Western countries. Kerala ranks first in human capital development among Indian states (Mehra and Dogga et al., 2022). Therefore, the present study seeks to analyze how education and health key components of human capital affect the type of employment and productivity

(earnings) of workers in Kerala, using data from the India Human Development Survey (IHDS) 2011-12 and the primary data collected from employed youth from Feroke municipality during 2019-20.

1.2. Context of the Study

There are only a few studies that specifically analyze the impact of human capital development on labor productivity in Kerala. However, at both national and international levels, numerous studies have explored the relationship between human capital development and workers' earnings (labor productivity). For instance, Ali and Jalal (2018) investigated the connection between higher education and employment, specifically examining how higher education predicts employment prospects for students. Yahong and Khan (2021) explored the relationship between educational attainment and health status and their impact on an individual's likelihood of being employed in China. Sharma (2016) empirically tested the link between educational qualifications and employment status among Indian workers. Kerala, however, is particularly known for its high rate of educated unemployment, which has been the focus of many studies. In 1995, Mathews examined the relationship between education and employment preferences in Kerala, noting that these trends might evolve over time. Therefore, this study aims to analyze how human capital influences workers' preferences for different types of employment in Kerala. Therefore, this study aims to analyze how human capital influences workers' preferences for different types of employment in Kerala.

Several studies have explored the impact of human capital on earnings and labor productivity, both nationally and internationally. For instance, Simphambe (1999) conducted a study on the private rates of return to education in Botswana using household income and expenditure survey data, applying the Mincer earnings function. Agarwal (2011) attempted to estimate the recent private rate of return to education for households in India. Ghatak and Madheswaran (2009-10) demonstrated a positive relationship between health and earnings. Similarly, Forbes and Barker et al. (2010) analyzed the influence of education and health on wages in Australia using a wage model based on Mincer (1974). Bhandari and Bordoloi

(2006) estimated income differentials based on gender, caste, language, and the rate of return to education in India. Many of these studies highlight the significance of human capital, such as education and health, in relation to earnings or productivity, showing positive employment outcomes and earnings. However, some Indian studies present contrasting findings. For example, Duraisamy (2002) found that returns to education increase up to the secondary level but decline afterward among wage employees. Bhattacharya and Sato (2017) estimated regional returns to education in India from 1983 to 2010, showing that the returns (earnings) from primary education are significantly higher compared to other levels of education. In Kerala, Raj and Duraisamy (2008) explored the role of human capital in determining labor productivity and earnings within the unorganized coir yarn manufacturing sector. Their research demonstrated a positive correlation between education and earnings; however, it was limited to workers within the coir yarn industry. In contrast, our study broadens the scope by including all categories of workers—regular salaried employees, self-employed individuals, and casual laborers—and provides a distinct earnings analysis for each employment type. To date, no studies in Kerala have specifically examined the influence of human capital development on the productivity of these diverse groups of workers. Thus, this research seeks to address and fill these gaps in the existing literature.

Soytaş (2016) examined the relationship between parents' monetary and time investments in their children's early human capital development and the children's outcomes in adulthood. Brown (2006) empirically analyzed the effect of parental education on investments in children's human capital in rural China. Jencks et al. (1972) studied how family background, occupational status, and income impact the educational attainment of children in America. Dutta (2014) explored the effects of parental education and household wealth on children's educational outcomes across various Indian states. Similarly, Shukul (2007) conducted a study in India to observe the goals families set for their children's education, the practices they use to facilitate learning, and the expenditures incurred on education. These studies collectively highlight the significance of socioeconomic factors such as parental education, occupation, and family income in shaping investments in children's human capital

development. However, in the context of Kerala, there has been no specific research analyzing the influence of socioeconomic status on the human capital development of workers. This study aims to address this gap in the existing literature.

1.3. Statement of the Problem

Today, Kerala stands as one of the wealthiest states in India and is well-positioned to achieve living standards comparable to developed countries in the near future. A significant factor in this transformation has been the high levels of social expenditure on general education and public health by state governments over the decades (Thomas, 2021). In Kerala, a critical question arises: Is human capital development more influenced by the socio-economic status of families or by government spending on education and healthcare? Education plays a vital role in enhancing knowledge and skills, shaping personality and attitudes, and significantly influencing employment opportunities and job preferences. Notably, job preferences differ considerably between educated and uneducated individuals. This raises the question of whether human capital development is a factor behind these varying job preferences and whether the socioeconomic status of a family affects an individual's employment choices. Human capital is a key driver of workforce participation and labor productivity. In the context of Kerala, it is crucial to explore whether education as a proxy for investment in human capital, is a significant predictor of labor productivity and whether the socio-economic status of a family also plays a role in influencing labor productivity. Understanding these factors is vital not only from an individual perspective but also for understanding their broader impact on the state's economic output and growth. This context necessitates a study examining the relationship between socio-economic status and human capital development and how human capital development impacts employment and earnings (labor productivity) in Kerala. The study will address the following research questions.

1.4. Research Questions

- How does human capital development affect the employment preferences of workers in Kerala?

- To what extent does human capital development impact the productivity (earnings) of workers in Kerala?
- Does the socio-economic status during childhood influence an individual's human capital development, specifically in terms of education and health?
- How does the socio-economic status of a family affect the productivity (earnings) of its workers?

1.5. Objectives of the Study

1. To analyze the impact of human capital development on employment preferences among workers in Kerala.
2. To analyze the effect of human capital development on the productivity (earnings) of workers in Kerala.
3. To evaluate the combined influence of human capital development and the socioeconomic status of families on the productivity of workers in Feroke Municipality.

1.6. Hypotheses of the Study

1. H_0: There is no significant influence of human capital development on the type of employment preference of the workers in Kerala.

2. H_0: There is no significant effect of human capital development (years of schooling) on the labour productivity (earnings) of the salaried workers in Kerala.

3. H_0: There is no significant effect of human capital development (years of schooling) on the labour productivity (earnings) of the self-employed workers in Kerala.

4. H_0: There is no significant effect of human capital development (years of schooling) on the labour productivity (earnings) of the causal workers in Kerala.

5. H_0: There is no significant relationship between the parental education and the human capital development of their children.

1.7. Data Source and Methodology

The present study combines both theoretical and empirical approaches, utilizing primary and secondary data. To address the first two objectives; the impact of human capital on employment preferences and its effect on worker productivity (earnings), the study uses data from the India Human Development Survey (IHDS) specific to Kerala. Since the most recent round of IHDS data (third round) has not yet been published, additional primary data from 2019-2020 were collected from Feroke Municipality in Kozhikode district to supplement the analysis. This approach is based on the assumption that Kerala is relatively homogenous across all regions. Feroke Municipality is divided into 38 electoral divisions, from which four divisions (10 percent) were randomly selected for the study. The sample was drawn from the latest voter list of these four divisions; targeting individuals aged 25 to 45. Based on sample size determination, data were collected from 320 individuals out of the 1,908 eligible persons. The study focused on workers with a certain level of earnings; therefore, individuals who were unemployed or had no earnings were excluded and replaced from the sample list. Primary data were collected using a structured questionnaire through both personal and telephone interviews. Percentage analysis and various statistical tools were employed to analyze the data. A detailed explanation of the study's methodology is provided in the third chapter of the methodology section.

1.8. Chapter Scheme

The study is organized into seven chapters. Chapter one deals with the introduction which includes the context of the study, a statement of the problem, the objectives of the study, the hypothesis of the study, the chapter scheme, and the limitations of the study. The second chapter is the review of literature which deals with major studies associated with the thesis and it includes reviews related to studies of human capital and employment status, human capital and productivity, and investment in human capital. The third chapter discusses the data and statistical

methods used in the study. The fourth chapter deals with an analysis of the employment preferences of workers in Kerala. The fifth chapter deals with human capital development and the productivity of workers in Kerala. The sixth chapter deals with the human capital development and productivity of workers by using primary data. The seventh chapter is the final chapter deals with the summary, findings, and conclusions of the study.

1.9. Limitation of the Study.

Human capital is a broad concept encompassing various elements such as expenditures on education, healthcare, on-the-job training, and migration. However, the present study focuses only on the primary components of human capital, namely education and health. The study acknowledges several limitations. Firstly, there is a lack of comprehensive data, as it relies on the India Human Development Survey (IHDS) data from 2011-12, with the most recent data still unpublished. Additionally, the IHDS data does not provide detailed information on the socioeconomic status of families and other critical factors. As a result, the study assumes a degree of homogeneity across Kerala and supplements this with data collected from Feroke Municipality. However, applying this assumption to a diverse state like Kerala is a significant limitation, and the researcher is fully aware of its constraints. Therefore, caution must be exercised when generalizing these findings to represent the entire state. To address this, the study invites future researchers to build upon this work and address these limitations, thereby providing a more comprehensive picture of human capital development across Kerala. Furthermore, data collection was conducted during the COVID-19 lockdown, which restricted the scope of data to the Feroke locality. Another limitation involves the assessment of workers' health status, which is based on self-reported conditions and may be influenced by their psychological state at the time of data collection.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

The literature review chapter addresses both theoretical and empirical studies concerning human capital. The first section focuses on theoretical studies related to human capital, while the second section presents empirical studies on the topic. The final section identifies the existing research gaps in this field.

2.2. Theoretical Background of the Study

Before delving into the theoretical background, this section explores the origins of the concept of human capital and then reviews foundational studies related to human capital and productivity.

2.2.1. Origin of the Concept of Human Capital.

Human capital has gained considerable attention in both classical and contemporary economic thought. Many economists have regarded human beings and their skills as a form of capital. Prominent figures in economic history, such as Petty, Smith, Say, Marshall, Roscher, Bagehot, Ernst Engel, Walras, and Fisher, contributed foundational ideas that paved the way for modern human capital theories developed by T.W. Schultz, G.S. Becker, and J. Mincer.

Sir William Petty (1623-1687) was one of the first to attempt to measure and define what is now known as human capital. He viewed labor as the "father of wealth," proposing that the value of labor should be measured and included in the estimation of a nation's wealth. Petty's work emphasized the significance of land and population, considering them more crucial determinants of a nation's wealth than other factors (Poteliene &Tamasauskiene, 2014).

Adam Smith, a prominent classical economist and often regarded as the father of economics, emphasized the role of human endeavor as the source of all wealth in his seminal work, An Inquiry into the Nature and Causes of the Wealth of Nations'. In his opening passage, Smith suggested that human effort is the foundation of all economic prosperity. His ideas introduced two key elements that underpin modern frameworks of human capital. The first element recognizes that labor input includes not only the amount of work performed but also its quality, reflecting the acquired and practical abilities of all community members, such as their skills, expertise, judgment, and overall capacity applied to their tasks. The second element is the capacity to acquire these skills through education. Smith noted that both formal education and practical training, like apprenticeships, incur real costs, which are ultimately reflected in an individual's capital (Sweetland, 1996).

Around 1848, John Stuart Mill argued that human abilities are inherently fixed within an individual and, therefore, could not be directly considered as wealth. However, Mill regarded human abilities as economic utilities means to generate wealth and recognized the importance of all activities that contribute to their development (Sweetland, 1996).

Leon Walras expanded the concept of capital to include all people, treating their value or price like that of any other form of capital. He argued that, in pure economic theory, it was appropriate to set aside considerations of justice and practical application, viewing human beings solely in terms of their exchange value (Kiker, 1966).

In 1890, Alfred Marshall presented a nuanced understanding of human capital. Following the Smithian tradition, Marshall defined human capital as a form of personal wealth that includes energy, skills, and habits contributing directly to the industrial efficiency of a population. He considered it the primary source of savings and an agent of future economic growth, rather than a direct source of personal satisfaction. Later, in 1906, Irving Fisher regarded human involvement in production processes as a type of capital (Sweetland, 1996).

2.2.2. Theoretical Studies of Human Capital.

Mincer (1958) developed a model to explore the nature and causes of personal income inequalities, highlighting the significant impact of human capital namely training and skills on income distribution. He argued that variations in personal income were largely due to individual differences, which, in turn, were influenced by investments in human capital. According to Mincer, this investment was a result of a theoretical model based on free choice, specifically the duration of training. Thus, differences in the length of training were a key factor contributing to inequalities in income distribution. Mincer's model identified two essential types of training: formal and informal. He integrated years of education and work experience (measured by age) to assess the extent of training. His study revealed that additional years of education were rationally compensated, with lifetime earnings equating to the current value of compensation for less-educated workers. Jobs requiring higher levels of education generally offered higher compensation. Another important finding from Mincer's study was the age–earnings profile, which identified two key patterns: first, that income increases with greater skill and experience over time; and second, that aging often leads to a decline in productive performance, resulting in a decrease in income. He argued that differences in training are the primary reasons for variations in income levels between occupations and the slopes of career income paths. Generally, higher occupational ranks are associated with greater income levels and steeper income trajectories over a lifetime. Mincer's study concluded that inter-occupational income differences are largely a function of training, while intra-occupational differences arise when investment in human capital also accounts for work experience. He posited that "the greater the average amount of training within a group, the greater the inequality in its income distribution," regardless of how the group is defined—be it by industry, race, gender, marital status, or city size. While acknowledging the issue of income inequality and the potential for controlled income distribution, Mincer argued that even with perfect equality of ability and opportunity, income inequality or asymmetry in distribution would still exist.

Fabricant (1959) examined productivity in the United States from 1889 to 1953, initially focusing on clarifying discrepancies in statistical results. However, through his technical analysis, he discovered that traditional productivity-based methods and their assumptions tend to underestimate the investment in intangible capital, thereby overestimating productivity. This finding led him to highlight the critical importance of intangible capital, particularly human capital, throughout his work. According to Fabricant, a society's intangible capital encompasses all advancements in fundamental sciences, education, training, and other areas that enhance productive capacity.

Becker (1960) developed a model to compare income differences between college graduates and high school graduates in the United States. He linked these differences to the cost of attending college, using a mathematical approach to determine the rate of return on investment in college education. His study hypothesized that if this rate of return was significantly higher than the return on tangible capital, it would indicate underinvestment in college education. Conversely, if the return was lower than that on tangible capital, it would suggest overinvestment in education. After adjusting for background variables, Becker calculated the rate of return on a college education to be between 7 per cent and 9 per cent, compared to an average return of 8 per cent on business capital. Based on his hypothesis, he argued that the direct returns alone may not justify increased expenditures on college education, although such investment also provides indirect returns. Becker also analyzed student quality through intelligence quotients and grades, noting that many exceptional students do not attend college after high school due to financial constraints. He suggested that increasing the proportion of capable individuals attending college would raise the average rate of return on college education. While his study did not definitively clarify whether there was underinvestment in college education, it offered an important methodology for analyzing investments in human capital.

Schultz (1961) conducted a study on investment in human capital, emphasizing that people acquire knowledge and skills without realizing that these

are forms of capital. He argued that this type of capital, which results from deliberate investment, has expanded rapidly in Western societies and may be more crucial to economic growth than traditional, non-human capital. To support this claim, Schultz analyzed the growth of national income from 1900 to 1952, focusing on the contribution of education within the labor force. His findings indicated that national income growth nearly doubled compared to the growth attributable to reproducible capital. Schultz's analytical approach highlighted the difficulty of distinguishing between consumption and investment expenditures. To address this challenge, he categorized expenditures into three types: pure consumption, pure investment, and expenditures with both characteristics. He placed spending on education in the third category, arguing that it plays a fundamental role in human capital formation. Schultz identified direct expenditures on education, healthcare, and internal migration to access better job opportunities, as well as the opportunity costs of mature students attending school and workers receiving on-the-job training, as clear examples of investments in human capital that enhance human capabilities. He concluded that the growth in U.S. income was significantly higher than the combined returns from total land and labor hours, exceeding the income generated by traditional capital.

Studies conducted before the 1960s did not empirically address human capital directly. Instead, they explored related areas, such as the inconsistencies in personal income (Mincer, 1958), the significance of intangible capital (Fabricant, 1959), the appropriate methodologies for studying human capital (Becker, 1960), and the recognition of education and other forms of human capital (Schultz, 1961). The foundational studies that specifically focused on human capital theories include Denison (1962), Schultz (1963), and Becker (1964). Edward Denison (1962) examined the various sources of economic growth in the United States from 1909 to 1957, laying a strong foundation for evaluating future growth prospects and aggregating growth rates. His study aimed to identify the origins of economic growth, beginning with an analysis of land, labour, and capital inputs. Denison employed various index-creation techniques developed by others to account for different wage rates using labor input. Additionally, he created an index to measure

the impact of education levels on wage rates, thus explaining a significant portion of previously unexplained economic growth. Denison highlighted the relevance of human capital investment by noting that the average annual GDP growth rate for the period 1929-1957 was 2.93%. He estimated that 2% of this growth was due to an increase in total inputs, with educational factors contributing 0.67%. His findings suggest that human capital investment accounts for at least 43% of the growth in national income.

Schultz (1963) explored the residual factors contributing to economic growth, focusing particularly on the role of education in forming human capital and its impact on economic expansion. He argued that knowledge, closely tied to the education and research conducted by academic institutions, is a critical factor in economic growth. Schultz emphasized that school education and the advancement of knowledge are key drivers of economic development, highlighting those educational institutions, unlike natural resources, are man-made assets that merit investment and preservation. Schultz pointed out that the costs associated with education, particularly the opportunity cost of foregone earnings while attending school, are predominantly borne by the students themselves. In this context, he argued that a student's private return on investment in education often exceeds the social return on total investment. This is because the rate of return on their personal share of the cost is often more attractive than other investment opportunities. However, when considering the entire economy, education may appear less appealing as an investment, given that the calculated rate of return represents only a fraction of the total earnings attributed to schooling.

Becker (1964) departed from the total return approach to examine the specific rate of return on human capital investment in education and training. His exploration is based on the observation that highly educated and experienced individuals consistently earn more than others, a trend seen in both developed countries like the United States and the Soviet Union, as well as in developing countries like India and Cuba. Becker developed a method that uses the costs of education and the economic returns on investment to calculate the internal rate of

return on these expenses. Applying this method to 1950 census data, he estimated that approximately 13% of personal income could be attributed to investments in education, slightly lower than the 14.5% estimate derived from the 1940 census. Becker also differentiated between college and high school graduates, identifying five independent factors that account for variations in abilities. These factors encompass influences such as class rank, IQ, parental education, occupation, personality, communication skills, motivation, and family background. Although any single study has its limitations, Becker argued that the combined evidence warrants significant consideration. His findings indicate that, after adjusting for differences in abilities, the personal income rate of return on education exceeds 10%.

These are the important theoretical studies related to the human capital and productivity of the workers. The next section of the chapter deals with the empirical studies related to human capital.

2.3. Empirical Studies Related to the Human Capital

Based on the objectives of the present study, the empirical literature is organized into three sections. The first section covers studies related to human capital and employment status. The second section examines studies focusing on human capital and productivity (earnings), while the third section reviews studies that explore the relationship between socioeconomic status and human capital development.

2.3.1. Studies Related to Human Capital and Employment

Prakash (1988) examined the relationship between economic development and changes in employment patterns in Kerala. He argued that Kerala's development during the planning era was characterized by a shift in employment from the primary sector to the tertiary sector, largely bypassing the secondary sector.

Chandan (1990) explored the characteristics of the labor market for the educated population in Kerala. His study found that salaried employment is the most desired form of work among educated individuals.

Kaletaand Dabrowska, et al. (2008) investigated the relationship between employment status and self-rated health in Poland. The study collected primary data randomly from individuals aged 25-64 years and employed a multifactorial logistic regression model for analysis. The findings indicated that, for both men and women, self-rated health was significantly associated with employment status. Among unemployed men, the likelihood of reporting poor health was over three times higher than among employed men. Similarly, unemployed women had a nearly 1.5 times greater risk of low self-health assessment compared to their employed counterparts. The study concluded that employment status and self-rated health are closely interrelated.

Gui-zhi (2009) explored the potential relationship between the scale of higher education and employment in China. His study found that graduates from reputable institutions not only have a higher likelihood of securing employment but also receive job offers with higher starting salaries, particularly if they have strong academic records and hold a national standard English certificate. While the impact of job matching on starting salaries was found to be insignificant, the in-depth knowledge gained during higher education positively influences employment prospects. The study concluded that obtaining higher education from a prestigious institution is a significant determinant of employment. He recommended greater focus on the quality of higher education and its alignment with the current job market.

Adjaye (2012) examined the effects of education on employment in Ghana using secondary data from the Ghana Living Standards Survey (GLSS 5). Employing a probit regression model, the study found that individuals with basic, secondary, or tertiary education have a higher likelihood of being employed compared to illiterate individuals, all else being equal. The study concluded that education positively influences employability in Ghana and that the level of education is a key determinant of employment status.

Ionescu (2012) sought to identify and characterize the relationships between access to education and labor market outcomes across 32 European countries, while

also considering data from Japan and the United States. The study utilized data from the Eurostat database to analyze access to education, defined in terms of participation and investment (such as expenditures on education and research, financial aid to students, and funding of education), and assessed labor market outcomes primarily using various employment and unemployment rates, along with elements of wages and earnings. The study found that a higher level of education significantly improves an individual's chances of securing a job and maintaining employment, particularly during labor market crises. He concluded that investments in education have a direct impact on achieving positive labor market outcomes, such as increased employment and higher earnings, and a less pronounced effect on reducing negative outcomes like unemployment.

Sharma (2016) empirically examined the relationship between educational qualifications and employment status among Indian workers, also assessing the impact of a worker's education level on securing employment in specific industry sectors. Utilizing cross-sectional data from the National Sample Survey Office (NSSO) for the year 2011-12, the study applied multiple probit regression methods to test these relationships. He found a significant positive relationship between the level of education and a worker's employment status. The likelihood of obtaining regular employment increases with each additional educational qualification, while the probability of engaging in casual employment decreases with each additional year of schooling. Less educated workers are more likely to be employed in low-paying, labor-intensive industries such as agriculture and mining.

Hale and Viner (2017) explored the associations between health in early adolescence and subsequent academic and employment outcomes. Using data from the Longitudinal Study of Young People in England, they identified a significant relationship between early adolescent health and later academic and employment achievements. Their study highlighted that health is a critical component of academic and vocational success, suggesting that investment in health is a key strategy for improving life opportunities.

Ali and Jalal (2018) investigated the relationship between higher education and employment among students, collecting data from universities in Punjab. The study included 1,210 respondents, divided into two groups: current students and former students. Using multiple regression, correlation, t-tests, and ANOVA, the study found a significant positive relationship between higher education and employment. The findings demonstrated that higher education strongly influences and serves as a predictor of employment.

Schudde and Bernell (2019) examined employment outcomes, specifically earnings, in relation to different levels of educational attainment using secondary data. After controlling for individual differences and institutional factors, the study found that higher levels of education are generally associated with better employment-related outcomes. The findings highlighted a strong link between increased education and favorable job prospects, particularly in terms of employment in the previous year and access to company benefits. The study concluded that educational attainment significantly impacts young workers' access to quality jobs.

Yahong and Khan (2021) investigated the relationship between education level and health status and their impact on an individual's likelihood of being employed in China. Utilizing secondary data from the Chinese General Social Survey (CGSS-2015) and a binary logistic model for analysis, the study revealed that individuals with higher education have a greater chance of being employed compared to those with less education or who are illiterate. Specifically, those with a university degree or higher were found to have an 85 per cent higher likelihood of employment than those with a college or equivalent diploma. The study also found that individuals in good health had an 11 per cent greater chance of being employed compared to those in relatively poor health.

2.3.2. Human Capital Development and Earnings (Productivity)

Miller and Mulvey, et al. (1996) reviewed four economic studies on the relationship between earnings and schooling, using secondary data. The first aspect of their review involved estimating the economic returns to schooling through fixed

effects and selection effects regression models, incorporating instrumental variables approach to correct for measurement errors in self-reported schooling levels. Their findings indicated that up to 30 per cent of the estimated return to schooling could be attributed to family effects, with the remaining 70 per cent due to pure educational effects. Second, they compared the economic models of Ashenfelter and Krueger (1994) and DeFries and Fulker (1985), finding that the results obtained from each were similar. Third, the study assessed gender differences in returns to schooling, revealing that family effects had a more significant influence in the case of males. Finally, they examined the impact of family effects on educational attainment, concluding that approximately half of educational attainment could be attributed to genetic inheritance, with up to a quarter resulting from shared environmental effects. The study concluded that both educational attainment and family background are important determinants of earnings.

Simphambe (1999) conducted a study on the private rates of return to education in Botswana using household income and expenditure survey data, applying the Mincer earnings function. The study found that the rate of return increases with the level of education, being highest for upper secondary education and lowest for primary education. It also showed that the average earnings for females are lower than those for males across all education levels; however, the gender gap in earnings diminishes progressively as education levels rise.

Duraismay (2002) examined the rates of return to education on wage employment in India, analyzing the data by gender, age cohort, and location for the period 1993/94. He also evaluated changes in returns from 1983 to 1994 using secondary data from the Employment and Unemployment surveys of 1983 and 1993/94. The study found that returns to education increase up to the secondary level and decline thereafter. In rural areas, wage employment at primary, secondary, and technical diploma levels showed the highest returns, while in urban areas, higher secondary and college education yielded the highest returns. The age cohort of wage workers between 15-29 had the highest earnings compared to other cohorts. Women

with middle, secondary, and higher secondary education earned higher returns than their male counterparts. His study noted a negative rate of return to education.

Martin and Pereira (2004) analyzed the rate of return to education to explore the relationship between schooling and wage inequalities among male workers in various Western countries during the mid-1990s. They used a quantile regression method and found that more skilled workers received higher hourly wages, confirming an association between higher education and earnings.

Abdullah (2005) estimated the returns to education in Bangladesh using national-level household data and adopted the standard Mincer-Beckerian human capital earnings function framework. He found that each additional year of schooling increases earnings by seven percent. The rate of return estimates were lower for the rural sample than for the urban sample and higher for females compared to males.

Bhandari and Bordoloi (2006) assessed the determinants of the rate of return to education and personal income using secondary data from the National Data Survey on Social Protection and Income (NDSSPI) 2004-05. They applied a maximum likelihood probability model to estimate the private rate of return. The study found that as the level of education increases, the probability of being employed and the earnings of workers also increase. However, the rate of return and earnings for less educated individuals were relatively lower. Additionally, females, rural residents, backward groups, and non-English speakers had comparatively lower earnings and reduced chances of employment.

Shah (2007) examined the influence of higher education and experience on the earnings of women teachers in public sector educational institutions in Pakistan. Using primary data from 100 teachers in public schools, colleges, and universities, and applying the human capital development model developed by Becker and Mincer. The study found that each additional year of schooling and experience increased a teacher's monthly income by 14.2 per cent and 7.2 per cent, respectively. He concluded that higher education plays a crucial role in enhancing the earnings of

women in public sector education in Pakistan, alongside contributing to their personal development.

Raj and Duraisamy (2008) explored the role of human capital in determining labor productivity and earnings in the unorganized coir yarn manufacturing sector in Kerala. Collecting primary data from 188 coir yarn manufacturing units including cooperative (53), private (31), and household enterprises (104), the study used Mincer's human capital framework to assess the effect of education on worker earnings. They found a strong positive effect of education on productivity and earnings, noting that an increase in the average education level in household enterprises corresponded with a 5.2 per cent rise in labor productivity and explained 66 per cent of the variation in earnings.

Forbes and Barker et al. (2010) measured the effects of education and health on wages using a wage model based on Mincer (1974). Drawing on five waves of data from the Household, Income, and Labour Dynamics in Australia (HILDA) survey, spanning 2001-2005 with around 30,000 observations, the study found that higher education levels reduce the incidence of chronic illness and are likely to increase labor productivity as reflected in wages.

Agarwal (2011) estimated the private rate of return to education among Indian households using data from the India Human Development Survey (IHDS) of 2005. Applying the Mincer wage equation, Agarwal found that the rate of return to education increases with the level of education; primary education yields a return of 5.5 per cent, while graduates have the highest return at 15.9 per cent.

Arsena and Sucla (2011) conducted a quantitative analysis of private returns to schooling and incentives for investment in education using secondary data from the 2002 Living Standard Measurement Survey (LSMS). Applying the Mincer earnings function, they found that higher levels of schooling had a positive and significant influence, with returns increasing consistently for those with more education compared to those with only primary education or less.

Das and Mohapatra (2013) investigated the influence of education on income inequality by gender, caste, region, and occupation in Odisha. Using Mincer's earnings function and primary data collected from two districts, Matakagiri and Khurda, they found that the rate of return to education was higher for women, regardless of occupation, caste, or region. The study also found that wage employees had a higher return to education than self-employed individuals, and the return was greater in rural areas than in urban areas. Additionally, Scheduled Tribes (STs) showed higher returns to education compared to Scheduled Castes (SCs) and forward castes.

Bhardwaj (2013) analyzed the impact of human capital on the earnings of salaried employees in Mandi district. Using primary data from the urban areas of Mandi district and applying Mincer's human capital earnings framework, the study revealed that human capital is a key determinant of individual earnings and that earnings increase with higher levels of education. Family background, used as a proxy for the quality of education, was not found to be statistically significant in determining the earnings of salaried workers.

Romele (2013) calculated the rates of return on investments in education in Latvia using secondary data from the Central Statistical Bureau of Latvia's labour force survey for 2010 and 2011. Applying the Mincer earnings function, he found a positive correlation between the level of education and the rate of return, with higher education levels yielding higher returns for both males and females. The study also noted that education offers additional benefits, such as higher employment rates, better health, and greater awareness of educational and training opportunities.

Unni and Sarkar (2013) estimated the rate of return to education in both formal and informal sectors in Delhi and Ranchi, India. Using primary data and analyzing it with the Mincer wage equation, the study found that the overall rate of return for all workers was 8.4 per cent, with formal sector workers earning a return of 10.3 per cent and informal sector workers earning 6 per cent, indicating a higher return in the formal sector.

Rani (2014) studied the impact of various educational levels, religion, caste, urban and rural communities, and English language proficiency on earnings. Using secondary data from the 2005 IHDS and the Mincer earnings equation, the study found that as education levels increase, the rate of return also increases across different locations, caste-religion groups, and levels of English language ability.

Poteliene and Tamasauskine (2014) calculated the private rate of return to education in Lithuania for the period 2004-2011 using the full discounting method. The study found that higher levels of education yield significant returns, with a rate of return of 13 per cent for individuals whose studies were financed by the government and 9.8 per cent for those who financed their own education.

Linares (2015) empirically examined the economic effects of education in Spain and conducted an international comparison with France, the Netherlands, and Norway using data from the OECD's Programme for International Assessment of Adult Competencies (PIAAC). The study included 2,343 observations from Spain, 32,326 from the Netherlands, and 3,016 from France. Using a multivariate equation to integrate the impact of various factors on earnings, the study revealed a positive correlation between education, training, and earnings across all countries, increasing the likelihood of higher salaries for more highly educated individuals.

Ackah and Adjasi et al. (2016) analyzed the returns to education in Ghana using household survey data and the Mincer earnings equation. They found that returns to education more than triple from the primary to the secondary level, showing a strong convex relationship between education level and earnings.

Singhari and Madhashwaran (2016) estimated the inequalities in the rate of return to education in India from 1983 to 2011-12 using secondary data from the NSSO and Mincer's earnings equation. The study found that the rate of return to education was highest for regular workers and increased with higher education levels, while the rate of return for casual workers decreased with higher education levels. Primary and middle-educated casual workers had positive returns, but higher-educated casual workers experienced negative returns.

Bhaduri and Pastore (2017) examined the relationship between educational attainment and female labor market participation in India using secondary data from the NSSO's 2011-12 Employment and Unemployment Survey. The study found that the likelihood of participating in paid employment increased with education beyond the secondary level, though females had a lower rate of return to education than males.

Jacob (2017) analyzed the rate of return for different streams of education using IHDS data from 2011-12 and the Mincer earnings equation. The study found that medical graduates had the highest return, followed by engineering and professional graduates.

Bhattacharya and Sato (2017) investigated the impact of socioeconomic determinants on real wage rates for male employees in India from 1983 to 2010 by calculating the Mincerian wage equation. The study found that the return to primary education was unusually high, while returns to higher education levels were surprisingly low, a finding that contrasted with previous research in India. The study also noted minimal impact from caste, tribe, and religion on real wage rates.

Humtsoe (2017) estimated the link between education (human capital) and earnings and employment in Nagaland, examining intergenerational education transfer, educational expenditure, and its relation to parental income. Using household survey data from Wokha and Zunheboto districts collected in 2013-14, the study found statistically significant returns of 6.3 per cent, 6.5 per cent, and 7.1 per cent for elementary, secondary, and higher education, respectively. It also showed that a father's education had a greater influence on the educational attainment of his children.

Alma and Kristina (2018) investigated the impact of human capital development on productivity in European Union member countries, measuring human capital development through educational and healthcare expenditures and productivity through value added per employee. Using multiple regression analysis, they found that human capital positively affects labor productivity, with a greater impact in countries with lower productivity levels.

Michael (2021) empirically analyzed the effects of education, experience, days of work per month, and gender on wage earnings using primary data from 103 respondents in Kerala's Ernakulam district. He employed non-parametric tests such as the Mann-Whitney U test and Kruskal-Wallis test to test various hypotheses. The study found that education and experience positively impacted wage earnings, with work experience having a greater effect than years of education.

2.3.3. Socio-Economic Status and Human Capital Development

Blau and Duncan (1967) conducted a comprehensive empirical study on occupational mobility and job attainment using data from 20,700 individuals as part of the 1962 "Current Population Survey" by the United States Bureau of the Census. The study employed various statistical methods, including path analysis, regression, multiple classification analysis, and Guttman-Lingoes smallest space analysis. They used fathers' education and occupation as predictors of respondents' education, first job, and occupation, revealing that education is crucial for social mobility. The study also highlighted the disadvantages faced by Black individuals in achieving occupational success compared to their White counterparts.

Jencks et al. (1972) examined the impact of parental background, occupational status, and income on children's educational attainment in the United States, largely based on a reinterpretation of James E. Coleman's "Equality of Educational Opportunity" survey. The study found that family background is the most significant driver of educational achievement, and occupational status is closely linked to educational attainment, showing substantial disparities among individuals with the same level of education.

Sewell and Hauser (1975) explored factors influencing educational, occupational, and income attainment among non-farming males in the U.S., using data from the 1957 Wisconsin Status Attainment Survey. Their findings indicated that parental socioeconomic characteristics significantly affect children's educational, occupational, and income achievements.

Singh (1978) studied the effect of education on vertical social mobility in terms of income, occupation, and social status. The research, which involved fathers aged 45-65 and sons aged 26-45, found that educational attainment is strongly linked to socioeconomic status, income, professional prestige, parental expectations, and job satisfaction. The study also observed that representation of scheduled castes and backward classes in higher education was low, and vertical social mobility decreased as educational levels increased.

Moore and Schmidt (2004) examined the influence of maternal education on children's academic outcomes using data from the Child Supplement of the National Longitudinal Survey of Youth 1979 (NLSY79). By employing child and sibling-fixed effects models to account for unobserved heterogeneity, they found that maternal education positively impacts children's academic outcomes, with minimal negative effects related to time allocation.

Brown (2006) empirically analyzed the influence of parental education on investments in children's human capital development in rural China. Using a survey of children, households, schools, and communities in northwestern China, the study identified a strong relationship between parental education and educational investments. Educated mothers were found to prefer more education for their children, and the perceived returns to education were higher for children of more educated mothers. The study also noted that the marginal effect of education differed between mothers and fathers, with an additional year of maternal education leading to greater time investments than an additional year of paternal education.

Shukul (2007) investigated family aspirations for children's education, facilitative practices, and educational expenditures. The study conducted a descriptive survey of parents of 130 students in the tenth, eleventh, and twelfth grades, using a questionnaire that included a scale to determine parents' education facilitation practices. The findings revealed that most parents viewed education as an investment in human capital and employed effective practices to support their children's education.

Johnson and Schoeni (2007) explored the link between early life experiences and adult cognition, human capital accumulation, labor market outcomes, and health status using nationally representative data from the United States. The study found that poor birth health and limited parental resources adversely affect cognitive development, educational attainment, and labor market and health outcomes in adulthood. Additionally, it highlighted how early life characteristics, such as birth weight and parental income, contribute to racial disparities in adult health.

Maitra and Sharma (2009) examined the impact of parental education on children's educational attainment in terms of the number of years of schooling completed and advancement through different schooling levels. Using data from the 2005 Indian Human Development Survey (IHDS), they found that a father's educational achievement positively and significantly affects the likelihood of children progressing to postsecondary education.

Behrman and Murphy (2010) investigated maternal cognitive skills and education as indicators of maternal intellectual human capital using data from a supplementation trial by the Institute of Nutrition for Central America and Panama (INCAP). The study revealed that maternal cognitive skills were more consistent with variations in children's biological human capital, and where maternal intellectual human capital was significant, it correlated with child schooling attainment.

Aina (2012) examined Italian university entry and dropout rates concerning specific parental and family characteristics using European Community Household Panel data. The study found that household cultural and financial conditions significantly influence investment in tertiary education and its outcomes.

Mondal and Majumder et al. (2014) explored the relationship between maternal schooling and child health in Bangladesh using data from the Household Income and Expenditure Survey (HIES) 2010. The study found that while fathers' education was positively associated with health-seeking behavior, maternal education had a more substantial impact on child health outcomes.

Dutta (2014) analyzed the impact of parents' education levels and household wealth on children's educational outcomes across Indian states using data from the National Family Health Survey-3 (NFHS-3) conducted in 2005-06. The study found that parental education and household economic conditions significantly affect children's education, particularly in secondary and tertiary sectors.

Fanni (2014) conducted a rural field study in South Hungary to examine the impact of socioeconomic status on human capital formation. The study found that children from lower socioeconomic backgrounds are more likely to experience neurophysiological delays, adversely affecting their cognitive performance and overall development.

Caro and Cortina (2015) investigated the long-term relationship between family socioeconomic status (SES), educational attainment, and labor force participation in the U.S. using data from the Michigan Study of Adolescent Life Transitions (MSALT). They found that family SES influences educational attainment and labor market outcomes, including wages and occupational status.

Soytaş (2016) analyzed the relationship between parental investments in time and money to enhance children's human capital during childhood and their adult outcomes. Using data from the Family-Individual File of the Panel Study of Income Dynamics (PSID), the study suggested that both types of investments are critical channels for transferring human capital from parents to children.

Sreekala and Afsal (2016) investigated the influence of factors such as parental education, occupation, income, and gender on children's educational attainment in the Muslim community in Kerala using primary data from 431 randomly selected respondents. The study found that all these factors, except parental income, significantly predict children's educational outcomes.

Jerrim (2017) examined the relationship between parental education and later lifetime income using three cross-nationally similar datasets from over 30 countries. The study found that the intergenerational relationships in the U.K. were stronger than in Scandinavia but weaker than in Eastern Europe.

Vukojević and Zovko et al. (2017) reviewed the role of parental socioeconomic status in determining children's physical and mental health, academic achievements, and future outcomes. The study emphasized the long-term consequences of declining parental socioeconomic status on children's development and well-being.

Shrestha and Shrestha (2017) explored the intergenerational transfer of human capital by examining the effect of maternal education on children's educational and labor outcomes in Nepal. The study found modest effects of maternal education on child labor outcomes, suggesting that exclusionary social structures may limit the impact of maternal education in certain contexts.

Georgiadis (2017) investigated the association of child human capital indicators with parental background across four low- and middle-income countries using data from the Young Lives cohort study. The study found that parental income is positively associated with children's nutritional status and cognitive achievement, while non-cognitive skills are more strongly predicted by maternal personality traits.

Li and Qiu (2018) examined the impact of family socioeconomic status on children's academic achievement using data from the Chinese Family Panel Studies (CFPS) 2010. The study found that family background significantly influences academic outcomes, explaining a substantial portion of the variance in children's test scores.

Chen and Kong et al. (2018) explored the connection between parental socioeconomic status and children's reading ability in middle-school students. The study found that the parent-child relationship moderates the impact of socioeconomic status on reading ability, with the effects varying by students' levels of learning motivation.

Ajefu (2018) estimated the causal influence of parental income on child labour and human capital using an instrumental variable approach. The analysis relied on secondary data from the NSSO Employment-Unemployment survey. The

study found that increased parental income positively affects schooling and reduces child labor, with a greater impact on girls than boys.

Attanasio and Meghir et al. (2019) studied the production functions of cognition and health for children in India using data from the Young Lives Survey. The study revealed that early health significantly impacts cognitive development and that parental investments have a lasting effect on cognitive outcomes, especially in younger children.

Farooq and Nadeem et al. (2019) investigated the impact of parental education on malnutrition, using data from the Pakistan Demographic and Health Survey 2012-13. The study found that parental education, household economic status, and environmental factors significantly influence child malnutrition and stunting.

Haelermans and Ghysels (2019) analyzes the influence of a parental app (parental involvement) on student effort in a digital homework practice tool and its effect on subsequent human capital development. The randomized field experiment includes more than 2000, 7-9 grade students of 2 schools and they specifically focus on different socio-economic status (SES) groups. The study found that parental involvement via an app positively affects effort and human capital development of 7th and 8th grade students, but not of 9th-grade students. The favorable benefit is primarily driven by low socio-economic status positive effects are mainly driven by low-SES students and are larger for males.

Valenzuela (2020) studied the intergenerational impact of parental job loss on school performance of their child during the Great Recession in Spain. The data was collected through parental surveys in a school in the province of Barcelona. The data on the labor market and parental labor market status before and during the Great Recession. The information repeated on their children's school performance, for a sample of over 300 students. Using individual fixed effects, the estimates found a negative and significant decrease in average grades of around 15 per cent of a standard deviation after the father's job loss. The average impact of a mother's job loss on school performance is close to zero and non-significant.

Carneiro and Garcia, et al. (2021) examine the importance of the timing of income shocks for the human capital development of children. They used a very large dataset, consisting of the entire population of children born in Norway between 1971 and 1980, and estimated semi-parametric regressions of human capital outcomes of children (measured in their adult years), on the discounted household income for the years when the child was between 0 and 17 years of age (which we label permanent income), and on income in different periods of childhood. The study found that firstly, conditional on permanent household income, the child's human capital is higher in households where income is balanced between the early childhood and late childhood years than in households with a more imbalanced income profile. Second, compared to the early and late period of childhood, income in the middle period has a moderately low productivity.

2.4. Research Gap

There are numerous national and international studies examining the relationship between human capital and worker productivity (earnings). However, in the context of Kerala, only a few studies have been conducted. Notably, one of the key studies applying Mincer's human capital earnings function in Kerala focused exclusively on unorganized coir workers. The present study aims to analyze the effect of human capital on the earnings (productivity) of regular salaried, self-employed, and casual workers in Kerala separately. Furthermore, no existing studies in Kerala have explored the influence of the family's socioeconomic status on the human capital development of workers. This study seeks to address this gap in the literature.

CHAPTER 3

METHODOLOGY

3.1. Introduction

This chapter on methodology is organized into three sections. The first section outlines the variables, concepts, and definitions employed in the study. The second section provides details about the data utilized, highlighting the quantitative approach of the research. The third section discusses the various statistical methods used for analysis.

3.2. Variables, Concepts and Definitions

This section of the study discusses the important variables concepts and definitions used in the study.

- **Human capital:** The set of attributes of education and health.
- **Education:** Education which measured based on the level of education completed by the respondent, and years of schooling.
- **Health:** Health is a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity" (WHO).

  The present study uses **Self-Assessed Health Status and Activities of Daily Living (ADLs**) as proxy variables to represent health. Self-Assessed Health Status is a summary measure of an individual's overall health, as determined by the person themselves. ADLs provide another self-assessment of health based on the ability of young, healthy individuals to perform daily activities without assistance.

For the primary data, Self-Assessed Health Status is collected using a five-point scale. ADL data is used to measure health status in analyses where the IHDS dataset is employed.

Socio-economic status: The Michigan State Department of Education defines socioeconomic status as encompassing three dimensions: family income, parents' education level, and parents' occupation, a definition widely utilized in numerous studies (Chen and Kong et al., 2018). The American Psychological Association further defines socioeconomic status as "the social standing or class of an individual or group." Based on these definitions, the present study considers family income, parents' education level, parents' occupation, and social class as key socioeconomic factors.

Labour Productivity: Labor productivity is an indicator of output per hour worked. Forbes and Mathews (2010) measured labor productivity in terms of hourly wages. While wages are likely to be a reasonable indicator of the effect of education on labor productivity, the study ultimately used yearly earnings as an indicator of labor productivity.

Employment Status: Economically active persons -who represent the labour demand-, include employed persons (self-employed, regular salaried, and casual labourers). The major portion of women who are producing household output is omitted from this study due to the non-availability of the data related to the monetary value of the unaccounted household production.

3.3 Data Collection Methods

The study utilizes both secondary and primary data. The IHDS data from 2011-12 is employed for analyzing the first two objectives, as it is the only large-scale dataset that includes the relevant variables, justifying its use for this analysis. Acknowledging the time lag issue, primary data was collected in 2019-20 to address the third objective, which is based entirely on primary data gathered from Feroke Municipality.

3.3.1 Population of the Study

The study focuses on the productivity (earnings) of workers in relation to their human capital development. As previously mentioned, productivity is measured solely based on income; therefore, the study selected employed individuals with a certain level of income in Kerala for the analysis. Research indicates that workers between the ages of 30 and 45 exhibit the highest productivity, while those below age 25 show the lowest productivity (Ours and Stoeldraijer, 2010). Considering these factors, the study collected data from workers aged 25 to 45. For the primary data collection, the target population specifically comprises workers aged 25 to 45 in Feroke Municipality.

3.3.2. IHDS data 2011-12

The India Human Development Survey (IHDS) was conducted by the National Council of Applied Economic Research (NCAER), New Delhi, in collaboration with the University of Maryland. It is a multi-topic panel survey that covers 41,554 households in 1,503 rural and 971 urban areas across India. The first round of interviews was conducted in 2004-05, and the second round re-interviewed most of these households (N=42,152) in 2011-12. The data used in this study is from the India Human Development Survey-II (IHDS-II) of 2011-12, which includes information from all Indian states and union territories, except Andaman/Nicobar and Lakshadweep. This round of the survey encompasses 42,152 households from 384 districts, 1,420 villages, and 1,042 urban blocks spread across 276 towns and cities in India. The rural sample was drawn using stratified random sampling from villages and urban blocks, which served as the primary sampling units, while the urban sample was selected from a stratified sample of towns and cities within states (or groups of states) using probability proportional to population (Desai, Dubey, and Vanneman, 2015). Our study focuses on human capital development and the productivity of workers in Kerala. Therefore, we selected data specific to Kerala from the IHDS dataset, which includes 6,779 individuals (3,214 males and 3,565 females). The study concentrates on workers aged 25 to 45, resulting in a subset of 1,118 individuals (870 males and 248 females). The IHDS data provides detailed

information on respondents' educational background, health status, employment activities, earnings, and other relevant variables.

3.3.3. Primary Data

The study aims to analyze the impact of human capital development on worker productivity and the influence of socio-economic status on human capital development. It assumes that the outcomes will remain consistent regardless of the locality, based on the assumption of homogeneity across Kerala. In other words, it is presumed that selecting any locality in Kerala as a sample would yield similar results. Consequently, Feroke Municipality was chosen for primary data collection based on this assumption of homogeneity. While the majority of the analysis relies on secondary data, the primary data serves to supplement and enhance the findings derived from the secondary data.

3.3.3.1. Sample Design of the Primary Data.

Feroke Municipality is divided into 38 divisions, from which four divisions (representing 10 percent) were randomly selected for the study in the first stage. In the second stage, the voter lists from these four divisions were used to select 1,908 individuals between the ages of 25 and 45. Based on the sample size determination, data was collected from 320 individuals. Since the study aims to explore the relationship between productivity and human capital, it required a sample of workers. Therefore, all individuals in the age group of 25 to 45 were contacted directly or indirectly to obtain a sufficient sample size. Non-workers were excluded, and only workers were included in the sample. The selection process continued until 320 workers were identified. Due to the COVID-19 lockdown and restricted movements, the majority of the data was collected via phone calls, which constitutes a major limitation of the study. Primary data was gathered using a structured questionnaire through both personal and telephone interviews.

3.4. Statistical Methods Used for the Study

The important statistical methods used in the study are discussed below.

3.4.1. Descriptive Statistics

In the descriptive statistics, the mean and standard deviation of the variables are utilized for analysis. The sample profile of the workers is described using a percentage frequency table. Percentage analysis is employed to compare different groups, such as employment preferences between males and females, and to highlight differences in earnings by caste and gender, among other factors. Data is visually presented through figures and graphs.

3.4.2. Independent Sample t-test

Independent sample t-test is used to test the mean difference between the economic status of the family (APL and BPL) and the human capital development of the workers.

3.4.3. One-way ANOVA / Kruskal –Wallis Test

In statistics, one-way analysis of variance (ANOVA) is a method used to determine whether the means of two or more samples are significantly different, based on the F distribution. The one-way ANOVA is specifically designed to test for differences among at least three groups. However, when the normality assumption required for one-way ANOVA is not met, the non-parametric Kruskal-Wallis test is used instead. This test is suitable for comparing two or more independent samples of equal or different sizes. In this study, the Kruskal-Wallis test is applied to examine differences in human capital development across various levels of parental education, the employment status of the father, and the social class of the respondents.

3.4.4. Post Hoc Test

Fisher's Least Significant Difference (LSD) procedure is a statistical tool used to identify which pairs of means are significantly different from each other. It

is a two-step testing method for making pairwise comparisons among multiple treatment groups.

3.4.5. Index Used for the Study

The human capital development index is calculated based on two indicators. Health and education.

- **Education Indicator**

The level of Education indicator is based on the level of education completed by the respondent. The education level is coded into one to six. The highest level of education is indicated by six and the lowest level of education is assigned by one.

$$\text{Level of education indicator} = \frac{\text{Coded value of level of education}}{6} \times 100$$

- **Health Indicator**

The health status of the workers in this study is measured using their Self-Assessed Health Status, collected through primary data. The study references the SF-36 questionnaire developed by the RAND Corporation in the USA, which is widely used for assessing health at the individual level, in health policy evaluations, and in general population surveys. The SF-36 has been applied in thousands of research studies and, although originally designed as a generic health measure, it has also been adapted for specific disease populations. The questionnaire includes eight domains of health; however, for the purposes of this study, only four selected domains are utilized: Physical Difficulties, General Mental Health, Social and Familial Problems, and General Health Perception. A five-point scale is used to record responses to these questions, ranging from "Excellent" to "Very Poor." The Health Indicator is created using four self-assessed health variables: Satisfaction with Family (CH), Interaction with Others (CI), Physical Problems (CJ), and General Health Perception (GP). The health indicator is computed using the following formula:

$$\text{Health Indicator} = \frac{\text{Average of Four Variables}}{5} \times 100$$

- **Human capital development index**

The Human Capital Index explores the contributors and inhibitors to the development and deployment of a healthy, educated, and productive labour force. The index for Human Capital Development has been created using the formulae given below:

Human Capital Index = Average of Education and Health Indices

3.4.6. Multinomial Logistic Regression

Multinomial logistic regression is a classification method that extends logistic regression to situations involving more than two discrete outcomes. This model is used to predict the probability of various possible outcomes of a categorically distributed dependent variable based on a set of independent variables, which can be real-valued, binary, categorical, and so on. In this study, multinomial logistic regression is applied to predict workers' employment preferences based on their human capital attributes, such as education and health. The dependent variable is the type of employment, while the independent variables include age, gender, religion, and level of education (representing human capital).

3.4.7. Human Capital Earning Function of Mincer.

To estimate the relationship between human capital and earnings, Mincer (1974) developed the "Human Capital Earnings Function," a semi-logarithmic model also known as the Mincerian earnings function. This is the most widely used functional form for analyzing earnings. The present study adopts Mincer's (1974) human capital earnings model to examine the influence of human capital on labor productivity (measured by yearly earnings) of workers in Kerala.

The "Human Capital Earnings Function" possesses several distinctive characteristics that make it particularly appealing. A key feature is that it translates the monetary cost of human capital investment into years of schooling and labor

market experience. The coefficients of explanatory variables, such as education (S), are interpreted as percentage impacts on earnings, demonstrating the relative earnings from time invested in schooling. The coefficients in the regression equation have clear economic interpretations, are unitless, and their standard errors can be calculated, allowing for comparisons across time, place, and demographic groups. While earnings tend to be positively skewed and inequality increases with higher education levels, using the natural logarithm of earnings as the dependent variable helps normalize the residuals and ensures homoskedasticity. The model is also easily adaptable to incorporate additional variables that may influence earnings.

The first equation of the model is

$\ln Y_i = \alpha + \beta S_i + u_i$ ..... (1)

Where,

$\ln Y$ = log of hourly earnings

S = Years of schooling completed

α = Intercept term

β = Respective regression coefficient/ slope coefficient/ estimated average effect of a unit change in schooling.

u = Random variable.

The annual earnings of an individual do not remain constant, after schooling the aforementioned form of earnings function is modified by including individuals' labour market experience (in years) EX and its quadratic form $(EX)^2$. The rationale behind squaring experience and including it as a separate variable in the earnings function is to meet the mostly observed parabolic effect of declining age-earnings profile after a given age. Thus, the basic form of the earnings function is;

$\ln Y_i = \alpha + \beta_1 S_i + \beta_2 EXi + \beta_3 EX_i^2 + u_i$ ..... (2)

Where

EX = Experience

EX^2 = Experience square

β_2 = Estimated average effect of a unit change in Experience

β_3 = Estimated average effect of a unit change in Experience square

The actual years of labour market experience of the workers are not available. Hence the potential experience of Mincer (1974) is used in the study calculating experience.

Potential Experience = Age – Years of schooling – 6

3.4.7.1. Extension of Human Capital Earnings Model

The extensions of the Mincer earnings equation are thereafter done by adding many dummy variables. It is incorporated to estimate how different skills and variables are related to the earnings of an individual. The present study added the variables of dummy of gender, dummy of caste, and dummy sector of employment and the work months in the last year. The estimations will give knowledge about which of the variables more or less determine the individual's earnings. The Extended Mincer equation is as follows

Most of the national and international studies reported the difference in average wages or earnings between men and women. Several studies highlighted this issue by Bhandari (2006), Agrawal (2012); Rani (2014), and Jocab (2017). The study used a dummy of gender to estimate the gender difference in earnings. Where male is a dummy for gender (Male=1, Female=0)

Where added dummy of male into equation (3)

$\ln Y_i = \alpha + \beta_1 Si + \beta_2 EX_i + \beta_3 EXi^2 + \beta 4 DM_i + u_i$ ..... (3)

DM –Dummy of Male

β_4 = Estimated average effect of a unit change due to dummy male

Social class influences the earnings of the workers. The caste and religious identity have a detrimental effect on the wages of individuals from lower castes and minority religions (Madheswaran & Attewell,2007). To estimate the difference in the earning attribute to social class, a dummy of general (General caste =1, OBC=0) and dummy of OBC (OBC =1, Others=0) castes are added to the equation and the SC caste is taken as the reference category.

The dummy of castes is added to equation (5)

$$\ln Y_i = \alpha + \beta_1 Si + \beta_2 EX_i + \beta_3 EX_i^2 + \beta_4 DM_i + \beta_5 DGen_i + \beta_6 DOBC_i + u_i \quad \text{..... (4)}$$

DGen – Dummy of General caste

DOBC – Dummy of OBC caste

β_5 = Estimated average effect of a unit change due to dummy General caste

β_6 = Estimated average effect of a unit change due to dummy OBC caste

Employment characteristics influence the earnings of the workers. The workers in the public sector earn more than those in the private sector (Psacharopoules and Veleze 1988). The sector of work may be an important determining factor of the earnings of workers. Hence dummy of government (Government sector =1, Private sectors=0) is added to the equation (5).

$$\ln Y_i = \alpha + \beta_1 Si + \beta_2 EX_i + \beta_3 EX_i^2 + \beta_4 DM_i + \beta_5 DGen_i + \beta_6 DOBC_i + \beta_7 DGovt_i + u_i \quad \text{..... (5)}$$

DGovt – Dummy of Government sector employees

β_7 = Estimated average effect of a unit change due to dummy of Government sector employees

Mincer (1974) incorporated the current labor effort, specifically weeks completed, into his study and found that when weeks worked are not held constant, the rates of return from education are higher. Hence the part of job characteristics, the number of months worked in the last year is taken as one variable of the study.

Hence the study considered the number of working months in the last year taken for the study.

$\ln Y_i = \alpha + \beta_1 Si + \beta_2 EX_i + \beta_3 EX_i^2 + \beta_4 DM_i + \beta_5 DGen_i + \beta_6 DOBC_i + \beta_7 DGovt_i + \beta_8 NM + u_i$ ..... (6)

NM - Number of months worked in the last year

β_8 = Estimated average effect of a unit change due to the number of months worked in the last year.

The model is used separately for regular salaried employees, self-employed and casual workers. The coefficient values of years of education measure the rate of return to each additional year of schooling of the individuals.

3.4.7.2. Human Capital Earning Function with Family Background

The study of Sewell & Hauser (1975) in America found that parental socio-economic factors significantly predict the educational, occupational and income attainment of their children. The proponents of human capital theory in the field of economics have argued that the schooling, earnings relationship as in the earlier model is incomplete. In addition to schooling and experience, family background is likely to be as important in determining earnings (Bhardwaj,2013). In addition to schooling and experience, we have incorporated the father's education, the mother's education and the father's employment status in our expanded model. The extended model takes the following form;

The basic human capital earnings functions are

$\ln Yi = \alpha + \beta S_i + u_i$ ..... (1)

Where,

ln Y- is the log hourly earnings of the workers.

α- is the constant/intercept term,

S -years of schooling

u_i - error term

$$\ln Y_i = \alpha + \beta_1 Si + \beta_2(EX)_i + \beta_3 (EX)^2_i + u_i \quad \text{..... (2)}$$

EX - experience

EX^2- experience square

β_2 = Estimated average effect of a unit change in experience.

β_3 = Estimated average effect of a unit change in experience square

Skill and competencies are the ability to apply, use knowledge, and use know-how to complete tasks and solve problems are considered a component of human capital. “To achieve a better understanding and measurement of human capital, it is necessary to develop direct measures of skill, competency, and aptitudes, as well as the broad social and economic impact of human capital” (OECD, 1998). The literature says that different scores like PIAAC scores, mathematical test scores, etc. are considered the skills of human capital. The present study used the percentage of marks secured in the SSLC exam is considered here as an indicator of the ability of the workers. To know the influence of the percentage of mark of SSLC on earning, to the mincer equation.

$$\ln Y_i = \alpha + \beta_1 Si + \beta_2 EX_i + \beta_3 EX^2_i + \beta_4 Per + u_i \quad \text{..... (3)}$$

Per - Percentage of mark on SSLC

β_4 = Estimated average effect of a unit change in Percentage of mark on SSLC

The influence of socio-economic variables such as caste, father’s education, mother’s education, father’s employment status and economic condition of the family, on earnings of the workers. The socio-economic variables are added to the extended semi-logarithmic model of Mincer.

Where the male is a dummy for gender,

$\ln Y_i = \alpha + \beta_1 Si + \beta_2 EX_i + \beta_3 EX^2_i + \beta_4 Per + \beta_5 DM_i + u_i$ ..... (4)

DM – Dummy of Male (Male=1, Female=0)

β_5 = Estimated average effect of a unit change due to dummy of Male.

Parents' education is classified into elementary, secondary, and higher. The elementary-educated fathers are taken as a reference category and dummies for Secondary and higher-educated fathers are used.

Firstly, add the father's education into the equation

$\ln Y_i = \alpha + \beta_1 Si + \beta_2 EX_i + \beta_3 EX^2_i + \beta_4 Per + \beta_5 DM_i + \beta_6 DFSE_i + \beta_7 DFHE_i + u_i$ ..... (5)

DFSE – Dummy of Secondary Educated Fathers (Yes=1, No=0)

DFHE – Dummy of Higher educated Fathers (Yes=1, No=0)

β_6 = Estimated average effect of a unit change due to the dummy of Secondary Educated Fathers

β_7 = Estimated average effect of a unit change due to the dummy of Higher Educated Fathers

Mothers' education added into the equation (6)

$\ln Y_i = \alpha + \beta_1 Si + \beta_2 EX_i + \beta_3 EX^2_i + \beta_4 Per + \beta_5 DM_i + \beta_6 DFSE_i + \beta_7 DFHE_i + \beta_8 DMSE_i + \beta_9 DMHE_i + u_i$ ..... (6)

DMSE -Dummy of Secondary Educated Mothers (Yes=1, No=0)

DMHE – Dummy of Higher educated Mothers (Yes=1, No=0)

β_8 = Estimated average effect of a unit change due to the dummy of Secondary Educated Mothers

β_9 = Estimated average effect of a unit change due to the dummy of higher educated Mothers

While adding the employment status of the fathers

$$\ln Y_i = \alpha + \beta_1 Si + \beta_2 EX_i + \beta_3 EX^2_i + \beta_4 Per + \beta_5 DM_i + \beta_6 DFSE_i + \beta_7 DFHE_{i+} \beta_8 DMSE_i + \beta_9 DMHE_i + \beta_{10} Dsalaried_i + \beta_{11} Dself_i + u_i \quad (7)$$

DSalaried – Dummy of Father with salaried employment status (Yes=1, No=0)

DSelf – Dummy of Father with self-employed (Yes=1, No=0).

β_{10}= Estimated average effect of a unit change due to the dummy of salaried employment status

β_{11}= Estimated average effect of a unit change due the dummy of self-employed.

$$\ln Y_i = \alpha + \beta_1 Si + \beta_2 EX_i + \beta_3 EX^2_i + \beta_4 Per + \beta_5 DM_i + \beta_6 DFSE_i + \beta_7 DFHE_{i+} \beta_8 DMSE_i + \beta_9 DMHE_i + \beta_{10} Dsalaried_i + \beta_{11} Dself_i + \beta_{12} DAPL_i + u_i \quad (8)$$

DAPL – Dummy of APL ration card (Yes=1, No=0)

β_{12} - Estimated average effect of a unit changes due to the dummy APL ration card

Childhood aspirations are important in determining the life achievements of an adult (Lekfuangfu and Odermatt,2022). The level of aspiration is added to the equation

$$\ln Y_i = \alpha + \beta_1 Si + \beta_2 EX_i + \beta_3 EX^2_i + \beta_4 Per_i + \beta_5 DM_i + \beta_6 DFSE_i + \beta_7 DFHE_{i+} \beta_8 DMSE_i + \beta_9 DMHE_i + \beta_{10} Dsalaried_i + \beta_{11} Dself_i + \beta_{12} DAPL_i + \beta 13 Aspi + u_i \quad (9)$$

Aspi - level of Aspiration of the workers'

β_{13} - Estimated average effect of a unit changes due to change in level of aspiration.

The model is used separately for regular salaried employees, self-employed and casual labourers. The coefficient values of years of education measure the rate of return to each additional year of schooling of the individuals.

3.5. Conclusion

The present methodology chapter discussed the important variables, concepts, definitions and data used for the study. It also discussed the different statistical methods and models used for the study. The next chapter analyzes the influence of human capital development on the type of employment preference of the workers in Kerala by using IHDS data.

CHAPTER 4

AN ANALYSIS OF THE EMPLOYMENT PREFERENCES OF WORKERS IN KERALA

4.1. Introduction

The present chapter analyses the employment preference of workers in Kerala by using IHDS 2011-12 data. The study used multinomial logistic regression to analyze the data. The employment status is taken as the dependent variable and the independent variables are levels of education, English language ability, health status, age, sex, religion, and marital status of the workers. The first part of this chapter provides a descriptive discussion and the statistical analysis is given in the second part.

4.2. Sample Profile of the IHDS Data

Before going to the analysis part, the study gives a brief description of the profile of the sample. The study is focused on the productivity of the prime-aged workers in Kerala. Hence the data taken from the workers in the age group between 25 to 45 in Kerala from the IHDS data 2011-12. After the selection of this particular age group data includes 1118 persons.

4.2.1. Gender-wise Distribution of the Workers.

The females' labour force participation is significantly lower than that of males in Kerala (Pandy,n.d). The gender of workers influences the entry or supply into the labour market. Table 4.1 shows that among workers the percentage of females is quite less than that of male. The female participation is 22 percentages while that of the male is 78 percentages.

Table 4.1

Sex wise classification of the workers

Sex	Frequency	Percentage
Male	870	78
Female	248	22
Total	1118	100

Source: Based on IHDS data 2011-12

4.2.2. Religion and Caste wise Classification

Religion and caste play an important role in employment. The study of Shonchoy and Junankar (2014) found that there exists religious and caste discrimination in the labour market in India. Higher level of employment is more likely to do by the Brahmins and higher caste, while Muslims and Dalits are generally employed in non-agricultural labour. It also found that religion also influences the entry of females into the labour market. While analyzing Table 4.2 it shows though Muslim female's labour force participation is very low compared to the other religions groups, overall level of labour force participation female is also low.

Table 4.2

Religion-wise classification of the sample respondent

Religion	Male	Female	Total
Hindu	75.2	24.8	59.4
Muslim	91.3	8.7	19.5
Christian	72.9	27.1	21.1

Source: Based on IHDS data 2011-12

It is important to notice that in India, many jobs have historically been associated with specific caste. Table 4.3 shows as proportional to the population 26.6 percentage of the general caste, 19.7 percentage of the OBC caste and 25 percentage of SC/ST are engaged in work.

Table 4.3

Caste wise classification of the sample

Social class	Sex		
	Male	Female	Total
General	74.5	25.5	26.6
OBC	80.3	19.7	59
SC&ST	75	25	14.5

Source: Based on IHDS data 2011-12

4.2.3. Level of Education of the Sample Respondent

In the labour market, education provides both the productive capacities to the individuals and their signals to potential employers-hence attained qualifications are an asset in worker competition for jobs available on the labour market Gangal,2000). Lonescu (2012) study found that the higher one 's level of education, the better one's chance to getting a job and keeping the status of an employed person in times of crisis on the labour market.

Table 4.4

Level of education of the sample respondent

	Sex		
	Male	Female	Total
Elementary	19.4	21.2	19.8
Secondary	63.4	46.1	59.5
Higher	17.2	32.7	20.6

Source: Based on IHDS data 2011-12

4.2.4. Type of Employment of the Sample Respondent

The type of employment is classified into regular salaried, self-employment and Casual workers. Table 4.5 shows nearly half of the workers are engaged in casual work. The salaried workers are 33.8 percentages and self-employed work is comparatively low. While analyzing the gender difference it is seen that nearly half

of the females are engaged in regular salaried work. The studies of Mathew (1995), Mitra & Singh (2006), and Mallika (2011) also show that the females in Kerala are more engaged in salaried employment and their proportion of self-employment and casual labour is low.

Table 4.5

Type of Employment of the sample respondent

Employment status	Sex		
	Male	Female	Total
Salaried	27.7	55.2	33.8
self employed	19.3	6.9	16.5
Casual labour	53	37.9	49.6

Source: Based on IHDS data 2011-12

4.3. Analysis of the Employment Status by Using Descriptive Results

Before going for statistical analysis, in this section, the study used a primary analysis of the data set. In this section, the gender differences, social differences, education differences, and health differences in activity status among the workers are given. The first step is to know the activity status of the person; their gender difference and social differences.

4.3.1. Analysis of Activity Status

The activity status of a person is determined based on the activities pursued by the person during a specified reference period. It includes a person's participation in economic and non-economic activities. A person's activity status is determined by factors like age, gender, education status, health status, etc. The primary activity status of the sample population of Kerala is given in Table 4.6.

Table 4.6

Primary activity status and its gender difference

Primary Activity Status	Male	Female	Total
Cultivation	4.3	0.2	2.1
Allied agriculture	1.6	0.2	0.8
Agriculture wage labour	2.5	1	1.7
Non agriculture wage labour	35.4	6.8	20.2
Artisan/independent work	1.6	0.1	0.8
Small business	8.6	0.9	4.5
Organized Business	1.1	0.1	0.6
Salaried	18	8	12.7
Profession	0.8	0.3	0.5
Retired	1.9	0.7	1.3
Housework	0.3	64.8	34.5
Student	13.7	10.3	11.9
Unemployed	4.3	1.8	3
Too young/Unfit	4.7	4.2	4.4
Others	1.3	0.7	1

Source: Based on IHDS data 2011-12

Table 4.6 shows that the work participation rate of males is 73.9 percent whereas for females it is only 17.4 percent. The female's labour force participation is very low in Kerala. This is because the majority of females (64.8 percentages) reported that they are doing household work alone as their primary activity. It is pushing down the workforce percentage of Kerala to 43.9 percentages.

Table 4.7

Gender difference in types of employment

Primary Activity Status	Male	Female	Total
Cultivation	5.8	0.3	2.8
Allied agriculture	2.2	1.1	1.8
Agriculture wage labour	3.4	5.7	3.9
Non-agriculture wage labour	47.9	38.6	46.0
Artisan/independent work	2.2	0.6	1.8
Small business	11.6	5.1	10.3
Organized Business	1.5	0.6	1.4
Salaried	24.4	45.5	28.9
Profession	1.1	1.7	1.1
Total	100.0	100.0	100.0

Source: Based on IHDS data 2011-12

It is seen from Table 4.7 that the highest percentage of male members were employed in non-agricultural wage labour (47.9). More than two-thirds of females are in this category (38.6 per cent). Nearly half of the working women are (45.5 per cent) in regular salaried employment whereas male this percentage was only 24.4 percentage. It is interesting to note that in Kerala, only 8.5 percentages of total workers are engaged in agriculture and allied sectors. Out of the total male workers, 11.5 percentages are working in this sector whereas for females this percentage was only 6.1 percentages. This clearly shows that the reduction in the importance of agriculture and allied sectors in National income is well reflected in Kerala's labour market also.

Moreover, it can be seen that in our women empowerment strategies importance had been given to providing training for self-employment but the data shows that only 5.6 percentages of women are doing small business whereas this percentage was 11.6 percentages for males. This also shows that the cost incurred by the government to train the women to start their businesses also did not create much influence in the labour market of Kerala.

From this analysis, it is seen that gender is one of the important factors in determining the productivity of a person in Kerala. There are a number of other factors which influence the economic participation of females such as domestic work burden and related reproduction activities along with human capital development. The study used the theoretical framework of the Human capital earning function of Mincer which had taken mostly economic variables for their analysis. They argue that the marginal productivity of females may be higher in domestic work and that of a male is higher in market work and that may be the reason for the gendered division of labour. This productivity argument can be checked with the analysis of the relationship between gender, education, and employment participation.

4.3.2. Education, Gender, and Employment Status of the Workers

Education is certainly determining the quality of an individual's life through increasing skill and productivity. Education improves one's knowledge and skills and develops the personality and attitudes in life. It is argued that education increases the earnings and productivity of a person on one side and the other it increases the opportunity cost of sitting idle (Becker,1964). Education should improve the employment opportunities of a person and thereby their productivity. Gender difference in Education is given in Table 4.8.

Table 4.8

Sex-wise level of education

Level of education	Age between 15-60		Age between 25-45	
	Male	Female	Male	Female
Illiterate	1.20	2.30	0.60	1.30
Elementary	22.90	23.30	18.50	18.30
secondary	59.30	56	62.60	60.10
Higher	16.70	18.50	18.20	20.30

Source: Based on IHDS data 2011-12

It is seen from Table 4.8 that in the 15-60 age category of females, 18.5 percentage have education qualification graduation and above whereas, in the case

of a male, it is only 16.7 percentage. As it is already noticed women's work participation is low when compared to males, but in the case of education, females are getting more chances to study in higher education institutions than males. This shows that the productivity level of females is not restricted by the level of education, but there may be some other factors that influence the labour market participation of women than education. It is interesting to notice that in the age group of 25 to 45, 20.3 percentage of females are higher educated while that of males is only 18.2. With this, it is evident that it is not due to a lack of education, female work participation is low. At this juncture, it is interesting to analyze the preference for employment by different genders based on their level of education.

Table 4.9

Education and employment status of the workers

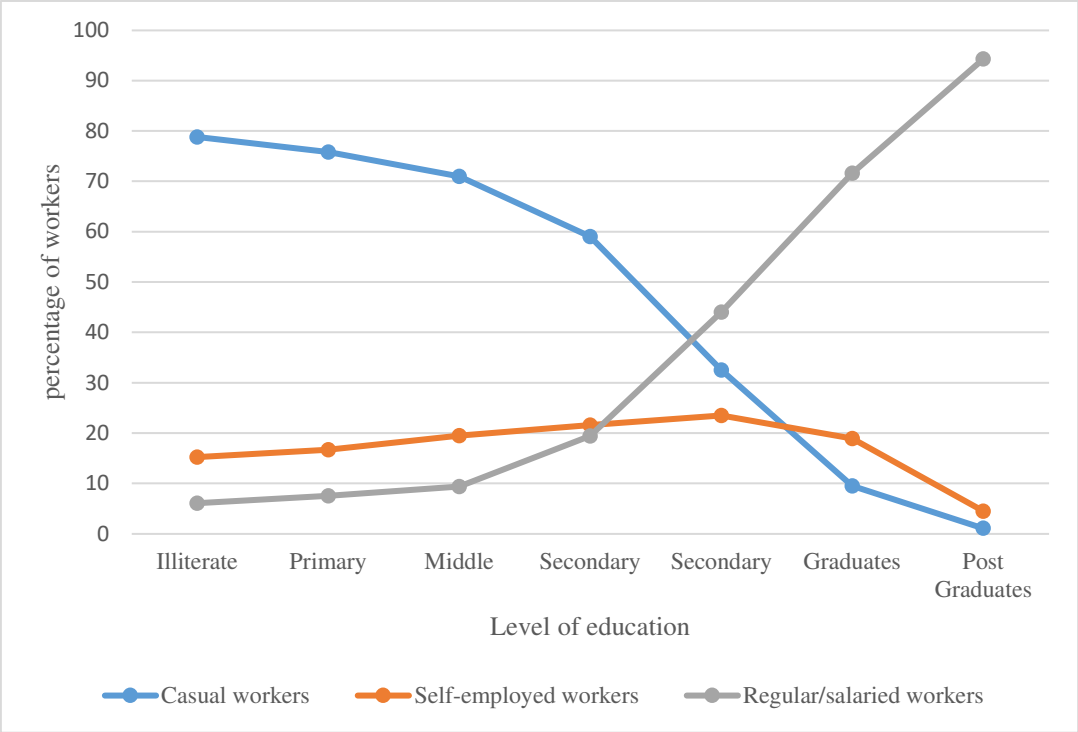
Level of Education	Regular/salaried workers	Self-employed workers	Casual workers
Illiterate	6.1	15.2	78.8
Primary	7.5	16.7	75.8
Middle	9.4	19.5	71
Secondary	19.4	21.6	59
Higher Secondary	44	23.5	32.5
Graduates	71.6	18.9	9.5
Post Graduates	94.3	4.5	1.1

Source: Based on IHDS data 2011-12

Table 4.9 and Figure 4.1 clearly show the close association between the level of education and employment status. The highest percentage of educated people prefer salaried/ regular employment i.e., 71.6 percent of graduates and 94.3 percentage of postgraduates prefer salaried work to self-employment and casual work. The highest percentage of workers engaged in casual work is illiterate and primary-level educated i.e., 78.8 and 75.8 percent respectively. The secondary and higher secondary educated persons prefer the self-employment status. So, education attainment is an important factor to determine the employment status of the individual.

Figure 4.1

Education and employment status of the workers



Source: Based on IHDS data 2011-12.

4.3.3. Religious wise Employment Status of the Workers

During the time of the Travancore princely state, the non-Malayali Brahmins had the virtue of monopoly in government jobs. Then after powerful agitation, it came to the Nair community, Christians, Muslims, and Ezhava demanding salaried jobs because of job security and job mobility. The preference for government jobs, which remains the most important form of salaried employment, is rooted in the tradition of Kerala and has been varying with one another for a due share of sirkar jobs (Mathew,1995). Employment probabilities were found to rise with increases in formal education and labour market experience, with the effects on employment varying by race and sex (Bloch & Smith,1977).

Table 4.10

Religious-wise employment status of the workers

Employment Status	Religion		
	Hindu	Muslim	Christian
Regular /salaried workers	32.3	26	27.6
self-employed workers	15.3	30	24.8
Casual Workers	52.4	44	47.6

Source: Based on IHDS data 2011-12

The employment status of the sample shows that the highest percentage (49.8) of the people belongs to the casual workers and taking any religion such as Hindu, Muslim, and Christian highest percentage of workers belongs to the casual workers. 32.3 percentage of the Hindu caste belongs to regular/salaried workers. Nearly equal participation is made by each of the Muslim and Christian religions in the regular salaried work. Of the total workers 20 percent belongs to self-employment; it includes 30 Percentage of the workers from the category Muslim. Similarly, the least self-employed (15.3) belong to the Hindu religion, and 24.8 percentage from the Christian community.

Table 4. 11

Social class-wise level of education

Level of education	Caste			
	General	OBC	SC	ST
Illiterate	1	1.70	3.7	8.7
Elementary	15.2	26.6	23	43.5
Secondary	58.6	56.4	61.7	43.5
Higher	25.2	15.3	11.6	4.3

Source: Based on IHDS data 2011-12

Table 4.11 shows that social class influences the level of education to a certain extent. The largest number of illiterates in the ST caste. The SC/ST caste up to the secondary level of education, is almost equal to the forward caste. But in the case of higher education SC/ST percentage is significantly lower than the forward

caste. The SC/ST communities have reservations in higher educational institutions but their participation is low. This may be due to the poverty-driven labour market participation by these communities in their early ages.

Table 4.12

Sex-wise level of education of social class

Level of education	General		OBC		SC		ST	
	Male	Female	Male	Female	Male	Female	Male	Female
Illiterate	0.6	1.3	1.1	2.3	2.4	4.9	8.3	9.1
Elementary	16.2	14.3	25.9	27.2	21.8	24.	41.7	45.5
Secondary	58.9	58.3	58.5	54.6	64.6	59.1	50.	36.4
Higher	24.4	26.	14.5	16.	11.2	12.	0.	9.1

Source: Based on IHDS data 2011-12

Table 4.12 shows some interesting evidence to show that Kerala is a pro-women state, where without social differences females are getting more chances to be higher educated than males. The percentage of illiterates are high among female on the one side and on the other, the majority of higher educated are from female community. Though the percentage of higher education is higher among females, a clear social difference is visible. Among the general community, male and female, one-fourth of them have higher education qualifications, while that of a Male from ST, this percentage was negligible. It is interesting to note that the gender difference in higher education is wider among ST communities.

Table 4.13

Social class and Employment Status

Employment status	Caste				
	General	OBC	SC	ST	Others
Regular Salaried	38	27.8	26.2	0	25.8
self-employed	26.2	20.1	9.8	0	13.6
Casual labour	35.9	52.1	63.9	100	60.6

Source: Based on IHDS data 2011-12

Table 4.13 shows the social class-wise employment status of Kerala. It is evident that social class is one of the important determinants of the employment status of a person in Kerala. Among the forward community, 38 percent of workers are in the regular salaried category, while that of OBC and SC are 27.8 and 26.2 percent respectively. Among the ST community, this percentage is zero. In the sample data, all ST persons are working in the causal labour category. While that of general, OBC and SC, this percentage are 35.9,52.1 and 63.9 respectively. As already discussed, education status and social class relationship may be one of the reasons for the significant difference in employment preferences of different social classes. From this analysis, it is evident that in Kerala, in the education and job market, a clear-cut social difference is visible. Some drastic steps should be taken to increase the education status of ST males.

4.3.4. Marital Status and Employment Status of the Workers

Marital status influences the labour market supply of both men and women. The study first considers the prime activity status based on their marital status.

Table 4.14

Marital status wise Primary activity status

Primary Activity Status	Marital status			
	Currently Married	Unmarried	Widow	Separated/ Divorced
Employed	53	33.7	28.4	20.2
Unemployed	0.4	10.7	0.7	1.2
Students	0.3	48.3	0	2.1
Housework	41.4	2.8	56.1	74.4
Others	4.8	4.5	14.9	2.1

Source: Based on IHDS data 2011-12

Table 4.14 shows that the primary activity status is based on their marital status. It is interesting to see that, the highest percentage of employed belong to the currently married category (53 percentage). It shows that marriage influences the activity status of employment.

Table 4.15

Sex wise marital status and Primary activity status

Primary Activity Status	Marital Status							
	Currently Married		Unmarried		Widow		Separated/Divoced	
	Male	Female	Male	Female	Male	Female	Male	Female
Employed	92.3	19.3	44.6	12.2	60	27.3	82.1	14.5
Unemployed	0.6	0.30	11.4	9.4	0	0.7	3.6	1
Students	0	0.60	40.5	63.7	0	0	0.	2.3
House work	0.10	76.8	0.6	7.2	0	58	7.1	80.6
Others	7.10	2.9	2.9	7.5	40.	14	7.1	1.6

Source: Based on IHDS data 2011-12

Table 4.15 shows that among married males, 92.3 percentage are employed while that female is only 19.3 percentage. But while considering the housework, it is seen that 76.8 percentage of married women reported that their primary activity status is doing housework only. In the case of males, this is only 0.1 per cent. This clearly shows a gendered division of labour. The entry into the labour market is highly influenced by the marital status of males and females. This fact is important while analyzing productivity. The gendered division of labour is visible in the unmarried category also. It is already mentioned that the level of education for females are higher when compared to males, In the unmarried category majority of women are reported to be in the student category, while male gender roles may be the reasons for their higher levels of participation in the labour market.

4.3.5. English Language Ability and Employment Status

Colonial heritage and recent decades of globalization give importance to the English language. English language ability can be treated as a form of human capital development (skill). It is because individuals or parents are either directly or indirectly investing in English language ability, in the form of monetary or non-monetary form. The study of Rani (2014), Azan, Chin and Prakash (2011) reports that English language ability influences the earnings of the individual workers.

Hence the study considered English language ability may be one of the factors that determine the employment status of the workers. In Table 4.16, the association between the ability to use English language and employment status is given. The knowledge level is given into three categories on the basis of the level of knowledge fluent, little and none.

Table 4.16

Activity status and English language ability

Primary Activity Status	English ability		
	None	Little	Fluent
Employed	45.9	43	46.3
Unemployed	1.3	3.6	7.3
Students	3.8	17.6	25
Housework	41.8	32.8	18.3
Others	7.2	3.1	3.1

Source: Based on IHDS data 2011-12

Table 4.17 shows it is evident that English language ability is not an important factor in deciding job market entry. But the interesting fact is that when language ability increases, the percentage of persons who are primarily involved in household work decreases and the unemployment percentage increases. This may be due to the lower availability of skilled jobs in Kerala's labour market which needed English language ability as a qualification.

Table 4.17

English language ability and Employment status

Employment Status	English ability		
	None	Little	Fluent
Regular salaried	14.2	32.4	78.9
self-employed	21.	18.8	15.
Casual labour	64.8	48.8	6.

Source: Based on IHDS data 2011-12

When considering the types of jobs and English language ability, it is interesting to note that those who are fluent in the English language, opt for regular salaried jobs and the majority who are not fluent in the English language are doing casual work. In the case of self-employed English language ability does not seem to be an influencing factor.

4.3.6. Health and Activity Status

The World Health Organization (WHO) Commission on Social Determinants of Health highlighted that fair employment and good working conditions provide financial security, enhanced social status, and personal development which is protective for mental and physical health (Marmot et al,2008). Kerala has achieved remarkable progress in human development, which is reflected in the high levels of education and health of its population. The uniqueness of the Kerala model development is the achievement in the education and health sectors (Ibrahim Cholakkal,2015). The study health is measured by the Adult daily living status of the workers.

Table 4.18

Activity status and Health (15-60)

Primary Activity Status	Adult daily living		
	No difficulty	With difficulty	Unable to do it
Employed	45.1	12.2	25
Unemployed	3.1	4.1	0.
Students	12.8	0	0
Housework	34.7	38.8	25.
Others	4.3	44.9	50.

Source: calculated from IHDS data 2011-12

Table 4.18 shows that in Kerala, health status is one of the important determinants of the productivity of a person is concerned. Maybe due to a lack of proper job opportunities, the majority of unhealthy persons are out of the labour force. Among healthy persons, 48.2 percentage are in the labour force, while of unhealthy persons only 16.3 percentage are in the labour force. It may be due to the

pain and palliative activities and other voluntary organizations' involvement, those who are 'not able to do category' also some members are working. The number of persons may be very low in this category; hence we cannot reach a conclusion from this result. In analyzing productivity, the involvement in labour market is one of the important prerequisites.

Table 4.19

Sex-wise ADL status of Kerala

Adult daily living	Sex	
	Male	Female
No difficulty	99	98.3
With difficulty	0.7	1.6
Unable to do it	0.3	0.1

Source: calculated from IHDS data 2011-12

Table 4.19 shows that the health status of males and females are almost the same. In our sample, about 99 percentage of the sample population does not have any health problem and the majority of the persons who have any health issue are not involved in labour market activities, the inclusion of health status variable for job preference or productivity analysis has issues related to lack of a sufficient number in our sample.

Table 4.20

Sex-wise Activity status and Health status (15-60)

Primary Activity Status	Adult daily living (age 15-60)			
	No difficulty		With difficulty	
	Male	Female	Male	Female
Employed	75.4	18.2	21.4	8.6
Unemployed	4.4	1.9	14.3	0
Students	14.7	11.1	0	0
Housework	0.3	65.2	7.1	51.4
Others	5.2	3.6	57.1	40

Source: Calculated from IHDS data 2011-12

Table 4.20, shows the sex-wise activity status of individuals based on health status. It is already discussed and is seen from Table4.6 that females' labour force participation rate is very low in the normal case and in the case of females who are having some health issues, their labour market participation is again reduced. Health status very much influences on employment of a person. For males with no difficulty, 75.4 percentage employed whereas a male with difficulty this percentage was only 21.4 percentage.

Table 4.21

Health and employment preference

Employment Status	Adult daily living	
	No difficulty	With difficulty
Regular salaried	30.9	16.7
self-employed	19.2	33.3
Casual labour	49.9	50

Source: calculated from IHDS data 2011-12

As it is already discussed health status is one of the important determinants of the employment status of a person is concerned, and the type of jobs preferred by persons with different health statuses reveals another picture. Those who are having health issues are not getting many regular salaried jobs, and the majority are depending upon casual jobs or self-employed jobs. It is understandable that in the private sector regular salaried jobs, healthy persons may have some preference while only in the government sector, due to some reservations, some are having health issues may get absorbed. But due to economic compulsion unhealthy persons have to depend upon self-employed and casual jobs for their survival.

Table 4.22

Sex and health-wise employment status

Employment Status	Adult Daily Living			
	No Difficulty		With Difficulty	
	Male	Female	Male	Female
Regular Salaried	26	49	33.3	0
self-employed	22.3	7.9	66.7	0
Casual labour	51.8	43.1	0	100

Source: Calculated from IHDS data 2011-12

Table 4.22 shows that the highest percentage of no-difficulty females are engaged in regular salaried, and they also participate in casual work. Self-employment participation is low. while considering with difficulty females all of them are engaged in casual work. In the case of unhealthy men, some are engaged in regular salaried and the majority are in the self-employed category. Female, the only option is casual work.

By analyzing the employment profile of Kerala, it is clear that the improvement in education and health status is favorably affecting the selection of type employment of the workers. The next section discusses the difference in the probability of selecting one particular job status by different genders, different social classes, education classes, and health classes.

4.4. Human Capital Development and Probability of Preference of Type of Employment.

This session analyses the probability of different sections of workers in selecting different types of jobs by using logistic regression where multi-nominal regression analysis is used.

Logistic regression is a regression, its dependent variable that is a categorical variable, and independent variables that are continuous or categorical. Since there are more than two categories of dependent variable; employment status is categorized into regular salaried, self-employed, and casual workers. So, the study used multinomial logistic regression to predict the probability of selecting different

types of employment of the workers on the basis of age, education, gender and religion, Health status is not taken into consideration due to a lack of a sufficient number of samples to do a statistical analysis.

The result of the multinomial logistic regression is given in Tables. In Appendix Table 1.1, model fitting information is given. Goodness–of–fit table is given in Appendix Table 1.2. Here model is having a p-value that is not significant (.873) hence we can accept the model as it fits in our data set. Appendix Table 1.3 gives the Pseudo R-Square value for our model. The Likelihood ratio test results are given in Appendix Table 1.10. Out of the six predictor variables considered in the present study, five variables significantly predict the outcome variable. The multinomial output table is given in Table 4.23. The first part of the table gives the difference in the probability of different sections of independent categorical variables to select regular salaried jobs when compared to causal jobs. In the second part, the probability of the different sections of the independent categorical variables to select a self-employed job when compared to the casual job is given.

Table 4.23

MNLR Parameter Estimates

Employment Status		B	Std. Error	Wald	Df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Salaried	Intercept	4.507	1.161	15.069	1	0			
	AGE	0.001	0.014	0.005	1	0.944	1.001	0.973	1.03
	Male	-1.08	0.2	29.149	1	0	0.34	0.23	0.503
	Female	0b	.	.	0	.	.	.	.
	Hindu	0.253	0.212	1.417	1	0.234	1.287	0.849	1.951
	Muslim	0.862	0.278	9.609	1	0.002	2.367	1.373	4.081
	Christian	0b	.	.	0	.	.	.	.
	Primary and below	-6.334	1.19	28.337	1	0	0.002	0	0.018
	Middle	-6.301	1.056	35.589	1	0	0.002	0	0.015
	Secondary	-5.208	1.017	26.241	1	0	0.005	0.001	0.04
	HSS	-3.623	1.026	12.465	1	0	0.027	0.004	0.2
	Graduates	-2.182	1.041	4.389	1	0.036	0.113	0.015	0.869
	Post Graduates	0b	.	.	0	.	.	.	.

Employment Status		B	Std. Error	Wald	Df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
	Intercept	-1.622	1.401	1.34	1	0.247			
	AGE	0.053	0.016	10.977	1	0.001	1.054	1.022	1.088
	Male	0.537	0.3	3.214	1	0.073	1.712	0.951	3.08
	Female	0b	.	.	0	.	.	.	.
	Hindu	-0.304	0.23	1.755	1	0.185	0.738	0.471	1.157
	Muslim	1.087	0.27	16.261	1	0	2.966	1.748	5.03
self employed	Christian	0b	.	.	0	.	.	.	.
	Primary and below	-3.767	1.443	6.811	1	0.009	0.023	0.001	0.391
	Middle	-3.234	1.269	6.49	1	0.011	0.039	0.003	0.474
	Secondary	-2.161	1.234	3.067	1	0.08	0.115	0.01	1.294
	HSS	-1.018	1.247	0.666	1	0.414	0.361	0.031	4.161
	Graduates	-0.181	1.264	0.02	1	0.886	0.835	0.07	9.945
	Post Graduates	0b	.	.	0	.	.	.	.

a. The reference category is Casual labour.

b. This parameter is set to zero because it is redundant.

Table 4.23 shows the probability of select regular salaried employment with respect to the casual workers, by age, gender, religion and education status. The influence of age in deciding employment status seems to be insignificant as the p-value is higher than 0.05.

While analyzing the results, it is seen that gender is one of the important factors which influence the selection of regular salaried employment. It is given that a male member has only a 34-percentage chance to become a regular salaried employee when compared to a female in the age group 25 to 45 in Kerala.

When comparing religion, it is seen that a Muslim is having 2.36 times more chance to become a regular salaried employee when compared to the Christian community. In the case of Hindus, it is given that they have 1.28 times more chance to become a regular salaried employee when compared to Christians, though the coefficient is not significant.

When compared to postgraduates, primary and below have only a 2-percentage probability of becoming salaried employee. when compared to postgraduates, the chance to become a regular salaried employee of middle, secondary and higher secondary education and graduates are 0.2 percentage, 0.5 percentage, 2.7 percentage and 11.3 percentage respectively. This result clearly shows that education is one of the important factors which determine the employment status of a person who is regular salaried. The result confirmed the result of the primary analysis which we had done by using Table no 4.9 and Figure 4.1.

The second section of Table 4.23 shows the probability of independent variables in selecting self-employed jobs when compared to casual jobs. The result shows that age and religion are significantly related to the selection of a job as self-employed when compared to casual workers. The levels of education and gender are not significant factors in determining the probability of becoming self-employed with respect to casual workers. It is seen that an increase in age to one year will increase only a 0.5 percentage more chance of becoming self-employed when compared to casual work. It may be due to the fact that casual work is not

guaranteed a permanent job, the expenses and responsibilities of life are increasing with age, and deteriorating health conditions, etc.

It is seen that when compared to the Christian community, the Muslim community is 2.96 times more likely to obtain self-employment than casual work. It is seen that a Hindu respondent had a 73.8 percentage probability of obtaining self-employment to casual work when compared with the Christian community but this result is not statistically significant.

From the above analysis, it is seen that gender, religion, and level of education are the factors which significantly influence the probability of selecting regular salaried employment when compared to causal work. Age and religion are the factors significantly influencing self-employment preference when compared to casual work.

4.5. Discussion

Gender significantly influences the employment status of the workers. first of all, the preliminary analysis shows that the labour force participation of females is very low in Kerala. The majority of the females (64.8 percentage) are doing household work alone as their primary activity status. While analyzing the employment status of the females, they preferred regular salaried employment. Nearly half of the working women are (45.5 per cent) in regular salaried employment whereas male this percentage was only 24.4 percentage (Table 4.2). The Multinomial logistic regression results also show that when compared to a female employee, a male employee has only a 30 percentage chance to become a regular salaried when compared to a casual job. It may be due to the high level of education status of females when compared to males. The study of Mathew (1995), Mitra & Singh (2006), and Mallika (2011) also found the same result, that the females in Kerala are more engaged in salaried employment and their proportion of self-employment and casual labour is low.

It is seen that religion is one of the important influencers in deciding the preference of the types of employment of the workers. The primary analysis shows

that the Hindus, Muslims and Christians are nearly equal in participation in regular salaried employment. The multinomial logistic regression results also reveal that; the Muslim respondent is more likely to obtain a salaried job to casual job than the Christian respondent. While comparing the probability of selecting self-employed to casual labour, the Muslim community has more chance than Christians. This shows that Muslims prefer regular salaried jobs or self-employed, while Christian communities prefer more casual jobs. The study of Mansoor (2021), says that in India compared to Hindus, Muslims are lesser in regular salaried and they prefer Self-employment. The present study also confirms the result. The study of Hernandez and Noruzi et. al. (2010) reports that entrepreneurship is in fact a part of Islamic culture and a lot of Muslims that are successful entrepreneurs in the world and Islam always invite all Muslims to be innovative, entrepreneur and active. There are a number of other reasons for Muslims to prefer self-employment. Das (2000) and Mhaskar (2018) report discrimination faced by Muslims in the salaried labour market is the reason for their over-involvement in self-employment activities. Salman (2022) argued that the presence of social networks among Muslims and the social respect they received through the involvement of self-employment may be the reasons for their preference for this type of job when compared to a casual job. It is seen that educated Muslims prefer salaried jobs to casual work. This may be due to the high socio-economic status which is existing in India for salaried work, especially among government jobs.

The preliminary analysis shows that educated persons prefer more regular salaried jobs. It is matched with the study results of Mathews (1995) in Kerala that educated people prefer salaried work and others prefer self-employed or casual work. The study of Ali and Jalal (2018) in India also says that higher education and employment status are significantly related to employment status. But while considering statistical analysis, multinomial regression results level of education is a significant factor for predicting regular /salaried work.

Health is the other human capital variable used in the study. Health status is also an important determinant of the employment status of a person. Among healthy

persons, 48.2 percentage are in labour force, while for unhealthy persons only 16.3 percentage are in the labour force. The study by Gudlavaleti and Jhon (2014) says that people with health disabilities had a significantly lowering employment rate. The type of jobs preferred by persons with different health statuses reveals that the highest percentage of no-difficulty females are engaged in regular salaried, and they also participate in casual work. Self-employment participation is low. while considering with difficulty females all of them are engaged in casual work. In the case of unhealthy men, some are engaged in regular salaried and the majority are in the self-employed category. Female, the only option is casual work.

From the analysis, it is found that the majority of females are doing housework alone as their primary activity. It is seen that the percentage of higher education among females are higher than their male counterpart. This shows that females are getting more chances to study in higher educational institutions than males. This may be due to the gender role of a male as a primary breadwinner of the family and forced to enter the job market as early as possible. This gendered division of labour is visible while analyzing the activity status of females. It is evident that though they are educated, the majority of females are reported to do household work as their primary activity. The gendered division of labour and related domestic work burden along with the reproductive roles reduces the time and aspirations to do market work of females. Lower work participation of females may be due to another reason; the demand-supply mismatch created by the Kerala development experience of high social development in a low-growth economy. The educated Laboure's may not find suitable jobs which match their qualifications, due to lower economic development may create a discouraged worker effect. The analysis found that religion is another factor which influences the type of employment preference of the workers. Muslims are more preferred self-employment and salaried work compared to Christians. Cultural factors may be one of the reasons for this phenomenon. Muslims are successful entrepreneurs in the world. Hence there is a lot of social networks among Muslims which helps to do self-employment. The other reasons may be discrimination and marginalization of Muslims of the workplace of salaried work and push to Muslims to self-

employment. Another important finding is that educated persons prefer salaried work to casual work. Health status is also an important determinant of the employment status of a person than the preference for employment. The study rejects the first hypothesis (H_0) that there is no significant influence on human capital development and the type of employment preference of the workers in Kerala.

4.6. Conclusion

The study tries to analyses the important factors which influence the type of employment preference of the workers in Kerala. The study found that gender, religion and level of education are the important factors which influence the preference of type employment of the workers. The proportion of females with higher education is high compared to their male counterparts. This may be the reason for females prefer salaried jobs than self-employment and casual work. When compared to Christians, Muslims prefer self-employment to casual work may be due to cultural factors. The level of education is another important factor which influences the preference of employment status. As the level of education increases the workers are more preferred salaried employment and those less educated prefer casual work. In the next chapter, the factors which influence the productivity of the work in Kerala are discussed by using the earning function of Mincer.

CHAPTER 5

THE HUMAN CAPITAL DEVELOPMENT AND PRODUCTIVITY (EARNINGS) OF WORKERS IN KERALA

5.1. Introduction

The previous chapter analyzes the employment preference of workers in Kerala and it is found that education is one of the important positive determinants of employment status and determinant in preference of employment. The worldwide human capital (education) is considered one of the important determinants of productivity or earnings. The present chapter tries to analyze the effect of human capital on labour productivity (earnings) of workers, in the empirical framework of the human capital earnings function of Mincer, by using the IHDS 2011-12 data of Kerala. The study tests the hypotheses that human capital development has no significant effects on the labour productivity (earnings) of the workers in Kerala. The present chapter is divided into three sections. The first section discusses the age earnings profile of the labour force in Kerala. The second section discusses the descriptive analysis of the earnings of workers. The third section analyses the effect of human capital on the earnings of the workers in Kerala.

5.2. Age- earnings Profile of Labour Force in Kerala

The age-specific earnings profiles show the level of education by the different age groups and their respective earnings. Mincer (1958) also found that age–earnings profiles revealed two distinct correlations: income increases with increasing skill and experience over time and in later years ageing often decreases productive performance and income declines.

Table5.1

Age earnings profile of the workforce in Kerala

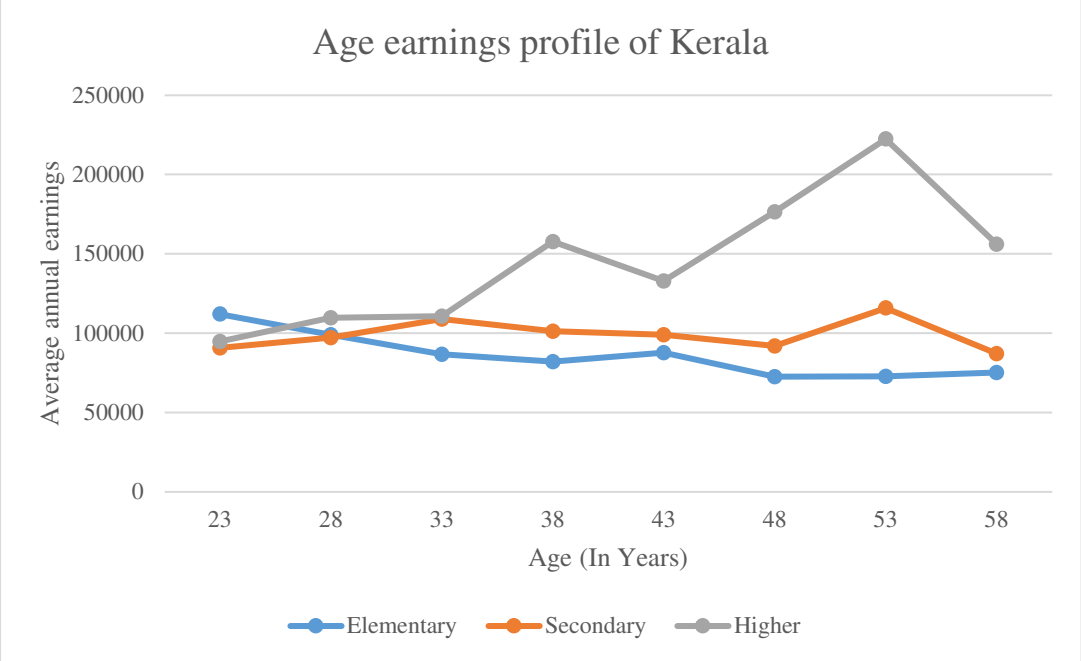
Age group	Elementary	Secondary	Higher
21-25	112050	90661	94779
26-30	98972	97219	109706
31-35	86696	108902	110725
36-40	82038	101233	157801
41-45	87806	99073	132840
46-50	72646	92013	176481
51-55	72744	115912	222397
56-60	75290	87137	156000

Source: Authors calculated from the IHDS data 2011-12

The age-specific earnings profiles by level of education of Kerala are presented in Table 5.1 and graphically depicted in Figure 5.1. The age–education–income profile based on Kerala largely confirms above mentioned characteristics. The profile presents that income is positively correlated with education and age. The earnings profile of higher educated is steeper than anything else that is, highly educated individuals earn more than less educated individuals of all ages. The average lifetime earnings can be seen to increase steadily as the level of education of workers increases. The disparity of earnings increases grows larger as the level of education increases. The general shape of the basic earnings profile with respect to age and education has appeared like the predictions of human capital theory, which is a positive but declining rate of earning growth.

Figure 5.1

Age earnings profile of the workforce in Kerala



5.3. The Descriptive Analysis of Earnings of Workers by Using IHDS Data.

Before going to statistical analysis, in this section, the study used a preliminary analysis of the data set. The differences in level of education, gender differences, social differences and employment sector differences on annual mean earnings of the workers in Kerala are discussed in this session.

5.3.1 Annual Mean Earnings of the Workers based on their Education and Employment Status

The human capital theories of Mincer and Becker say that as the level of education increases earnings of the persons or productivity also increases. The study of Aneesh (2015) in Kerala also found that the level of education and earnings are positively correlated.

Table 5.2

Mean annual earnings based on level of Education and employment status

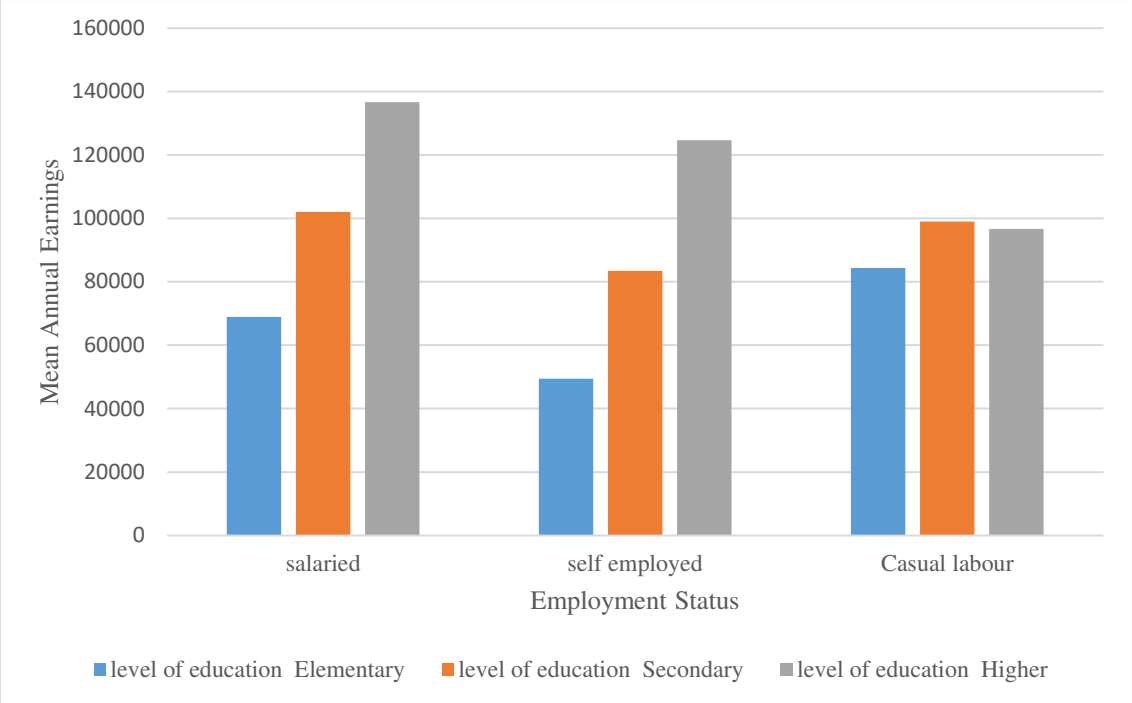
Level of education	Employment status		
	Regular /salaried	self employed	Casual labour
Elementary	68900	49389	84403
Secondary	102025	83478	98991
Higher	136684	124700	96641

Source: Based on IHDS data 2011-12

From Table 5.2 and Figure 5.2, it is seen that as the level of education increases, the earnings of the regular /salaried and self-employed workers increases but in the case of casual workers, not much difference is seeming in between higher educated and middle-educated. From this data, it is seen that level of education is one of the important determinants of the level of earnings. That means the level of education increases the productivity of workers.

Figure 5.2

Level of Education wise employment status and Earnings



Source: Based on IHDS data 2011-12

5.3.2 Gender Pay Gap and Mean Annual Earnings of the Workers

The gender pay gap in India refers to the difference in average wages or earnings between men and women in the country. Most of the national and international studies are reported the gender gap in earnings. The number of studies highlighted this issue Bhandari (2006), Agrawal (2012); Rani,G (2014), Jocab,(2017).

Table 5.3

Annual earnings based on Sex and Level of education

Level of Education	Sex	
	Male	Female
Elementary	94657	28534
Secondary	109750	40264
Higher	149104	101857

Source: Based on IHDS data 2011-12

Table 5.3 shows, the gender difference in earnings of the workers in Kerala. It is seen that though the education level is the same, males earn more than females in all levels of education. It clearly indicates the serious issue of the gender pay gap in Kerala. The highest gap is seen in the elementary level and it is comparably lesser in higher educated. This may be due to the nature of jobs in less educated and higher-educated females doing in Kerala.

Table 5.4

Annual earnings on different type of employees based on Sex

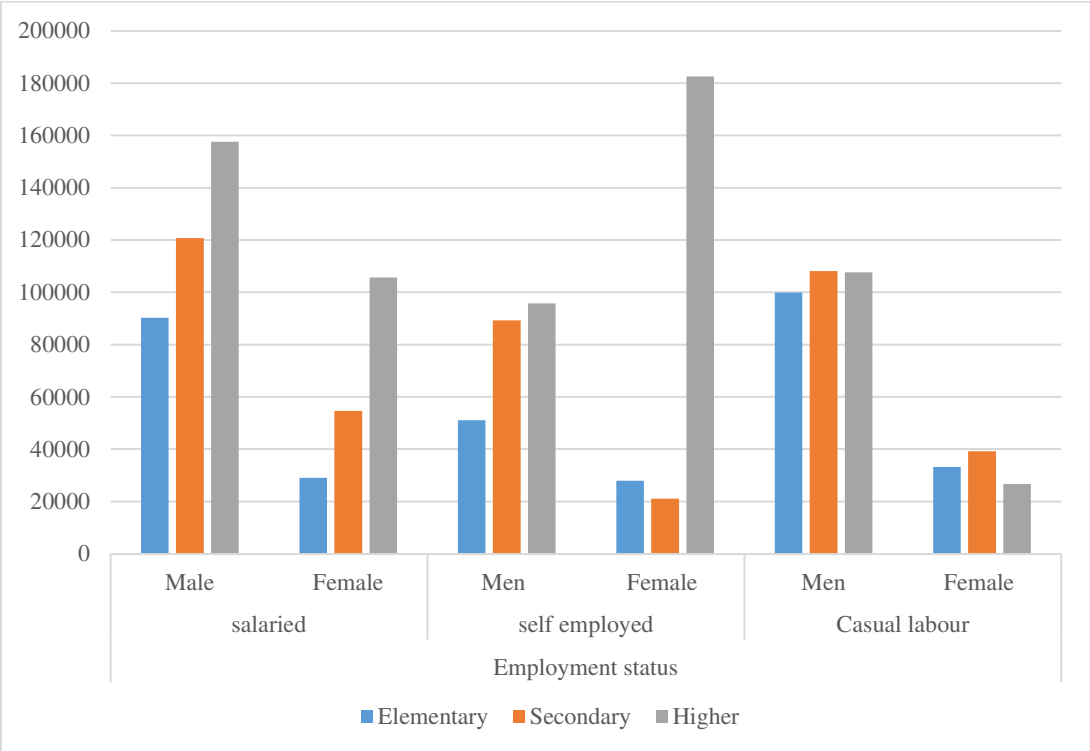
Level of education	Employment status					
	Salaried		self employed		Casual labour	
	Male	Female	Men	Female	Men	Female
Elementary	90244	29057	51102	27975	99902	33255
Secondary	120773	54661	89279	21118	108075	39145
Higher	157536	105618	95800	182500	107689	26667

Source: Based on IHDS data 2011-12

Table 5.4 seen that gender difference in earnings exists in both regular /salaried workers, self-employed and casual workers. The highest gender difference exists among the casual workers. The higher-educated female regular salaried workers earn more than the higher-educated female casual workers. Interestingly it is noted that higher educated self-employed females' earnings are higher than their male counterparts. This result is having a lot of policy level implications. Though the gender pay gap is visible in all the other categories, self-employed categories can be the better measure of actual productive capacity. It is to be noted that less educated or middle educated females are getting the lowest salaries when compared to casual labour categories. From this, it can be concluded that the government should give more emphasis to create self-employment opportunities for higher educated females rather than giving importance to less educated. Less educated persons can earn more in other types of casual jobs. In the Figure 5.3 clearly the difference in earnings between the males and females.

Figure 5.3

Sex wise difference Level of education and mean annual earnings in Kerala



Source: Based on IHDS data 2011-12

5.3.3 Social Class-wise Difference in Earnings of Kerala.

Caste plays a role at every stage of an economic life, in school, university, the labour market and into old age (Munshi,2019). Madheswaran & Attewell, (2007) found that caste and religious identity have a detrimental effect on wages of individual from lower castes and Minority religion.

Table 5.5

Social class wise difference in earnings of the workers

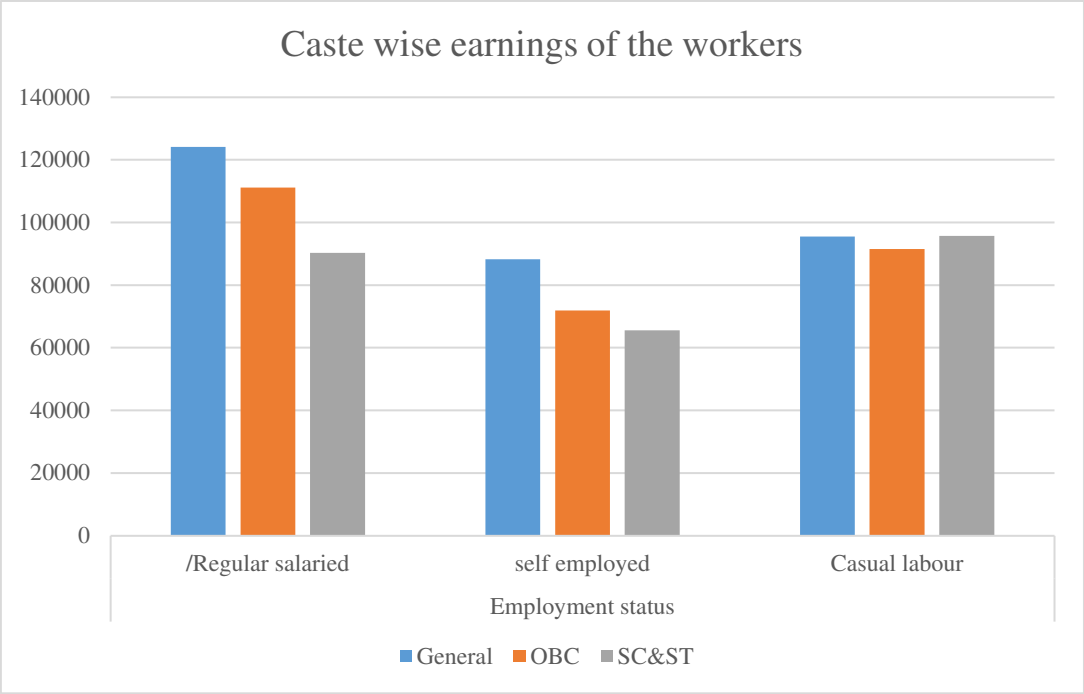
Social class	Employment status		
	Regular /salaried	self employed	Casual labour
General	124131	88289	95449
OBC	111099	71904	91508
SC&ST	90242	65525	95676

Source: Based on IHDS data 2011-12

Table 5.5 reveals that there is a disparity in earnings of the workers from different social classes of the regular salaried workers. In regular salaried workers, the general caste earns more than the SC/ST community. In the case of self-employed also general caste earns more than the OBC and SC/ST caste. In the case of casual workers, there is not much social difference is visible. From this analysis, it may be concluded that though those who are doing regular salaried jobs, the general category may dominate in highly paid jobs when compared to lower caste people. This may be the social difference in the level of education. It is already discussed in the fourth chapter that the percentage of higher educated is higher in the general category when compared to other classes. Moreover, it is already seen in this chapter that earnings and education are positively related with the regular salaried and self-employed categories. These together may be the reason for higher earnings for the general category and lower earnings for SC and ST communities.

Figure 5.4

Social class wise difference in earnings of the workers



Source: Based on IHDS data 2011-12

Figure 5.4 also shows the clear caste wise difference in earnings of workers.

5.3.4. Sector wise Difference in Mean Annual Earnings

Table 5.6 provides the gender difference in earnings of workers who are working under different types of employees. It is visible that a huge difference is seen in the earrings of the government sector and private sector employees. For both males and females, private employees are paying lesser salaries than the government. This may be the reason for government job preference.

Table 5.6

Sector wise difference in earnings

Sector	Sex	
	Male	Female
Government	175539	129512
Private	97648	34628

Source: Based on IHDS data 2011-12

Hence the sector of work may be an important determinant of the earnings of workers. By analyzing the earnings profile of Kerala, it is clear that the level of education, gender, caste and sector of employment are influencing the mean annual earnings of the workers in Kerala. So, the next section provides a statistical analysis of the above-mentioned details

5.4. Effect of Human Capital on the Earnings of the Workers in Kerala

Several research studies have been conducted concerning the effect of human capital on earnings or education on the earnings of individuals. The studies considered human capital such as education is considered as one of the most important determinants of earnings of the individuals. The factors that determine the earnings of individuals can be divided into three main categories such as; the socio-economic background of the earner, demographic factors, and employment-related factors etc. (Bhardwaj,2013). The study examines the influence of education and other important variable such as gender, caste, sector of employment and number of months engaged in the last year on influence the earnings of regular salaried, self-employed, and casual workers in Kerala.

5.4.1 The effect of education, socio-demographic and job-related variables on earnings of the regular salaried workers.

Mincer's basic and extended human capital earning functions are used to analyze the factors which influence the earnings of the regular salaried workers of Kerala. The details regarding the regression and its equation are given in the methodology chapter. The Six alternative regression equations are used for the analysis. Table 5.7 shows the result of the mentioned six alternative specifications of the regression equation fitted in the selected variables from the IHDS data.

Table 5.7

Estimated earnings function of regular salaried workers in Kerala

Salaried workers	1	2	3	4	5	6
Variable	Years of schooling	Experience& Experience Square	Gender	Caste	Sector of employment	Work months last year
(Constant)	10.34 (.00)	9.52 (.00)	8.747 (.00)	8.661 (.00)	8.467 (.00)	7.41 (.00)
Years of schooling	0.083 (.00)	0.102 (.00)	0.121 (.00)	0.115 (.00)	0.098 (.00)	0.073 (.00)
Experience		0.06 (.01)	0.064 (.00)	0.058 (.00)	0.076 (.00)	0.063 (.08)
Experience square		-0.001 (.07)	-0.001 (.03)	-0.00 (.06)	-0.002 (.02)	-0.001 (.02)
dummy male			0.729 (.00)	0.724 (.00)	0.675 (.00)	0.543 (.00)
Dummy general				0.256 (.01)	0.355 (0.10)	0.307 (.00)
Dummy OBC				0.258 (.00)	0.283 (.02)	0.231 (.02)

Salaried workers	1	2	3	4	5	6
Variable	Years of schooling	Experience& Experience Square	Gender	Caste	Sector of employment	Work months last year
Dummy Govt					0.532 (.00)	0.448 (.00)
Working month						0.152 (.00)
R square	0.106	0.133	0.351	0.365	0.485	0.638
F value	42.85 (.00)	18.47 (.00)	48.67 (.00)	34.29 (.00)	26.64 (.00)	43.37 (.00)

Table 5.7 shows the result of the basic and extended human capital earning equation. In the first regression model education is the only independent variable. Years of schooling is taken as a proxy for education attainment. It is found that an additional year of schooling will increase the earnings of the individuals by 8.3 percentage. When schooling, experience, and experience square are added to equation (2) the explanatory power of the model is increased to 13.3 from 10.6. Mincer's original equation includes only these variables. As it is already seen that in Kerala, gender, social class, working months in last year and sector of employment are relevant variables which decides the earnings of a person is concerned. Hence this study used a final model which includes these variables along with education, experience, and experience square. While incorporating these variables together the predictability increases to 63.8 percentage.

In the second model, experience and experience square added to the model, the influence of education on earnings increases to 10.2 percentage. While including gender as an independent variable, the influence of education increases to 12.1 percentage. While adding social class to the model, the influence of education on income decreased to 11.5 percentage. While adding the sector of employment to the model, the influence of education on income decreased to 9.8 percentage. While adding working months in the last year in this model, the influence of education on income decreased to 7.3 percentage. From this analysis it can be concluded that education is having a positive influence on the earnings of an individual is concerned. But the influence is not much higher when compared to other variables.

When considering experience, (in the last model) a one-year increase in experience contributes only 6.3 percentage increase in earnings. Experience square shows a negative influence creates the possibility of a parabolic age earning profile. The age category which the model has taken is 25 to 45 (most productive age) may be the reason for lower significance in the case of experience squire.

The years of schooling increase in one unit, there is an increase of 10.2 percent in income or earnings for a regular salaried employee. But the Explanatory power of the model is only 10.6 percentages in case of regular salaried workers. But

the study of Bhardwaj (2013) in Himachal Pradesh reveals that while taking schooling as the only explanatory variable the explanatory power of the model was 45 percentages. When they added the variables like experience and experience square, the predictable capacity of the model increased to 62 percent. In our model for Kerala, education, experience and experience square can explain only 13.3 percentage of the variability in income of regular salaried employees. This shows that in Kerala, there are a number of other factors which influence the earning capacity of the regular salaried workers. while taking the variables like gender, caste, sector of employment and working months the predictability increased to 63.8 percentage. This shows that education (years of schooling) is not much an influencing factor in deciding the productivity of workers. This may be due to universalization of education in Kerala, compared to Himachal Pradesh and other countries. As it is already mentioned that educated persons prefer to opt more regular salaried employment than less educated and that may be the reason for the lower influence of education on earnings of regular salaried employment. Though we incorporated gender, caste, sector of employment, and number of working months in the model the predictability was only 63.8 percent. Hence it is important to check some more variables in determining the productivity. In the next chapter the study incorporated some more variables while analyzing the productivity analysis.

While adding gender in this model, it is surprising that when comparing males to females, the income increases to 72.9 percentage. This means, gender is an important variable which determines the earnings of regular salaried job in Kerala. As it is already mentioned that education status of females is higher, and male is getting more salary while compared to female. From this analysis, it can be concluded that it is not years of schooling or education, but the gender which decides the productivity of an individual is concerned. The result reveals that gender is the one of the significant factors influence the earnings. Agrawal (2013) found that gender and social discrimination are key issues in the Indian labor market. The gender difference in earnings is clearly shown in the analysis. Psacharopoulos and Veleze (1992) in Colombia also found that males earn on average a third more than

females. From this, it is seen that gender is one of the important factors which influence the level of earnings irrespective of the country and time period.

Table 5.8

Gender difference in Average earnings by different streams of education

Higher Degree	Sex	
	Male	Female
Incomplete	124506	57953
BA, BSc, BCom, etc.	154299	115454
BE, B.Tech.	135145	56000
MBBS/BAMS	203600	.
Masters,Ph.D.	187177	113136
MD, Law, MBA, CA.	207320	144800
Diploma <3 years	113929	58330
Diploma 3+ years	108700	90267
Other	189231	147600

Source: Based on IHDS data 2011-12

The wage discrepancies between men and women workers which was not able to explained by human capital theory of Becker, that is, gender differences in wages are due to differences in the skills, abilities, and knowledge acquired by the workers. But in the case those females in Kerala who could achieve high educational qualifications, receive lesser salary while comparing their male counterparts. Table 5.8 shows that those male and female with same education is getting significantly different salary cannot be explained by the productivity argument of Becker. Males in any stream get higher earnings than females. This may not be due to high level of productivity because both are studying the same syllabus and are doing the same practical and undergoing the same type of evaluation.

While adding social class it is seen that compared to SC, general category is getting 25.6 percent and OBC category is getting 25.8 percent more salary, it is very relevant as far as a progressive state like Kerala is concerned. Table 5.9 shows that same level of education but the earnings general caste is high than the SC and OBC.

Education is not that determines the productivity but caste and gender determine the earnings of a person is really interesting for a social scientist is concerned in a state where claimed to be progressive with high human development and high social development.

Table 5.9

Social class wise difference in Average earnings by different level of education

Education	Social class		
	General	OBC	SC&ST
Secondary and below	100141	98307	91633
Above HSS	127291	126125	100158

Source: Based on IHDS data 2011-12

The study of Madheswaran and Attewell (2007) India reveals that the rate of return to education for SC/ST workers are considerably lower than the Non-SC/ST workers. Their analysis says that it is because difference in human capital endowment and the discrimination in the market place (15 percentage). Das and Dutta (2007) propound that caste is still an influential factor in deciding how individuals are remunerated in the wage labor market. Their study found that the extent of the wage gap is significant in the case of regular workers, and one-third of the gap is attributable to the unequal treatment of scheduled caste workers relative to general caste workers.

While adding the sector of employment, it is seen that compared to private sector, government sector workers getting 53.2 percent more salary. This is an important reason for the preference of government jobs by educated unemployed.

As a state like Kerala, the availability of employment is very low compared to developed countries, the number of working months is one of the important variables which determine the earnings of the worker in a regular salaried job. It is given that an increase in one-month addition in working days, the income increases 15.2 percentage. There is natural that the number of working days increases the salary earned in a state like Kerala where unemployment is one of an important social issue.

In all six OLS wage specification models, the explanatory variables are statistically significant. The R^2 value of the basic human capital earning function of the mincer to the seventh extended mincer earning function keeps improving in every specification. The study rejects the hypothesis that there is no significant effect of human capital development (years of schooling) on the labour productivity (earnings) of the regular salaried workers in Kerala. The next section discusses earning function of the self-employed workers.

5.4.2 The effect of education, socio-demographic and job-related variables on earnings of the self-employed workers.

Mincer's basic and extended human capital earning functions are used to analyze the factors which influence the earnings of the self-employed workers of Kerala. Like the regular salaried, seven alternative regression equations are set for the analysis. But running the first regression equation that the influence of years of schooling on earnings of the self-employed workers in Kerala. The equation estimated the average rate of return to education of the self-employed workers is 4.5 percent which is statistically not significant. The F value of the model is >.05, which indicates that the model is not well fit and further equations are not well fit. So, the model is not applicable in the case of self-employed workers in Kerala in the age group of 25-45. The study accepted the third hypothesis that there is no significant effect of human capital development (years of schooling) on the labour productivity of the self-employed workers in Kerala.

Table .5.10

The effect of human capital on earnings of self-employed workers.

Self employed	1	2
Variable	years of schooling	Basic
(Constant)	10.61 (.00)	10.46(.00)
Years of schooling	.045 (.327)	.053 (.426)
Experience		.001(.689)
Experience square		8.21(.989)
R square value	.024	.025
F value	.986 (.327)	.323(.809)

5.4.3 The effect of education, socio-demographic and job-related variables on earnings of the casual workers.

Like regular salaried workers, the important factors affecting the earnings of casual workers are determined by using the basic and extended human capital earnings functions of Mincer. Table 5.10 shows the result of the mentioned six alternative specifications of the regression equation fitted in the selected variables of the IHDS data of the casual laborers in Kerala.

Table 5.11

The effect of human capital on earnings of casual workers.

Casual workers	1	2	3	4	5	6
Variable	Years of schooling	Experience & Experience Square	Gender	Caste	Sector of empt	Work months last year
(Constant)	11.22 (.00)	11.66 (.00)	10.396 (.00)	10.42 (.00)	10.19 (.00)	9.135 (.00)
Years of schooling	0.011 (.41)	-0.018 (.27)	-0.033 (.01)	-0.032 (.01)	-0.22 (.170)	-0.015 (0.22)
Experience		0.001 (0.973)	0.022 (.23)	0.022 (0.24)	0.026 (0.25)	0.023 (0.19)
Experience Square		0.0 (0.486)	-0.001 (.11)	-0.001 (0.12)	-0.001 (0.14)	-0.001 (0.15)
dummy male			1.30 (.00)	1.304 (.00)	1.42 (.00)	0.913 (.00)
Dummy general				-0.057 (.46)	-0.108 (0.24)	-0.102 (0.153)
Dummy OBC				-0.055 (.363)	-0.090 (0.19)	-0.116 (0.00)
Dummy Govt					.573 (.09)	0.336 (0.20)
Working in month in the last year						0.144 (.00)
R Square	0.001	0.018	0.418	0.419	0.445	0.67.5
F value	0.672 (.413)	3.13 (.025)	94.45 (.00)	62.99 (.00)	47.91 (.00)	104.53 (.00)

Table 5.11, the first column shows regression results of the influence of years of schooling on the earnings of a casual worker. The equation estimated the average rate of return to education of the casual workers is 1.1 percent which is statistically not significant. The F value of the model is >.05, which indicates that the model is not well fit.

When schooling, experience, and experience square are added to the equation (2) the explanatory power of the model is 1.8 percent. The result of the second regression equation shows a 1.8 percentage decrease in earnings by the one-year increases in the years of schooling of the casual labours but it is not statistically significant. The experience and experience square are not statistically significant in the case of casual workers. It is seen from the analysis that; education is not a significant factor in deciding the earnings of a casual worker. The preliminary analysis also shows this. It is matched with the previous study of Singhari and Madheswaran (2016) which shows that as years of schooling increase returns of casual laborers decrease. That means education is not an important factor determine the earnings of casual workers.

The dummy of the male was added into the third equation and the results show that the male earnings are more than 130 percentage compared to their female casual workers. The wage discrepancies between men and women workers which was explained by the human capital theory of Becker, that is, gender differences in wages are due to differences in the skills, abilities, and knowledge acquired by the workers. This may not be correct in the case of Kerala where female outperformed in education and skill acquisition when compared to their male counterparts. Hence, the gender difference in wages can be explained by some other reasons like household work and related difficulties for women to search and bargain market work. The gendered division of labour which we have seen in the fourth chapter should be one of the major reasons for the lower earnings by females. In the case of primary activity, the majority of females reported that they are doing household work alone, which is one of the signs of gendered division of labour. It is seen that more than 90 percent of married male members are reported to be employed while

that percentage was less than 20 for females. While the majority of married females reported to be housewives gives a clue that the gender stereotypes work in the labour market of Kerala, that creates males the primary breadwinners and females as a domestic worker. The study by Neog and Sahoo (2016) reveals that wage discrimination is significantly higher in informal employment compared to formally employed. Our result shows that higher wage difference exists among the casual workers of Kerala. The study of Shwetha (2017) also found that the gap in male-female wages is the lowest in regular service activities, where female workers get almost 80 percentage of the male wages. However, the gap is higher in casual manufacturing activities with approximately 34.90 percentage.

The social class added to the fourth equation, results show that general and OBC castes earnings are negative /decreasing compared to the SC caste. Though it is statistically not significant this clearly shows the influence of a social division of labour in this modern era also in a state like Kerala. The SC/ ST caste traditionally does low-pay casual workers and they are more willing to do casual work than others.

Equations five and six added to the job-related variables such as the sector of employment and number of months engaged in the last year. It is seen that the sector of work is not significant in deciding the earning of casual work. If an increase of one month's more work leads to a 14.4 percent increase in the income of a casual worker is concerned.

In all six OLS wage specifications, all explanatory variables are statistically significant. The value of R^2 from the basic human capital earning function of Mincer to the extended human capital earning function keeps improving in every specification. From this, it may be concluded that the years of schooling do not make any significant influence on the earnings of the casual workers. Hence the study accepted the fourth hypothesis that there is no significant effect of human capital development (years of schooling) on the labour productivity of the causal workers in Kerala. The caste and sector of employment significantly influence the earnings of the casual workers.

From the analysis, it found that productivity of workers is influenced by the level of education, gender, caste, sector of employment and working months in the last year. While analyzing the salaried workers, it is found that when education increases the possibility of getting a salaried job increases. Moreover, it is found that education and salary are positively related. In Kerala it is important to note that than the level of education, gender and social class influence the earnings of the workers. In Kerala the gender difference in earnings is may not be due to differences in the skills, abilities, and knowledge acquired by the workers. But in the case those females in Kerala who could achieve higher educational qualifications, receive lesser salary while comparing their male counterparts. Hence the gender difference in wages can be explained by some other reasons (cultural and social) like household work and related difficulties for women to search and bargain market work. The gendered division of labour which should be one of the major reasons for the lower earnings by females. In the case of primary activity, majority of females reported that they are doing household work alone, is one of the signs of gendered division of labour. It is seen that more than 90 percentage of married male members are reported to be employed while that percentage was less than 20 for females. While majority of married females reported to be house wives gives a clue that the gender stereotypes work in the labour market of Kerala, that create male the primary bread winner and female domestic worker. In Kerala it is to be important to note that higher educated self-employed female's earnings are higher than the self-employed males. Moreover, it is seen that the only category of females who can earn more than their male counterparts is from higher educated women who are doing self-employment. It may be due to the self-employment allow workers freer adjustment of work effort in response to changing the needs for market work income and household production. Caste also influences the earnings of the workers. In case of salaried workers, the general caste earns more than SC/ST category. It may be due to the differences in cultural or social capital differences in between different social classes than the human capital endowment. The SC/ ST caste traditionally does low-pay casual works and the patterns has not changed yet. The number of working months and sector of employment also influence the earnings.

5.6 Conclusion

The study analyses the factors influencing earnings of the workers in Kerala by using IHDS data 2011-12, in the human capital earning framework of Mincer. The study reveals that education, gender, caste, number of work months in the last year, and sector of employment are the important factors which influences the earnings of the regular salaried workers. In case of casual workers, gender and number of months engaged in the last year are the major variables influences the earnings. The level of education is negatively related to the earnings of casual workers. The predictability of Mincer's human capital earnings equation of regular salaried workers, is 58.3 and the casual worker's it is 63.8. There is significant effect of human capital development on labour productivity (earnings) of the regular salaried workers in Kerala**.** Other types of employment (self-employed, casual work) this relationship is not visible. That means, education influences the earnings of the worker if they are engaged with regular salaried job. Gender is considered to be the most influencing factor which determines the productivity of a worker in Kerala irrespective of their category of work. The next chapter discusses the productivity analysis of factors influencing the human capital development of the workers and its influence on the productivity of the workers by using primary data.

CHAPTER 6

ANALYSIS OF HUMAN CAPITAL DEVELOPMENT AND PRODUCTIVITY OF WORKERS BY USING PRIMARY DATA

6.1. Introduction

The previous chapter analyzed the type of employment preferences and productivity (earnings) of the workers in Kerala and the study found that level of education, health status, gender, caste, sector of employment and number of working months in the last year are the major factors influencing the earnings of a worker than the level of education. Moreover, it is found that education and experience can explain only 13.3 percent of the variation in earnings. As it is found that childhood aspirations and the socioeconomic condition of childhood are important in determining the life achievements of an adult (Lekfuangfu and Odermatt,2022), the present study collected primary data on the childhood aspiration, parents' education, and childhood socioeconomic condition along with the variables already analyzed by using primary data.

The IHDS data does not contain much information regarding the parents' education, occupation, the childhood economic status of the family and the aspiration level of the worker during his/her childhood. Hence the study collected primary data from Feroke Municipality (with the assumption of homogeneity) for the analysis. Moreover, the period of IHDS data was during 2011-12 and for understanding the latest condition primary data collection is the only option.

The purpose of the study is to find out the productivity and human capital relationship, we need to get samples of workers. As is already mentioned in the data collection methodology in the methodology chapter, our population is all those workers between the age group of 25 to 45, in Feroke municipality, there are some problems in getting enough female workers. The majority of females who seem to be working happen to be regular salaried workers. Due to this, to have some kind of

comparability, we selected more regular salaried male workers also. Moreover, it is a fact that education will be an important influencing factor in the earnings of the regular salaried group when compared to casual and self-employed, the present study analyzed the earning function of total workers and regular salaried workers separately. For other types of employment, a separate analysis has not been done.

The present chapter is divided into four sections. The first section deals with the profile of the study area. The second section describes the profile of the sample respondent and the third section discusses the influence of socioeconomic status on the human capital development of the workers. The fourth section analyses the productivity of workers by using the human capital earning function of Mincer.

6.2. Profile of the Study Area.

Kerala, a state on India's tropical Malabar Coast has nearly 600km of Arabian sea shoreline. Kerala is the first state to have achieved universal literacy. Kerala has one of the most advanced educational systems and the highest literacy levels in India (Happy,2017). Kerala maintains a relatively high standard of health services. The health care and health accessibility of Kerala is also commendable (Cholakkal,2015). Kozhikode is the second largest metropolitan city in the state of Kerala. Kozhikode is also known as Calicut, is a city in the state of Kerala in southern India on the Malabar coast. Kozhikode is the state's largest urban area and the world's 195th-largest urban area. Kozhikode district is one of the economically advanced areas of Kerala. Several industries have been flourishing here from the early days. Cheruvannur and Feroke are the predominant industrial areas of Kozhikode. Feroke is known as the cradle of the tile industry in Kerala. Feroke is well known for its tiles, wood, and timber industries. Also, numerous numbers of automobile dealerships, footwear industries, and other small-scale industries flourish here employing thousands of people (Shamli and Muhammedail,2016).

Feroke was established as a gram panchayat in the year 1955 and was upgraded to a municipality at the end of the year 2015 (1st November). Feroke is a main town, even though the village behavior persists. The population consists of Hindus, Muslims, and Christian communities and is characterized by distinct

socio-cultural customs and behavior. Feroke is a region comprising hilly areas, agricultural lands, valleys, plain lands, and Rivers. According to the 2011 census report Feroke town population constitutes 32,122 among them 15596 males and 16526 females. The population of children under the age of 0-6 is 3979. The Female Sex Ratio is 1060 against the state average of 1084. The Child Sex Ratio in Feroke is around 969 compared to the Kerala state average of 964. The Literacy rate of Feroke City is 95.99 % higher than the state average of 94.00 %. In Feroke, male literacy is around 97.67 % while the female literacy rate is 94.42 percent. The total employed persons in Feroke municipality is 9,281. Among them, 85 percentage were males (7,898), and 15 percentage of females (1,383) ,http://www.census 2011.co.in /data/town/627439-Kerala.html).

These are the important profile of the Feroke municipality. The next section of the chapter describes the sample profile of the respondents of the Feroke municipality.

6.3. Profile of the Sample Respondents

In this section discussing the profile of a sample of the workers in the Feroke municipality by sex, level of education, type of employment, caste and health status.

6.3.1. Sex wise Classification of the Workers

Kerala, which ranks first among Indian states in the Human Development Index (HDI) and Gender Development Index (GDI), still presents a poor picture in terms of female work participation. Gender remains a significant determinant of labor force participation, and the female labor force participation rate in Feroke is also low. Based on the 2011 census report, only 15 per cent of females are employed in the Feroke municipality. For this analysis, the sample data included 173 male and 147 female workers in the 25 to 45 age group. As sex is one of the important determinants of labor force participation. Our sample includes 173 male workers and 147 female workers in the age group of 25 to 45.

Table 6.1

Sex wise classification of the workers

Sex	Count
Male	173
Female	147
Total	320

Source: Primary data

6.3.2. Caste wise Classification of the Workers

Caste in India is a primary source of stratification. Caste and religion play an important role in labour force participation and the productivity (earnings) of workers. Hence the data was collected from the workers from different caste categories. When considering the caste of workers, the sample included 11.2 per cent from the general caste, 70.6 per cent from the OBC caste, and 18.1 per cent from the SC caste, as shown in Table 6.2.

Table 6.2

Caste wise classification of the workers

Social class	Percentage
General	11.2
OBC	70.6
SC	18.1

Source: Primary data

6.3.3. Level of Education of the Workers

Educational attainment is known as an essential component of human capital development in any society. The state of Kerala in India is often praised for its performance in education attainment. The literacy rate of Feroke City is 95.99 percentage higher than the state average of 94 percentage (www.cesus report 2011). Education is an important determinant of the productivity of the workers. The sample data contain all the types of educationally qualified workers. In Kerala

females has more chance to higher education than the male. It is already seen in the previous chapter, that female outnumber male in the case of higher education. The trend seems to be the same which is evident from the primary data also.

Table 6.3

Sex wise level of education of the workers

Level of Education	Sex	
	Male	Female
Elementary	20.6	14.4
Secondary	11.8	12.3
Higher	67.6	73.3

Source: Primary data

As seen in Table 6.3, the number of highly educated females is higher than their male counterparts. Only 20.6 percentage of males have received only an elementary education, compared to just 14.4 percentage of females. This indicates an improvement in the educational status of females over the years, as the percentage of less-educated females was higher in 2011-12 data. This pattern has shifted significantly over time.

6.3.4. Caste wise Level of Education of the Workers

The role of Caste in getting education is having an important role in India. Even after independence, the domination of the upper caste in education attainment has not changed drastically though we introduced a lot of policies to create social justice in education. It is seen in our analysis that the upper caste still dominates in higher education in a state like Kerala, where there is high social development.

Table 6.4

Level of education of different social classes

Level of Education	Social Class		
	General	OBC	SC
Elementary	11.4	19.1	16.1
Secondary	2.9	11.6	19.6
Higher	85.7	69.3	64.3

Source: Primary data

Table 6.4 shows that 85.7 percentages of the workers belonging to the general caste reported having a higher education qualification, whereas this percentage was only 69.3 and 64.3 among OBC and SC caste respectively.

6.3.5. Type of Employment of the Sample

The work participation of females is very low and those who are working prefer to be in regular salaried jobs. Hence, we were compelled to select more male members who are regular salaried for our analysis. The number of casual labour and self-employed is lesser. Table 6.5 shows the employment categories of the sample population.

Table 6.5

Type of employment of the workers

Employment status	Sex	
	Male	Female
Regular/Salaried work	63.6	75.5
Self Employed	12.1	7.5
Casual workers	24.3	17.

Source: Primary data

In our sample, 75.5 per cent of females and 63.3 per cent of males are regular salaried employees. Among females, only 17 per cent are engaged in casual work,

and 7.5 per cent are self-employed. In comparison, 24.3 per cent of males are doing casual work, and 12.1 per cent are self-employed. This data indicates that the employment pattern observed in 2011-12 has remained largely unchanged. Despite the introduction of more self-employment programs for women, they still tend to prefer regular salaried employment over self-employment.

6.3.6. Health Status of the Workers

Health is a kind of human capital. Health is one of the important factors which determine the productivity of a person is concerned. It is seen from the earlier analysis that activity status and health (in chapter 4), there is a significant difference in work participation rate among unhealthy persons when compared to the healthy. In this primary data, self-assessed health status is taken as a proxy variable for analyzing the health status of a person is concerned.

Table 6.6

Self-assessed health status of the workers

Health status	Percentage
Average	24.1
Good	52.8
Very good	23.1

Source: Primary data

Table 6.6 shows that 24.1 per cent of the workers reported having an average health status. Nearly half of the sample, 52.81 per cent, reported good health, while 23.11 per cent described their health status as very good. The next section of this chapter gives an analysis of the influence of socio economics status of family on the human capital development of the workers.

6.4. Analysis of the Human Capital Development and Socio-Economic Status

Human capital is treated as the complex of two main elements: education and health, which are developed through investment in education and investment in health care. Adam Smith (1776) first demonstrated educated man is the main proxy of human capital, while others generally describe investment in people or labor as capital (cited in Devadas,2015). Likewise, Becker (1993) treated education and training are the most important investments in human capital. Weisbrod (1966) treated expenditures on education, training, health, information, and labor mobility are investments in human capital. Schultz (1962) in his article on human capital contained a discussion of education, on the job training, migration and health. Becker (2007) also demonstrates the empirical importance of health as human capital. Here the study considers the level of education and health status of the respondents as a proxy for human capital development. The level of education indicator is developed for assessing the education qualification of the workers. Education qualifications or levels of education are categorized into six. '1' is given as the smallest possible level of education and '6' is the highest possible level of education. The health indicator is created by combining physical, mental, and familial health-related variables. The human capital development index is the average of both the education and health indices (details given in Chapter 3).

Appendix Table 2.1 shows the descriptive statistics of the education indicator. It is given that the average level education indicator of the workers is 66.35. The lowest level of education indicator of the workers is 16.67 and the highest level of education is 100. The mean value of the level of education is 66.37. The standard deviation of the level of education among the workers is 23.67.

Health is another component of human capital. The state of Kerala is a great achiever in health (Rajan and James,1993). The average health status of the workers in Feroke is 77.48. The highest value of the health status of the workers is 95 and the lowest is 45. The standard deviation of the health status among the workers is 9.01. The average human capital index of the workers is 71.91. The highest value of the human capital development of the workers is 97.5 and the lowest value is 35.83. The

standard deviation of the human capital development of the workers is 14.01. From this, it is seen that Feroke stands above average level in the education, health, and human capital development index of the workers. The next section analyzes the influence of socio-economic status of the family on the human capital development of the workers.

The Michigan State Department of Education defines Socioeconomic status as having three dimensions such as family income, parent's education level, and parents' occupation. This definition has been used extensively in numerous studies (Chen and Kong, et.al, 2018.). American Psychological Association defines socioeconomic status as "the social standing or class of an individual or group". So, the study takes parents' education level, parents' occupation, family income, and social class are the important socio-economic factors of the present study.

6.4.1 The Influence of Socio-Economic Factors on Human Capital Development of the Workers.

Coleman (1966) pointed to family background as the number one factor that determines a child's educational success. Currie (2009) found a strong link between parental socioeconomic status and child health, and between child health and adult education or income. So, the influences of socio-economic status of the family on the education and health outcomes of the child are discussed in the following sections.

6.4.1.1. Parents' Level of Education and Human Capital Development

The human capital theory of Becker (1964) asserts that education is an important investment in human capital, where the 'cost-benefit' framework is the primary principle by which families make educational investment decisions, and the difference in children's educational achievement is mainly due to differences in families educational Investment. Due to limited family resources, parents of poor families are generally unable to invest enough in their children's education, which affects their children's academic achievement. The studies of Li (2006) Liu (2008), and Zhao and Hong (2012) studies quote that families with higher socio-economic

status can take advantage of their achievements and enable their children to access and enhance better educational opportunities through their access to higher education. Both the father and mother's level of education are considered here to know their influence on the human capital development of their child. The parent's level of education is classified into elementary, middle, and higher education.

6.4.1.1.1 Fathers' Education and Human Capital Development

During the respondent's father's schooling time approximately 40 years back, our educational system and infrastructure were not as developed as today. So, the higher educated parents are quite low which is only 6.9 per cent. Among the sample, most of the father's educational qualification is elementary (53.4) and 39.7 percentage of them are middle educated or secondary level of educational qualification.

For the analysis study develops education indicator, health indicator and human capital development index. Firstly, the study considers how father education influences the child's mean value of these three. The Father's level of education increases reflected in the mean value of the child's education, health, and human capital index of the respondent it shown in Appendix Table 2.2.

The level of education, health status, and human capital development index there exist three categories, so the present study uses the one-way ANOVA to test the significant effects variables. The test of normality is not satisfied (P value is <0.05). So, the Kruskal Wallis Test (non-parametric test) is used corresponding to one-way ANOVA. The Kruskal Wallis test results (Table 6.7) show that there is a significant difference between the level of education of the father and the education, health, and human capital development index of the respondent.

Table 6.7

Kruskal-Wallis Test

Test Statistics[a,b]			
	Education Indicator	Health Indicator	Human Capital Development
Chi-Square	57.961	16.912	54.395
Df	2	2	2
Asymp. Sig.	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: Education Father

The p-value of the Kruskal Wallis test is .000 which is less than .05 for all variables. This shows a significant difference in the mean value of the levels of education of fathers to the respondent's levels of education, health, and human capital development index.

Table 6.8

Multiple comparisons between the level of education of the fathers and human capital development.

Multiple Comparisons							
LSD							
Dependent Variable	(I) Education Father	(J) Education Father	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Level of Education	Elementary	Middle	-20.53767*	2.49673	.000	-25.4499	-15.6254
		Higher	-22.91777*	4.82762	.000	-32.4160	-13.4196
	Middle	Elementary	20.53767*	2.49673	.000	15.6254	25.4499
		Higher	-2.38010	4.92202	.629	-12.0641	7.3039
	Higher	Elementary	22.91777*	4.82762	.000	13.4196	32.4160
		Middle	2.38010	4.92202	.629	-7.3039	12.0641
Health	Elementary	Middle	-2.60879*	1.03945	.013	-4.6539	-.5637
		Higher	-5.76555*	2.00985	.004	-9.7199	-1.8112
	Middle	Elementary	2.60879*	1.03945	.013	.5637	4.6539
		Higher	-3.15676	2.04915	.124	-7.1884	.8749
	Higher	Elementary	5.76555*	2.00985	.004	1.8112	9.7199
		Middle	3.15676	2.04915	.124	-.8749	7.1884

Multiple Comparisons

LSD

Dependent Variable	(I) Education Father	(J) Education Father	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Human Capital Development	Elementary	Middle	-11.57323*	1.48686	.000	-14.4986	-8.6479
		Higher	-14.34166*	2.87496	.000	-19.9981	-8.6853
	Middle	Elementary	11.57323*	1.48686	.000	8.6479	14.4986
		Higher	-2.76843	2.93118	.346	-8.5355	2.9986
	Higher	Elementary	14.34166*	2.87496	.000	8.6853	19.9981
		Middle	2.76843	2.93118	.346	-2.9986	8.5355

*. The mean difference is significant at the 0.05 level.

Table 6.8 presents the results of ‘multiple comparisons’ (post Hoc test) between the levels of fathers' education and different aspects of human capital development (Level of education, health, and overall human capital development) using the Least Significant Difference (LSD) method. The LSD method is used for pairwise comparisons to determine if the mean differences between groups are statistically significant. The dependent variables in the comparisons are ‘level of education, health, and human capital development’, each of these variables is examined to see how they vary based on the education level of the father (Elementary, Middle, Higher). The education levels of fathers are I and J, ‘I’ Education of father represents the current group for comparison. ‘J’ education of father represents the group being compared against. The three levels of father's education are elementary, middle and higher. The mean difference (I-J) of the table represents the difference in the mean scores of the dependent variable between group I (current group) and group ‘J’ (comparison group). The standard error of the mean difference shows the variability of the difference between the groups' means. A smaller standard error indicates more precise estimates of the mean difference. The Significance (Sig.): the ’p-value’ (denoted as "Sig.") indicates whether the mean difference between the groups is statistically significant.

While compared to the level of education of the respondent to the father’s education level - elementary vs. middle, the mean difference is ‘-20.53767’, which is significant (p = .000). This means that individuals whose fathers have a middle-level education tend to have a significantly higher level of education compared to those whose fathers have only elementary-level education. While compared to the level of education of the respondent to the fathers with elementary vs. higher level of education - the mean difference is ‘-22.91777’, which is also significant (p = .000). This indicates that individuals whose fathers have higher education levels tend to have significantly higher educational attainment than those whose fathers have only elementary-level education. While compared to the level of education of the respondent to the father’s level of education middle vs. higher, the mean difference is ‘-2.38010’, which is not significant (p = .629). This suggests that there is no statistically significant difference in the level of education between individuals

whose fathers have a middle-level education and those whose fathers have higher education.

From this result, it concluded that that the father with middle and higher levels of education, their child's level of education is almost the same or no significant difference in their mean value. But fathers with primary education, whose mean value is significantly different from the children with middle and higher-educated fathers. It indicates that middle and higher educated parents may provide adequate education to their children when compared to less educated. Educated fathers make much investment in the education of their children and they select schools for the study of their children based on the quality of teachers and school (Chen, Kong, Gao, and Mo, 2018). It may be the reason for the growth in the level of education of a person with an increase in their father's education.

While comparing the health status of the respondent to the father's level of education elementary vs. middle, the mean difference is '2.60879', which is significant (p = .013). This indicates that individuals whose fathers have a middle-level education have significantly better health outcomes compared to those whose fathers have only an elementary-level education. By comparing the respondent's health status to fathers' education elementary vs. higher, shows the mean difference is '5.76555', which is significant (p = .004). This suggests that individuals whose fathers have a higher education level have significantly better health outcomes than those whose fathers have only an elementary-level education. By comparing the father's level of education middle vs. higher, the mean difference is '-3.15676', which is not significant (p = .124). This means there is no statistically significant difference in health outcomes between individuals whose fathers have middle-level education versus those whose fathers have higher education.

From this analysis of the relationship between the education of the father and the health status of the respondent, it is seen that when compared with a respondent of a primary educated father with a higher educated or middle educated father there is a significant difference in health status. Whereas the respondents with higher educated and middle-educated parents do not have significant differences in

health status. The study of Chen and Kong (2018) in China reveals that educated parents are much more aware of health, and provide better nutritious foods and better treatment for the sick of their child. It may be the reason for the increase in the mean value of the health status of respondents with middle and higher educated fathers.

While considering the human capital development compared to the father's level of education elementary vs. middle. The mean difference is '-11.57323', which is significant (p = .000). This indicates that human capital development is significantly higher among individuals whose fathers have a middle-level education compared to those with fathers who have only elementary-level education. By comparing the father's level of education elementary vs. higher, the mean difference is '-14.34166', which is significant (p = .000). This suggests that human capital development is significantly higher among individuals whose fathers have a higher education level compared to those whose fathers have only elementary-level education. By comparing the father's level of education middle vs. higher, the mean difference is '-2.76843', which is not significant (p = .346). This means there is no statistically significant difference in human capital development between individuals whose fathers have middle-level education and those whose fathers have higher education. From the analysis it can be concluded that the human capital development index of a respondent is compared with the respondents of middle and higher educated fathers, there is no significant difference is visible. Whereas with a respondent with a primary educated father, respondents with a higher educated or secondary educated father show a significant difference in the human capital development index.

Overall, the findings suggest that higher levels of fathers' education (middle or higher) are associated with significantly better educational attainment, health, and human capital development for individuals compared to those whose fathers have only an elementary education. However, there is no significant difference in these outcomes between the middle and higher education levels of fathers**.** Hence it can be concluded that the education of the father is an important component of human capital development of the child is concerned.

6.4.1.1.2. Mother Education and HCD

The education is important for every individual, it is especially significant for girls and women (World Bank, 2013). 'The human capital theory predicts that, the high educational and literacy achievement among women is a significant tool in promoting women's empowerment. Educated women have more job options, higher salaries, more household decision-making power, and act as wonderful role models for their children' (Mitra and Singh ,2007). Sample data shows that 42.8 percentage of respondents are with primary educated mothers. 39.6 percentage of respondents with secondary educated mothers and higher education is quite the lowest, at 17.5 percentage only. The study tries to analyze the role of mother's education in their child's education.

The Appendix Table 2.4 shows that as the mother's level of education increases the mean value of their child's level of education, health status and human capital development index also increases.

Table 6.9

Kruskal-Wallis Test

Test Statistics[a,b]			
	Education	Health	Human capital Development index
Chi-Square	47.749	20.779	45.625
Df	2	2	2
Asymp. Sig.	.000	.000	.000

a. Kruskal Wallis Test

b. Grouping Variable: Mother education

The P value of Kruskal Wallis test 'is <0.05. So, there is a significant difference between the mean value of the mother's level of education and the respondent's level of education, health status and Human capital development index.

Table 6.10

Multiple comparisons between the level of education of the mothers and human capital development index

Multiple Comparisons							
LSD							
Dependent Variable	(I) Mother education	(J) Mother education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Level of education	Primary	Middle	-21.74167*	2.83527	.000	-27.3200	-16.1633
		Higher	-23.46411*	3.65073	.000	-30.6468	-16.2814
	Middle	Primary	21.74167*	2.83527	.000	16.1633	27.3200
		Higher	-1.72244	3.69220	.641	-8.9867	5.5419
	Higher	Primary	23.46411*	3.65073	.000	16.2814	30.6468
		Middle	1.72244	3.69220	.641	-5.5419	8.9867
Health	Primary	Middle	-3.67808*	1.00915	.000	-5.6636	-1.6926
		Higher	-4.64546*	1.29940	.000	-7.2020	-2.0889
	Middle	Primary	3.67808*	1.00915	.000	1.6926	5.6636
		Higher	-.96738	1.31416	.462	-3.5529	1.6182
	Higher	Primary	4.64546*	1.29940	.000	2.0889	7.2020
		Middle	.96738	1.31416	.462	-1.6182	3.5529
Human capital Index	Primary	Middle	-12.70988*	1.62448	.000	-15.9060	-9.5138
		Higher	-14.05479*	2.09170	.000	-18.1702	-9.9394
	Middle	Primary	12.70988*	1.62448	.000	9.5138	15.9060
		Higher	-1.34491	2.11546	.525	-5.5070	2.8172
	Higher	Primary	14.05479*	2.09170	.000	9.9394	18.1702
		Middle	1.34491	2.11546	.525	-2.8172	5.5070

*. The mean difference is significant at the 0.05 level.

Table 6.9 presents the results of multiple comparisons between the levels of mothers' education and the human capital development Index (measured by three dependent variables: level of education, health, and human capital index) using the least significant difference (LSD) method. The dependent variables in these comparisons are ‘level of education’ refers to the educational attainment level associated with the

mothers' education level. Health: reflects health outcomes influenced by the mothers' education level. Human capital index represents a composite measure of human capital development, incorporating factors like education, skills, and health. The mother's education levels 'I' and 'J','I' is the mother education of the current group for comparison and 'j' is the mother education the group being compared against. The three levels of mother's education are primary, middle and higher. While comparing the level of education of the respondent to the mother's level of education primary vs. middle, the mean difference is '-21.74167', which is significant (p = .000). This means that individuals whose mothers have a secondary level of education tend to have significantly higher levels of education compared to those whose mothers have only a primary level of education**.** While comparing the level of education of the respondent to the mother's level of education primary vs. higher, the mean difference is '-23.46411', which is also significant (p = .000). This indicates that individuals whose mothers have a higher level of education tend to have significantly higher levels of education compared to those whose mothers have only a primary level of education. While comparing the level of education of the respondent to the mother's level of education middle vs. higher, the mean difference is '1.72244', which is not significant (p = .641). This suggests that there is no statistically significant difference in the level of education between individuals whose mothers have a middle level of education and those whose mothers have a higher level of education.

While comparing the health status of the respondent to the mother's level of education, primary vs. middle, the mean difference is '3.67808', which is significant (p = .000). This indicates that individuals whose mothers have a middle level of education have significantly better health outcomes compared to those whose mothers have only a primary level of education. While comparing the health status of the respondent to the mother's level of education primary vs. higher, the mean difference is '-4.64546', which is significant (p = .000). This suggests that individuals whose mothers have a higher level of education have significantly better health outcomes than those whose mothers have only a primary level of education. While comparing the respondent health status to the mother's level of education,

middle vs. higher, the mean difference is '-.96738', which is not significant (p = .462). This means there is no statistically significant difference in health outcomes between individuals whose mothers have a middle level of education and those whose mothers have a higher level of education.

While comparing the human capital development index of the respondent to the mother's level of education, primary vs middle, the mean difference is '-12.70988', which is significant (p = .000). This indicates that the human capital development index is significantly higher among individuals whose mothers have a middle level of education compared to those whose mothers have only a primary level of education. While comparing the human capital development index of the respondent to the mother's level of education, primary vs higher, the mean difference is '-14.05479', which is significant (p = .000). This suggests that the human capital development index is significantly higher among individuals whose mothers have a higher level of education compared to those whose mothers have only a primary level of education. While comparing the mother's level of education, middle vs. higher to the respondent human capital index, the mean difference is '1.34491', which is not significant (p = .525). This means there is no statistically significant difference in the human capital development index between individuals whose mothers have a secondary level of education and those whose mothers have a higher level of education. The findings suggest that higher levels of mothers' education (secondary or higher) are associated with significantly better educational attainment, health outcomes, and overall human capital development for individuals compared to those whose mothers have only a primary education. However, there is no significant difference in these outcomes between secondary and higher education levels of mothers, indicating that even reaching the secondary education level may provide substantial benefits in terms of human capital development.

The result indicates that like the father's education, the mother's education is also important, for the development of the human capital of their child. The study of Moore & Schmidt (2004) in USA, says that strong associations between maternal level of education and children's academic outcomes. It may be due to as his study says, educated mothers encouraging to invest in higher education.

His study also says that a mother's education also improves adolescent mental health status and reduces the incidence of underweight. The result that higher education and middle level education will not have much significant influence on the education and health of a child shows that general education in the primary and secondary levels is more important in the overall development of the child. Hence it can be argued that universal general education will help to improve the education and health status of the next generation. In a country like India, it is important to invest more in primary and secondary education for a better generation in the near future. The result is important as far as Kerala is concerned. The importance of school education given by the state government of Kerala may be one of the main factors in the achievement of the state in human development when compared to other states of India.

From the above analysis it is seen that parents 'education is an important determinant of the human capital development of their child. The result of the study matched with Shukla (2007) in India, says that investment in human capital by families shows that the parents regarding the education of the children varied with the education of the father and mother. Hence the study rejects the hypothesis (H5) that there is no significant relationship between the parental education and the human capital development of their children.

6.4.1.2. Employment Status of the Father

'The parent's occupational reputation is tied to their involvement and engagement activities with their children, which are linked to their children's achievement. Low occupation status or prestige frequently signifies demanding physical labor, long working hours, low earnings, and unstable employment opportunities (with a comparatively high risk of being laid off). This may need parents devoting time and attention that would otherwise be spent supporting their children's '(Chen & Kong et.al,2018).

Feroke is situated on the southern bank of the Chaliyar river. So, most of the fathers of the sample populations are engaged in fishing and other related casual work, so 51.9 percent engaged in it and 25.6 percentage of fathers are engaged in regular salaried and 19.7 percentage of fathers are self-employed. The Appendix Table 2.5 shows that the mean value of the level of education is highest (73.54) for

the respondents of fathers with self-employed and their human capital index is also high compared to the other category of employment status. The respondents having fathers who are regular salaried show the highest value of the health status. level of education, health, and human capital index is low for the respondents with fathers who are doing casual work compared to the respondents whose fathers are doing other types of employment.

The test result of homogeneity variance of the level of education, health status and human capital index of the respondent with father's employment status, the p-value is < 0.05. So, there is no homogeneity among the variables. The study used nonparametric tests of Kruskal Wallis test & post hoc test to test the significant difference between the variables.

Table 6.11

Kruskal-Wallis Test

Test Statistics[a,b]			
	Level of Education	Health	Human Capital Development
Kruskal-Wallis H	17.563	6.728	15.128
Df	2	2	2
Asymp. Sig.	0	0.035	0.001

a. Kruskal Wallis Test

b. Grouping Variable: Employment of Father

Table 6.11 shows the result of Kruskal-Wallis Test, the p values is <0.05. Hence it can be concluded that there is a significant difference between the mean values of education, health, and human capital development index when comparing respondents based on the difference in their father's employment status.

Table 6.12

Multiple comparison between father's employment status and human capital development index

Multiple Comparisons							
LSD							
Dependent Variable	(I)Employment of Father	(J) Employment of Father	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Level of Education	Self employed	Regular salaried	-0.57824	3.77382	0.878	-8.004	6.8475
		Casual workers	11.62141*	3.04046	0	5.6387	17.6041
	Regular salaried	Self employed	0.57824	3.77382	0.878	-6.8475	8.004
		Casual workers	12.19965*	3.33325	0	5.6408	18.7585
	Casual workers	Self employed	-11.62141*	3.04046	0	-17.6041	-5.6387
		Regular salaried	-12.19965*	3.33325	0	-18.7585	-5.6408
Health	Self employed	Regular salaried	0.20906	1.5013	0.889	-2.745	3.1632
		Casual workers	2.24434	1.20956	0.064	-0.1357	4.6244
	Regular salaried	Self employed	-0.20906	1.5013	0.889	-3.1632	2.745
		Casual workers	2.03528	1.32603	0.126	-0.5739	4.6445
	Casual workers	Self employed	-2.24434	1.20956	0.064	-4.6244	0.1357
		Regular salaried	-2.03528	1.32603	0.126	-4.6445	0.5739

Multiple Comparisons

LSD

Dependent Variable	(I)Employment of Father	(J) Employment of Father	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Human Capital Development	Self employed	Regular salaried	-0.18347	2.23154	0.935	-4.5745	4.2075
		Casual workers	6.93391*	1.79789	0	3.3962	10.4716
	Regular salaried	Self employed	0.18347	2.23154	0.935	-4.2075	4.5745
		Casual workers	7.11738*	1.97102	0	3.239	10.9958
	Casual workers	Self employed	-6.93391*	1.79789	0	-10.4716	-3.3962
		Regular salaried	-7.11738*	1.97102	0	-10.9958	-3.239

*. The mean difference is significant at the 0.05 level.

Table 6.12 presents the results of multiple comparisons between the father's employment status and the human capital development index (measured by three dependent variables: level of education, health, and human capital development) using the least Significant Difference (LSD) method. The LSD method helps determine if the differences in means between the various groups are statistically significant. The dependent variables being analyzed by the level of education, is the educational attainment (level associated with the father's employment status). The health (Health outcomes influenced by the father's employment status) and the human capital development, A composite measure of human capital development, encompassing education, skills, and health. The Father's Employment Status (I and J):'I' is the employment of father: the current group for comparison and 'J' employment of father, the group being compared against. The three levels of father's employment status are, self-employed, regular salaried and casual workers. While comparing the Level of Education of respondent to the employment status of the father, self-employed vs. regular salaried: The mean difference is '-0.57824', which is not significant (p = 0.878). This indicates that there is no statistically significant difference in the level of education between individuals whose fathers are self-employed and those whose fathers are regular salaried employees. While comparing the Level of Education of respondent to the employment status of the father, self-employed vs. casual workers, the mean difference is '11.62141', which is significant (p = 0.000). This suggests that individuals whose fathers are self-employed have significantly higher levels of education compared to those whose fathers are casual workers. While comparing the Level of Education of respondent to the employment status of the father, regular salaried vs. casual workers, the mean difference is '-12.19965', which is significant (p = 0.000). This indicates that individuals whose fathers are regular salaried employees have significantly higher levels of education compared to those whose fathers are casual workers.

While comparing the health status of respondent to the employment status of the father, self-employed vs. regular salaried, the mean difference is '0.20906', which is not significant (p = 0.889). This indicates that there is no statistically significant difference in health outcomes between individuals whose fathers are self-

employed and those whose fathers are regular salaried employees. While comparing the health status of respondent to the employment status of the father, self-employed vs. casual workers, the mean difference is ‘2.24434’, which is marginally not significant (p = 0.064). This suggests that there is a borderline (though not statistically significant) difference in health outcomes, with individuals whose fathers are self-employed possibly having better health outcomes compared to those whose fathers are casual workers. While comparing the health status of respondent to the employment status of the father, regular salaried vs. casual workers, the mean difference is ‘2.03528’, which is not significant (p = 0.126). This indicates no statistically significant difference in health outcomes between individuals whose fathers are regular salaried employees and those whose fathers are casual workers.

While comparing the human capital index of respondent to the employment status of the father, self-employed vs. regular salaried, the mean difference is ‘-0.18347’, which is not significant (p = 0.935). This shows no statistically significant difference in the human capital development index between individuals whose fathers are self-employed and those whose fathers are regular salaried employees. While comparing the human capital index of respondent to the employment status of the father, self-employed vs. casual workers, the mean difference is ‘6.93391’, which is significant (p = 0.000). This suggests that individuals whose fathers are self-employed have a significantly higher human capital development index compared to those whose fathers are casual workers. While comparing the human capital index of respondent to the employment status of the father, regular salaried vs. casual workers, the mean difference is '7.11738’, which is significant (p = 0.000). This indicates that individuals whose fathers are regular salaried employees have a significantly higher human capital development index compared to those whose fathers are casual workers. The findings indicate that the father's employment status significantly impacts the educational level and human capital development of individuals. Children of fathers who are self-employed or have regular salaried jobs tend to have higher educational attainment and human capital development indices compared to those whose fathers are casual workers. However, there is no significant difference in health outcomes among the different employment groups,

except for a marginal indication that children of self-employed fathers may have slightly better health outcomes than those of casual workers.

From this analysis, it can be concluded that the level of education of a person is a significant factor in deciding the level of investment in their children in education and human capital development. This may be the reason for the relationship between the levels of education of parents with the level of education of the respondent. From the above analysis, it is seen that the type of employment of a father is significantly related to the education and human capital development of their child. Here it is seen that the children of regular salaried or self-employed fathers have more education and human capital development when compared to casual workers. This may be due to the fact that a person with regular salaried or self-employed may have a high level of education when compared to casual workers, and they may have more time, money and knowledge to invest in the child's studies. It can be seen that the health status of a child is not much related to the employment status of a father, which may be due to the well-developed community health system that prevailed in Kerala. The influence of Anganwadi and community health workers may have provided basic health facilities to all children irrespective of the economic status of the father along with the comparatively high level of female education that exists in Kerala.

6.4.1.3. Economic Status of the Family

With regard to income, families with low income may not be able to provide necessary living conditions such as a good house, study area, computer, internet, extracurricular books, newspapers, and magazines for children (Chen & Kong. et. al, 2018). So, the income or the assets of a family is an important factor influencing investment in education and human capital. The Family income or parent's income at the time of schooling of a respondent is very difficult to calculate at present. Hence the study adopts ration card possession at the time of schooling as a proxy variable for the income or wealth of the family. It is found that in the sample population, 51.6 percentage were from APL and 48.4 percentage from the BPL family.

We adopted t-test to analyze the variability of the average value of the human capital index, health status and level of education of the respondents on the basis of their childhood economic status.

Table 6.13

Test statistics

Test Statistics			
	Level of Education	Health	Human Capital Development
Mann-Whitney U	8137.5	10634	8383
Wilcoxon W	20227.5	22724	20473
Z	-5.789	-2.677	-5.341
Asymp. Sig. (2-tailed)	0	0.007	0

a. Grouping Variable: RC

Table 6.13 shows the test statistics provided, the 'RC' represents the grouping variable for childhood economic status, likely differentiating between two categories of Below Poverty Line (BPL)and Above Poverty Line (APL)economic classes. The analysis aims to determine whether childhood economic status (BPL vs. APL) significantly influences a child's education, health, and overall human capital development. Mann-Whitney U is the 8137.5 , Z value is the -5.789 and the p-value of 0 (less than 0.05) indicates a statistically significant difference in the level of education between children from BPL and APL economic classes. It reveals that the childhood economic status significantly influences the educational outcomes of children. Children from economically disadvantaged backgrounds (BPL) generally achieve lower levels of education than those from more affluent backgrounds (APL). While considering the health status to the economic status, Mann-Whitney U value is 10634, Z = -2.677 and p-value = 0.007. The p-value of 0.007 (less than 0.05) indicates a statistically significant difference in health outcomes between children from BPL and APL economic classes. It reveals that the childhood economic status has a significant impact on children's health. Children from BPL families tend to experience poorer health outcomes compared to their counterparts from APL

families. While analyzing the Human Capital Development, the Mann-Whitney U Test Result, Mann-Whitney U is 8383, Z value is -5.341 and p-value = 0. The p-value of 0 (less than 0.05) indicates a statistically significant difference in the human capital development index between children from BPL and APL economic classes. Childhood economic status significantly affects human capital development. Children from BPL families generally exhibit lower overall human capital development (including education and health) compared to those from APL families. From this analysis we can conclude that Children from economically disadvantaged backgrounds (BPL) tend to have lower levels of education and children from BPL families experience poorer health outcomes. the overall, children from BPL families show lower levels of human capital development than those from APL families.

These findings highlight the critical role of economic conditions during childhood in shaping a child's education, health, and human capital, emphasizing the need for targeted interventions to support children from economically disadvantaged backgrounds. It is seen that family economic status is one of the important factors that decide the educational attainment and health status of a child. The study of Lin and Lv (2017) in China reveals that family income has a significant influence on children's educational level, and increasing family income can improve their educational level. A similar result was found in the study of Georgiadis (2017) in England, that parental income is strongly and positively associated with child nutritional status and cognitive achievement across all countries and at all stages of childhood and adolescence.

6.4.1.4. Caste and Human Capital Development

Caste plays a role at every stage of an Indian's economic life, in school, university, labour market and in old age (Munshi,2019). The caste is strongly associated with socio economic status because it closely relates to occupation and employment (Thorat &Attewell,2007). Among the sample population largest number of respondents came from the OBC caste category. General and SC/ST are 11.3 and 18.1 percentage respectively. The Appendix Table 2.8 shows that the mean

value of the level of education of general and SC caste is the almost same. However, the mean value of the health indicator and human capital index is different by different caste categories.

The assumption of homogeneity variance is not satisfied, hence the study used non parametric test of Kruskal Wallis test and post hoc test to find the variability between the variables. The results are given in Table 6.14 & 6.15.

Table 6.14

Kruskal Wallis Test.

Test Statistics[a,b]			
	Level of Education	Health	Human Capital Development index
Kruskal-Wallis H	3.599	9.033	5.53
Df	2	2	2
Asymp. Sig.	0.165	0.011	0.063

a. Kruskal Wallis Test

b. Grouping Variable: CASTE

Kruskal Waills test results (Table 6.14) show that the level of education of different caste categories whose p-value is .165 is >.05. It indicates that there is no significant difference between the mean value of the level of education among different caste categories. The health of different caste categories whose p value is .011 which is <.05. It indicates that there is a significant difference between the mean value of the health status of the different caste categories. The human capital development index of different caste categories whose p-value is .063 is >.05. It indicates that there is no significant difference between the mean values of the human capital development index across different caste categories. As the health status and caste are statistically related, we need to do further analysis by using multiple comparison.

Table 6.15

Multiple comparisons between social class and Education, Health and Human capital development index

Multiple Comparisons							
LSD							
Dependent Variable	(I) CASTE	(J) CASTE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Level of Education	General	OBC	5.08368	4.24088	0.232	-3.2601	13.4275
		SC	-0.20795	5.01429	0.967	-10.0734	9.6575
	OBC	General	-5.08368	4.24088	0.232	-13.4275	3.2601
		SC	-5.29163	3.47858	0.129	-12.1357	1.5524
	SC	General	0.20795	5.01429	0.967	-9.6575	10.0734
		OBC	5.29163	3.47858	0.129	-1.5524	12.1357
Health	General	OBC	4.49238*	1.60101	0.005	1.3424	7.6423
		SC	4.80364*	1.89299	0.012	1.0792	8.528
	OBC	General	-4.49238*	1.60101	0.005	-7.6423	-1.3424
		SC	0.31126	1.31323	0.813	-2.2725	2.895
	SC	General	-4.80364*	1.89299	0.012	-8.528	-1.0792
		OBC	-0.31126	1.31323	0.813	-2.895	2.2725

Multiple Comparisons

LSD

Dependent Variable	(I) CASTE	(J) CASTE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Human Capital Development	General	OBC	4.78911	2.50518	0.057	-0.1398	9.718
		SC	2.29847	2.96206	0.438	-3.5293	8.1262
	OBC	General	-4.78911	2.50518	0.057	-9.718	0.1398
		SC	-2.49064	2.05488	0.226	-6.5336	1.5523
	SC	General	-2.29847	2.96206	0.438	-8.1262	3.5293
		OBC	2.49064	2.05488	0.226	-1.5523	6.5336

*. The mean difference is significant at the 0.05 level.

Table 6.15 presents the results of multiple comparisons between social classes (General, OBC, and SC) and three dependent variables: Level of Education, Health, and Human Capital Development Index using the Least Significant Difference (LSD) method. This method helps identify whether there are statistically significant differences in these variables across different social classes. The dependent variables being analyzed are the level of education (The educational attainment level associated with different social classes), Health: (Health outcomes influenced by social class) and human capital development(a composite measure of human capital development, incorporating education, skills, and health). The Social Classes (I and J), 'I' Caste is the current social class for comparison and 'J' Caste, the social class being compared against. The three social classes are: General (represents individuals from general or forward castes), OBC (Other Backward Classes) represents individuals from other backward classes and the SC (Scheduled Castes) represents individuals from scheduled castes. While comparing the level of education of the respondent to the caste of the respondent general vs. OBC, the mean difference is '5.08368', which is not significant (p = 0.232). This indicates that there is no statistically significant difference in the level of education between individuals from the General caste and those from the OBC caste. While comparing the level of education of the respondent to the caste of the respondent, general vs. SC, the mean difference is '-0.20795', which is not significant (p = 0.967). This suggests that there is no statistically significant difference in the level of education between individuals from the General caste and those from the SC caste. While comparing the level of education of the respondent to the caste of the respondent, OBC vs. SC caste, the mean difference is '-5.29163', which is not significant (p = 0.129). This indicates that there is no statistically significant difference in the level of education between individuals from the OBC caste and those from the SC caste.

While comparing the health status of the respondent to the caste of the respondent, General vs. OBC caste, the mean difference is '4.49238', which is significant (p = 0.005). This indicates that individuals from the General caste have significantly better health outcomes compared to those from the OBC caste. While comparing the health status of the respondent to the caste of the respondent, General

vs. SC caste, the mean difference is ‘4.80364’, which is significant (p = 0.012). This suggests that individuals from the General caste have significantly better health outcomes compared to those from the SC caste. While comparing the health status of the respondent to the caste of the respondent OBC vs. SC, the mean difference is ‘0.31126’, which is not significant (p = 0.813). This indicates that there is no statistically significant difference in health outcomes between individuals from the OBC caste and those from the SC caste.

While comparing the human capital development index of the respondent to the caste of the respondent, General vs. OBC, the mean difference is ‘4.78911’, which is marginally not significant (p = 0.057). This suggests a borderline, but not statistically significant, difference in the human capital development index between individuals from the General caste and those from the OBC caste. While comparing the human capital development index of the respondent to the caste of the respondent, general vs. SC, the mean difference is ‘2.29847’, which is not significant (p = 0.438). This indicates that there is no statistically significant difference in the human capital development index between individuals from the General caste and those from the SC caste. While comparing the human capital development index of the respondent to the caste of the respondent OBC vs. SC, the mean difference is ‘-2.49064’, which is not significant (p = 0.226). This suggests that there is no statistically significant difference in the human capital development index between individuals from the OBC caste and those from the SC caste.

From the results it can be concluded that social class significantly influences health outcomes, with individuals from the General caste having better health outcomes compared to those from OBC and SC castes. However, there are no significant differences in the level of education or the overall human capital development index among the social classes. The borderline significance between General and OBC castes for the human capital development index suggests a possible slight advantage for the General caste, but this is not strong enough to be statistically conclusive.

From theses analysis it can be conclude that majority of the socio-economic factors influencing the human capital development of the worker. Parents education, and the family's economic condition are the important factors influencing the human capital development of the worker. The employment status of the father is a significant factor in determining the education and human capital development of the workers, but the health status is not significantly related to the employment status of the father. The caste of the respondent significantly influences the health status of the worker.

The relationship between parental education and investments in children's human capital formation is well documented in the literature. Then promoting educational attainment among the current generation of students will increase the future generation's educational investments, leading to higher levels of schooling and greater investments in their children a virtuous cycle. The next section discusses the influence of human capital and socio-economic variables on the productivity of workers.

6.5. Analysis of the Productivity of the Workers

This section of the chapter analyses of the productivity of the workers in Feroke municipality. Before going to the statistical analysis, the study analyses the descriptive statistics (preliminary analysis of the sample) of the earnings of the workers.

6.5.1. Descriptive Statistics of the Earning Profile of the Workers.

In this section of the study, a preliminary analysis was conducted to examine the relationship between workers' earnings and various factors, such as education level, gender, caste, type of employment, health status, and sector of employment. The objective of this analysis is to understand how these variables impact workers' income, which serves as a proxy for labor productivity.

6.5.1.1. Level of Education and Earnings

Education is widely recognized as one of the key determinants of wage earnings across the globe. Higher levels of education often lead to better job opportunities and higher wages. Workers with advanced qualifications tend to possess specialized skills that are highly valued in the labor market. As a result, they are more likely to command better compensation compared to those with lower levels of education. In many economies, education has proven to be a powerful tool for upward mobility and economic prosperity.

Table 6.16

Mean differences in annual earnings of the workers

Level of Education	Annual
Elementary	167352.9
Secondary	173873.7
Higher	373454.1

Source: Primary Data

It is seen from Table 6.16 that the level of education increases, and subsequently their earnings also increase. A higher rate of salary is earned by the higher educated workers and a lower rate of salary is earned by the elementary level of educated workers.

6.5.1.2 Gender Gap in Earning

National and international studies consistently report a gender gap in earnings. Becker's work on economic discrimination, initially focused on race and ethnicity, can be extended to include gender disparities as well. Agarwal (2013) highlighted a significant gender difference in the earnings of Indian workers. These findings underscore the persistent inequality in wage distribution between men and women. Table 6.17 gives gender difference in annual earnings.

Table 6.17

Mean annual earnings based on level of education and earnings

Level of Education	Sex	
	Male	Female
Elementary	213291.4	90788.57
Secondary	228360	113333.3
Higher	460173.9	280250.5

Source: Primary Data

Table 6.17 shows that irrespective of gender, education positively influences the earnings of the workers. While considering the same level of education, male is getting remarkably higher earnings than female showing a clear-cut gender difference in earnings.

6.5.1.3. Employment Status and Earnings

Employment provides the means for meeting the income and subsistence needs of individuals and their families, which fulfills the goal of overall and equitable development (Mathew 2015). While analyzing the earnings of different types of employment it is seen that regular salaried employees are getting more earnings compared to the other types. Here also, the remarkable gender difference is visible (Table 6.18).

Table 6.18

Employment status and mean annual earnings

Employment status	Sex	
	Male	Female
Regular /Salaried workers	421025.5	268787
Self Employed	501714.3	173454.6
Causal workers	211800	96240

Source: Primary Data

6.5.1.4. Earnings Gap Between different Social Class

Caste is considered the most pervasive parameter differentiating Indian society. Agarwal (2013) found a strong picture of wage differential between social groups.

Table 6.19

Social class difference in mean annual earnings of the workers

Level of Education	Social Class		
	General	OBC	SC
Elementary	204000	160738.6	182666.7
Secondary	180000	171415.4	179127.3
Higher	450400	371800	316500

Source: Primary data

Table 6.19 reveals that social class is one of the important factor which influences the earnings of the worker is concerned. In all levels of education, general category earns more than OBC and SC.

6.5.1.5. Health Status and Mean Annual Earnings

Health is a kind of human capital. Health is one of the important factors which determine the productivity of a person is concerned. It is seen from the earlier analysis that activity status and health (in chapter 4) is highly related. Table 6.20 shows the relation between health status and the average earnings of the workers.

Table 6.20

Health status and annual mean earnings of the workers

Health status	Annual
Average	231737.1
Good	341389.4
Very Good	329124.3

Source: Primary Data

The data reveals a clear correlation between workers' health status and their annual mean earnings. Workers categorized as being in "Good" health earn the highest average income, with an annual mean of 341,389.4, suggesting that better health may contribute to higher productivity and, consequently, increased earnings. Interestingly, those in "Very Good" health earn slightly less on average, at 329,124.3, although still significantly more than workers in "Average" health, whose earnings average 231,737.1 annually. This pattern underscores the potential economic advantages of maintaining good health. However, it is important to note that the health status in this study is based on workers' psychological self-assessment, and the relationship between their earnings and self-reported health has not been extensively explained from a theoretical perspective.

6.5.1.6. Sector Wise Mean Earnings of the Workers

The sector of employment plays a crucial role in determining workers' earnings. A significant disparity is evident between the wages of male and female workers in the government sector also. Both male and female employees in the private sector tend to receive lower salaries compared to their counterparts in government positions. This wage gap likely contributes to the strong preference for government jobs in Kerala.

Table 6.21

Sector wise mean earnings of the workers

Sector	Sex	
	Male	Female
Government	572129	300211.8
Private	361731.7	254911.2

Source: Primary Data

The preliminary analysis reveals that workers' earnings vary according to factors such as education level, gender, type of employment, caste, and employment sector. These variables are significant determinants of workers' income. Therefore, the following section presents a detailed statistical analysis of these factors to provide a deeper understanding of their impact on earnings.

6.5.2 Productivity analysis by using human capital earning function of Mincer of the regular salaried workers

The previous chapter examined human capital development and worker productivity using Mincer's human capital framework. The study found that the extended human capital earnings function explained 63.8% of the variation in earnings, based on factors such as years of schooling, gender, social class, months worked in the past year, and employment sector. Among these, gender and months worked in the previous year had the most significant impact on workers' earnings. The primary data, applied to Mincer's human capital earnings function, is presented in Table 6.22.

Table 6.22

Estimated regression equation of regular salaried employment of the workers

Salaried	1	2	3	4	5
(Constant)	11.749 (.00)	11.166 (.00)	10.61 (.00)	10.60 (.00)	10.78 (.00)
Years of schooling	0.043 (.00)	0.05 (.00)	0.071 (.00)	0.069 (.00)	0.053 (.00)
Experience		0.079 (.00)	0.066 (.00)	0.069 (.00)	0.061 (1.3)
Experience square		-0.002 (.03)	.002 (.02)	-0.002 (.023)	0.002 (.16)
Dummy male			0.524 (.00)	0.528 (.00)	0.522 (.00)
Social class dummy general				.22 (.146)	0.347 (.02)
Social class dummy OBC				-0.004 (.972)	0.061 (.58)
D Govt sector					0.359 (.00)
R square	0.039	7.6	20.7	0.219	26.2
F-Value	8.95 (.00)	5.97 (.00)	14.1 (.00)	10.01 (.00)	10.59 (.00)

Table 6.22 shows the result of five alternative regression equations of the human capital earning function. In the first regression model education is the only independent variable. Years of schooling is taken as a proxy for educational attainment. It is found that an additional year of schooling will increase the earnings of the individuals by 4.3 percent. But the predictability of the model is only 3.6 percentages. When schooling, experience, and experience square are added to equation (2) the explanatory power of the model is increased to 7 from 3.6. Mincer's original equation includes only these variables. As it is already seen in Kerala, gender, social class and sector of employment are relevant variables that decide the earnings of a person is concerned. Hence this study used a final model which includes these variables along with education, experience, and experience square. While incorporating these variables together, the predictability increases to 26.2 percentage.

In the second model, experience and experience square added to the model, the influence of education on earnings increases to 5 percentages. While including gender as an independent variable, the influence of education increases to 7.1 percentage. While adding social class to the model, the influence of education on income decreased to 6.9 percentage. While adding the sector of employment to the model, the influence of education on income decreased to 5.3 percentage. From this analysis, it can be concluded that though education has a positive influence on the earnings of an individual is concerned but there are a number of other variables which influence earnings.

When considering experience, (in the first model) a one-year increase in experience contributes 7.9 percentage increase in earnings. Experience square shows a negative influence that creates the possibility of a parabolic age earning profile. In the first model, the rate of return to education was 5. Michael (2021) shows that experience is one of the important factor which influence the earnings of workers in Kerala than education. Our study confirms this result.

The dummy of the male was added into the third equation and the results show that the male earnings are more than 52.4 percent compared to their female regular salaried workers. The gender differences in wages are due to differences in the skills, abilities, and knowledge acquired by the workers. But in the case of those females in Kerala who could achieve high educational qualifications, receive a lesser salary compared to their male counterparts.

While adding the sector of employment, it is seen that compared to the private sector, government sector workers getting 35.9 percent more salary. This is an important reason for the preference for government jobs by educated unemployed.

Only a portion of an individual's productivity and earnings can thus be attributed to education. The study of Morgan (1962) in the USA and other countries shows that the father's education is the most important factor in determining the extent of education of a person leading ultimately to the earnings of the person concerned. The first part of the present chapter (section no 6.4.1.1.1.) shows that there is a significant difference in the mean value of the levels of education of fathers to the levels of education, health status, and human capital development index of the respondent. It also supports the view of Shukla, (2007) that investment in human capital made by families on their children varied significantly with different levels of education. The previous section shows that Socio economic status of the family significantly influences the human capital development of the workers, individuals invest and attain different amounts of human capital depending upon their family background characteristics. So the next section of the study also tries to analyze first the influence of human capital on earnings on the regular salaried in Feroke municipality and another section of the study uses a variable SES (socioeconomic status) of the family for predicting the earnings of the workers.

Table 6.23

Estimated regression equation of regular salaried employment of the workers with SES of the family

	1	2	3	4	5	6	7	8
(Constant)	11.78 (.00)	11.176 (.00)	9.251 (.00)	9.47 (.00)	9.375 (.00)	9.186 (.00)	9.222 (.00)	9.06 (.00)
Years of schooling	0.042 (.00)	0.05 (.00)	0.056 (.00)	0.054 (.00)	0.056 (.00)	0.063 (.00)	0.064 (.00)	0.064 (.00)
Experience		0.076 (.00)	0.111 (.00)	0.093 (.00)	0.098 (.00)	0.1 (.00)	0.1 (.00)	0.102 (.00)
Experience square		-0.002 (.00)	-0.003 (.00)	-0.002 (.01)	-0.002 (.00)	-0.002 (.01)	-0.002 (.00)	-0.002 (.00)
% of SSLC			0.021 (.00)	0.018 (.00)	0.017 (.00)	0.018 (.00)	0.018 (.00)	0.017 (.00)
Father edn dummy sec				0.22 (.01)	0.137 (.192)	0.157 (.14)	0.154 (.14)	0.164 (.12)
Father edn Dummy Higher				0.91 (.00)	0.791 (.00)	0.849 (.00)	0.85 (.00)	0.863 (.00)
Mother edn Dummy sec					0.138 (.21)	0.182 (.10)	0.172 (.12)	0.167 (.13)
Mother edn Dummy higher					0.227 (.088)	0.236 (.07)	0.213 (.12)	0.214 (.12)
Father employment dummy salaried						-0.181 (.087)	-0.2 (.07)	-0.199 (.074)
father employment dummy self employed						0.12 (.279)	0.106 (.35)	0.105 (.36)
RD dummy APL							-0.054 (.56)	-0.042 (.66)
Aspiration								0.01 (.56)
R square	0.036	0.07	0.226	0.321	0.331	0.352	0.353	0.354
F value	8.13	5.45	15.67	16.8	13.04	11.35	10.31	9.45

Table 6.23 gives the test results of a model which include years of schooling, experience, percentage of marks, father's education, mother's education, father's employment status, the childhood economic condition and aspiration level

to regress the earning function. After adding all these variables, the predictability is only 35.4 percentage. This shows that these variables can explain only 35 percentage of the variability in income of the workers. Hence analyzing the result, it found that years of schooling, Experience and experience square, percentage of mark and father's education are found to be the significant factors which determine the earnings of the workers. But there are some other important factors which influences the productivity of labourers which should be an area for further studies.

Skill and competencies are considered the components of human capital. Becker (1974) provides a link between ability and earnings. The conventional measures of ability are intelligence test scores, school grades and personality tests etc. Here the study considers percentage of marks in SSLC as a measure of the level of skill and competencies. The one percentage increase in the percentage of mark leads to 2.1 percentage increase in the earnings of the salaried workers.

When including the father's education as a variable, the analysis shows that children of fathers with secondary education earn 2.2 percentage more compared to those whose fathers have only primary education. Additionally, children of highly educated fathers earn 9.1 percentage more than those with primary-educated fathers. However, factors such as the mother's education, the father's employment, the family's economic condition, and the aspiration level do not significantly impact the earnings of salaried workers.

The study of Bhardwaj (2013) in Himachal Pradesh shows that fathers' education is positively related to the earnings of the respondent but it is not statistically significant. In the present model, while adding the dummy of father's education into the equation, no change is visible in the explanatory power of the model. In the present study, the results show that while comparing the earnings of the respondents of primary educated father with respondents of higher educated father, significant influence is seen at 9.1 percentage.

The study of Bhardwaj (2013) in Himachal Pradesh shows that the father's occupation is negatively related to the earnings of the respondent but not statistically

significant. The present study also shows that the type of occupation of the father is not significantly related to the respondent's earnings.

The earnings of the regular salaried workers are significantly influenced by variables of the years of schooling, experience and experience square, gender, percentage of mark and father's level of education. The next section of the study analyses the earnings function of the total workers.

6.5.3. The Human Capital Earning Function of all Types of Workers

Education is an important factor which influence of the earnings of regular salaried group when compared to casual and self-employed. So the present section analyzed the earning function of total workers.

Table 6.24

Earning function of total workers

Co-efficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.177	.417		2.821	.005
	Years of schooling	.074	.015	.326	4.919	.000
	Experience	.087	.021	.934	4.247	.000
	Experience square	-.002	.001	-.592	-2.788	.006
	Percentage mark on SSLC	.016	.003	.399	5.874	.000
	Dummy male	.519	.068	.341	7.653	.000
	Father education dummy sec	.015	.094	.010	.162	.871
	Father education dummy Higher	.501	.159	.167	3.143	.002
	Mother education dummy sec	.065	.095	.042	.683	.495
	Mother education dummy Higher	.126	.123	.063	1.027	.305
	Father employment dummy salaried	-.044	.097	-.025	-.452	.651
	Father employment dummy self employed	.075	.098	.039	.761	.447

Co-efficients					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Social class dummy general	.042	.135	.018	.314	.754
Social class dummy OBC	.010	.090	.006	.106	.915
RD dummy APL	-.044	.082	-.029	-.533	.595
Aspiration	.009	.013	.030	.652	.515
D govt	.382	.086	.203	4.459	.000
R square			46.3		
F value			16.26 (.00)		

a. Dependent Variable: LNY

Table 6.24 shows the regression results of total workers' earning function. The study took dependent variables as log annual income and independent variables such as years of schooling, experience and experience square, percentage of mark in SSLC, gender, sector of employment, aspiration level and socio-economic variables like education of the father, education of mother, employment status of the father, and the childhood economic condition. While adding all these variables into the equation, the overall predictability of the Model is 46.8.

The result of the analysis shows that a one-year increase in years of schooling increases 7.4 percentages of the earnings of the workers. It is seen that while experience increases to a one-year, income increase of 8.7 percent. It shows that experience in work influences the earnings of the workers than the years of education. The percentage of mark is another important variable which influences the earnings of the worker. It shows that one percentage increase in percentage of mark leads to a 1.6 percentage increase in the earnings of the workers. The gender difference in earnings exists here; the male earns 51.9 percentages more compared to the female. Among the socio-economic variables, father education is an important factor which influences the earnings of the worker. The children of fathers with higher education earn 50.1 percentages more earnings than the children with primary educated fathers. Hence education of the father is an important variable which influence the earnings of the workers. The sector of employment is an important

variable which influences the earnings of the workers. The Government sector employee gets 38.2 percentages more earnings than the private sector employees. The years of schooling, experience and experience square, percentage of mark, gender, and sector of employment and father's education significantly influence the earnings of the total workers of the Feroke municipality.

From the analysis, it is found that parent's education is an important determinant of the human capital development of their child. This may be due to the fact that an educated parent is more aware of the importance of education and they may ready to invest more in their child's education. While considering the factor that influences health status, it is evident that a mother's education is one of the factors which influences the health status of a person is concerned. This may be due to the fact that an educated mother may influence the food habits, and lifestyle of a child is concerned and that automatically influences their health status. The type of employment of a father is significantly related to the education and human capital development of their child. The children of regular salaried or self-employed fathers have more education and human capital development when compared to casual workers. This may be due to the fact that a person with regular salaried or self-employed may have a high level of education when compared to casual workers, and they may have more time, money and knowledge to investing in the child's studies. The health status of a child is not much related to the employment status of a father, which may be due to the well-developed community health system which prevailed in Kerala. The influence of Anganwadi and community health workers may have provided basic health facilities to all children irrespective of the economic status of the father along with the comparatively high level of female education that exists in Kerala.

It is found that childhood economic condition is an important factor influencing education, health and human capital development. Families with high income may be able to provide better learning facilities and nutritious food than poor families. Social class is significantly influencing the health status of the respondent. The health status may depend upon the caste category, the majority of

the SC and OBC castes belong to the economically backward category. This economic difference may affect the consumption of nutritious food and health care. It may reflect the health status of the respondent.

The productivity analysis of workers in Feroke municipality shows that level of education, experience, gender and sector of employment is an important factor which influences earnings. This result among the Socio-economic variables fathers' level of education is an important factor which determines the earnings of their child. It may be due to educated fathers being more aware of educational qualifications and job opportunities, hence their children’s earnings are higher than the primary educated fathers.

6.6. Conclusion

This chapter examined human capital development and worker productivity in Feroke municipality. The study identified that factors such as the father's education, mother's education, father's employment, and the family's economic condition play a key role in shaping workers' human capital. Furthermore, productivity was analyzed using Mincer's human capital earnings function, revealing that years of schooling, experience, experience squared, gender, academic performance, sector of employment, and father's education all significantly influence workers' earnings.

CHAPTER 7

SUMMARY, FINDINGS AND CONCLUSION

7.1. Summary

The study 'Human Capital Development and Labour Productivity with Special Reference to Kerala', analyses the effect of human capital on preference of employment status and earnings of the workers. The study focused on the following objectives and hypothesis.

Objectives

1. To analyze the impact of human capital development on employment preferences among workers in Kerala.

2. To analyze the effect of human capital development on the productivity (earnings) of workers in Kerala.

3. To evaluate the combined influence of human capital development and the socioeconomic status of families on the productivity of workers in Feroke Municipality.

Hypothesis

1. H_0: There is no significant influence of human capital development on the type of employment preference of the workers in Kerala.

2. H_0: There is no significant effect of human capital development (years of schooling) on the labour productivity (earnings) of the salaried workers in Kerala.

3. H_0: There is no significant effect of human capital development (years of schooling) on the labour productivity (earnings) of the self-employed workers in Kerala.

4. H_0: There is no significant effect of human capital development (years of schooling) on the labour productivity (earnings) of the causal workers in Kerala.

5. H_0: There is no significant relationship between the parental education and the human capital development of their children.

The first chapter of the study gives a design of the study, which includes context, problem statement, objectives, data source and methodology, limitations and organization of chapters. The second chapter of the study deals with the review of literature. The reviewed literature is classified into two heads, namely theoretical studies and empirical studies. Many existing works of literature are reviewed. A detailed discussion of the methodological framework is given in the third chapter. It discusses the important data and methodologies used in the study are given. Chapter four analyzes the Employment preferences of workers in Kerala. Here analysis of the influences of human capital and other demographic variables on the type of employment preference of the workers. The study used the multinomial logistic regression method to predict the preference employment status of the workers. Here types of employment status are the dependent variable. The level of education (Proxy for human capital), age, sex and religion are independent variables. The results show that the preference of the type of employment status and level of education (Proxy for human capital), age, sex and religion are the significant factors which influence the type of employment preference of the workers. Chapter five analyzes the human capital development and productivity (earnings) of workers in Kerala. To analyze the effect of human capital on the earnings of the workers in Kerala, the study used the Human capital earning function framework of Mincer. The log of annual earnings is taken as a dependent variable and years of schooling, experience, experience square, sex etc. are used an as independent variable. The analysis shows that there is a significant relation between years of schooling and

annual earnings of the regular salaried workers but there is no significant relation between the years of schooling and earnings of the casual workers. Chapter six analyzes the productivity of workers by using primary data. The chapter also analyses the influence of Socio-economic status of the family on the productivity of the workers. From the analysis, it is seen that the father's education, mother's education and income status of the families significantly influence the development of the human capital of their child. By considering socio economic status and productivity it is seen that a father's education significantly influences the earnings of the workers. The important findings of the analysis chapter are discussed in the next section.

7.2. Findings

Major findings of the study are discussed under three heads based on the three objectives, namely, Human capital and type of employment preference, Human capital development and (productivity) earnings, and Human capital development, socio economic status and productivity of workers.

7.2.1. Human Capital Development and Type of Employment Preference

- Gender significantly influences the employment status of the workers. The labour force participation of females is very low in Kerala. The majority of the females (64.8 percent) are doing household work alone as their primary activity status.

- The females prefer regular salaried employment. Nearly half of the working women are (45.5 percentage) in regular salaried employment whereas male this percentage was only 24.4 percent.

- The MLNR (Multinomial Logistic Regression) result found that when compared to a female employee, a male employee has only 30 percent chance to become a regular salaried when compared to a casual worker.

- The Hindus, Muslims and Christians are nearly equal in participation in regular salaried employment.

- Religion is one of the important influencers in deciding the preference of the types of employment of the workers. The Muslim respondent is 2.36 times more likely to obtain a salaried job to casual work than the Christian respondent.

- When compared to postgraduates, primary and below have only 0.2 percentage probability to become a regular salaried employee. When compared to post graduates, the chance to become a regular salaried employee of middle, secondary, higher secondary educated and graduates are .2 percentages, .5 percentages 2.7 and 11.3 percentage respectively.

- Age and religion significantly predict the probability to select self-employed work when compared to casual work.

- The levels of education and gender are not significant factors in determining the probability of becoming self-employed with respect to casual workers.

- When a one-year increase in age, will increase only 0.5 percentage more chance to become a self-employed when compared to casual work.

- When compared to the Christian community, the Muslim community is 2.96 times more likely to obtain self-employment than casual work.

- Health status is also an important determinant of the employment status of a person. Among healthy persons, 48.2 percentage are in labour force, while unhealthy persons only 16.3 percentage are in labour force

- The type of jobs preferred by persons with different health statuses reveals that the highest percentage of no-difficulty females are engaged in regular salaried work, and they also participate in casual work. The Self-employment participation is low. while considering with difficulty females all of them are engaged in casual work. In the case of unhealthy men, some are engaged in regular salaried and the majority are in the self-employed category. Female, the only option is casual work.

- The study rejects the first hypothesis that there is no significant influence on human capital development and the type of employment preference of the workers in Kerala.

7.2.2. Human Capital and Productivity

- Income is positively correlated with education and age. Highly educated individuals earn more than less educated individuals of all ages.
- The basic earnings profile with respect to age and education has appeared like the predictions of human capital theory, which is a positive but declining rate of earning growth.
- The level of education increases earnings of the regular /salaried workers and self-employed workers but in the case of casual workers, not much difference seems to be between higher educated and middle educated.
- In Kerala there is a serious issue of gender pay gap. With same level of education, males earn more than females in all levels of education. The highest earning gap is seen at the elementary level and it is comparably lesser among the higher educated.
- The highest gender difference in earnings exists among casual workers.
- The higher educated female regular salaried workers earn more than the higher educated female casual workers.
- Higher educated self-employed female's earnings are higher than the self-employed males. Moreover, it is seen that the only category of females who can earn more than their male counterparts is from higher educated women who are doing self-employment. It can be seen when compared to regular salaried and casual labor, higher educated females can earn in self-employment jobs.
- The elementary-educated casual workers (both men and females) earn more than the elementary-educated regular salaried workers. This shows that

regular salaried employment of less educated are not seems to be a better choice of employment. It is better for them to enter in casual job than doing regular salaried type of job.

- The regular salaried workers, the earning gap decreases as the level of education increases.
- Among the regular salaried workers, the general caste earns more than the SC/ST community. In the case of self-employed general caste earning is more than the OBC and SC/ST caste. In the case of casual workers, there is not much social difference is visible.
- While compared to the private sector employees, the government sector employees get high earnings. A gender pay gap is visible irrespective of the sector of employment while the difference is highest in the private sector.
- A one-year increase in experience contributes only 6.3 percentage increase in earnings.
- Gender is an important variable which determines the earnings of regular salaried job in Kerala. When comparing males to females, the income increases to 72.9 percentage.
- Social class is an important factor which determine the earnings of the workers. when compared to SC, the general category is getting 25.6 percent and OBC category is getting 25.8 percent more salary, it is very relevant as far as a progressive state like Kerala is concerned.
- Compared to the private sector workers, government sector workers getting 53.2 percent more salary.
- An additional working month in the last year, increases 15.2 percentage earnings to the workers.
- The gender pay gap is highest among the casual workers. The male earnings are more than 130 percent compared to their female casual workers.

- An increase in an additional working month in the last year leads to a 14.4 percent increase in the income of a casual worker.

- The study rejected the second hypothesis that there is no significant effect of human capital development (years of schooling) on the labour productivity (earnings) of the salaried workers in Kerala.

- The study accepted the third hypothesis that there is no significant effect of human capital development (years of schooling) on the labour productivity (earnings) of the self-employed workers in Kerala.

- The study accepted the fourth hypothesis that there is no significant effect of human capital development (years of schooling) on the labour productivity (earnings) of the causal workers in Kerala.

7.2.3. Socio Economic Status, Human Capital Development and Productivity (Based on Primary Data)

- The father with middle and higher levels of education, their child's level of education, health status, and human capital are almost the same or no significant difference in their mean value. But fathers with primary education, whose mean value is significantly different from the children with middle and higher educated fathers.

- While comparing the difference in the education, health and human capital development of a respondent with their mother's education, it is seen that while comparing a responded with primary educated mother has significant difference in their achievement in above said variables when compared to a respondent with higher educated or secondary educated mother.

- The study rejected the fifth hypothesis that there is no significant relationship between the parental education and the human capital development of their children.

- The type of employment of father is significantly related to the education and human capital development of their child. The father's employment status does not make any significant difference to the health status of the respondent.
- Income of the family or economic condition of the family makes a significant difference between the level of education, health status, and human capital development index of the respondent.
- Across different caste categories there is no significant difference between the mean value of the education and human capital development of the respondent but there is a significant difference in health status across different caste categories.
- The additional year of schooling will increase the earnings of the individuals by 4.3 percentages of salaried workers.
- A one-year increase in experience contributes 7.9 percentage increases in earnings.
- The male earnings are more than 52.4 percent compared to their female regular salaried workers.
- In the sector of employment, it is seen that compared to the private sector, government sector workers get 35.9 percent more salary.
- The one percentage increase in the percentage of mark leads to 2.1 percentage increase in earnings of the salaried workers.
- The income of a respondent whose father is secondary educated, and higher educated earns 2.2 percentage and 9.1 percentage more while comparing the earnings of a respondent whose father is a primary educated.
- When a one-year increase in years of schooling increases 7.4 percentages of the earnings of the workers.

- One-year increase in experience leads to 8.7 percentage of the earning of the workers.
- When one percentage increase in percentage of mark leads to 1.6 percentage increase in the earnings workers.
- The male earns 51.9 percentages more income when compare to the female workers.
- The Government sector employee get 38.2 percentage more earnings than the private sector employees.

7.3. Conclusion

The study utilized both IHDS 2011-12 data for Kerala and primary data from Feroke municipality to analyze workers' earnings and productivity. From both datasets, several key findings emerged. Education, gender, caste, and sector of employment were significant determinants of earnings. Higher levels of education generally led to better employment opportunities and increased earnings, though women with higher education still faced a substantial pay gap compared to men. The analysis also highlighted a gendered division of labor, with many women, despite their education, primarily engaged in household work, limiting their participation in the labor market. Caste remained a significant factor, with workers from lower caste backgrounds earning less, likely due to educational disparities and discrimination. Parents' education and employment status were crucial in shaping their children's educational outcomes and future earnings. The preference for government jobs over private sector employment was clear, driven by higher wages in the public sector. Additionally, the Muslim community showed a higher inclination toward self-employment, possibly due to cultural and network factors. Both datasets confirmed these trends, with secondary data from IHDS showing caste differences in earnings, and primary data from Feroke municipality reflecting similar disparities, especially in gender pay gaps and sectoral wage differences.

To address these above mentioned issues, targeted policies are needed to reduce the gender pay gap and promote higher workforce participation among

women, particularly those with higher education. Encouraging self-employment for highly educated women through financial and professional support could also be beneficial. Reforms to improve private sector wages and job quality are essential to reduce the overwhelming preference for government employment. Policies aimed at increasing access to quality education for all caste groups should be prioritized to address long-term socio-economic disparities. Additionally, future research should incorporate qualitative variables, including cultural and psychological factors, to provide a more comprehensive understanding of labor market outcomes.

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APPENDIX

Appendix I

Multinominal Logistic Regression Results

Table 1.1

MNLR Model fitting information.

Model Fitting Information				
Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	1447.606			
Final	963.151	484.455	18	.000

Table 1.2

MNLR goodness of fit

Goodness-of-Fit			
	Chi-Square	df	Sig.
Pearson	706.129	750	.873
Deviance	613.377	750	1.000

Table 1.3

MNLR Pseudo R-Square

Pseudo R-Square	
Cox and Snell	.354
Nagelkerke	.408
McFadden	.216

Likelihood Ratio Tests

Table 1.4

MNLR Likelihood Ratio

Likelihood Ratio Tests				
Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	Df	Sig.
Intercept	963.151[a]	.000	0	.
AGE	975.939	12.788	2	.002
SEX	1010.802	47.651	2	.000
Religion	1004.932	41.780	4	.000
Level of Education	1331.150	367.999	10	.000

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Appendix II

Descriptive Statistics of Socio-Economic Status and Human Capital Development

Table 2.1

Descriptive statistics of level of education, health and human capital development index

Descriptive				
			Statistic	Std. Error
Level of Education	Mean		66.3542	1.32368
	95% Confidence Interval for Mean	Lower Bound	63.7499	
		Upper Bound	68.9584	
	5% Trimmed Mean		67.2454	
	Median		66.6667	
	Variance		560.682	
	Std. Deviation		23.67873	
	Minimum		16.67	
	Maximum		100.00	
	Range		83.33	
	Interquartile Range		33.33	
	Skewness		-.495	.136
	Kurtosis		-.406	.272
Health Index	Mean		77.4844	.50371
	95% Confidence Interval for Mean	Lower Bound	76.4934	
		Upper Bound	78.4754	
	5% Trimmed Mean		77.9167	
	Median		80.0000	
	Variance		81.191	
	Std. Deviation		9.01060	
	Minimum		45.00	
	Maximum		95.00	
	Range		50.00	
	Interquartile Range		10.00	

Descriptive				
			Statistic	Std. Error
	Skewness		-.913	.136
	Kurtosis		1.329	.272
Human Capital Development	Mean		71.9193	.78339
	95% Confidence Interval for Mean	Lower Bound	70.3780	
		Upper Bound	73.4605	
	5% Trimmed Mean		72.5723	
	Median		73.3333	
	Variance		196.385	
	Std. Deviation		14.01376	
	Minimum		35.83	
	Maximum		97.50	
	Range		61.67	
	Interquartile Range		16.67	
	Skewness		-.730	.136
	Kurtosis		-.034	.272

Table 2.2

Descriptive statistics of Fathers level of education and human capital development

Descriptive									
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Level of Education	Elementary	171	56.6277	25.53221	1.95250	52.7734	60.4819	16.67	100.00
	Middle	127	77.1654	15.54466	1.37937	74.4356	79.8951	33.33	100.00
	Higher	22	79.5455	11.42241	2.43527	74.4810	84.6099	66.67	100.00
	Total	320	66.3542	23.67873	1.32368	63.7499	68.9584	16.67	100.00
Health	Elementary	171	76.0526	9.49010	.72573	74.6200	77.4852	55.00	95.00
	Middle	127	78.6614	8.67053	.76939	77.1388	80.1840	45.00	95.00
	Higher	22	81.8182	2.90544	.61944	80.5300	83.1064	75.00	85.00
	Total	320	77.4844	9.01060	.50371	76.4934	78.4754	45.00	95.00
Human Capital Development	Elementary	171	66.3402	15.38301	1.17637	64.0180	68.6623	35.83	97.50
	Middle	127	77.9134	8.96291	.79533	76.3395	79.4873	47.50	95.00
	Higher	22	80.6818	5.86238	1.24986	78.0826	83.2811	73.33	92.50
	Total	320	71.9193	14.01376	.78339	70.3780	73.4605	35.83	97.50

Table 2.3

Test of normality of the level of education, health and human capital development index

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Level of Education	.215	320	.000	.909	320	.000
Health	.226	320	.000	.912	320	.000
Human Capital Development	.175	320	.000	.943	320	.000
a. Lilliefors Significance Correction						

Table 2.4

Descriptive statistics of Mothers s level of education and human capital development

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Education	Primary	137	57.7859	28.65811	2.44843	52.9440	62.6278	16.67	100.00
	Secondary	127	79.5276	18.80338	1.66853	76.2256	82.8295	33.33	100.00
	Higher	56	81.2500	14.58604	1.94914	77.3438	85.1562	33.33	100.00
	Total	320	70.5208	25.46823	1.42372	67.7198	73.3219	16.67	100.00
Health	Primary	137	73.2117	9.82825	.83968	71.5512	74.8722	50.00	95.00
	Secondary	127	76.8898	6.45279	.57259	75.7566	78.0229	50.00	95.00
	Higher	56	77.8571	7.25241	.96914	75.9149	79.7994	50.00	90.00
	Total	320	75.4844	8.40770	.47000	74.5597	76.4091	50.00	95.00
Human Capital Index	Primary	137	65.4988	16.98725	1.45132	62.6287	68.3689	33.33	90.00
	Secondary	127	78.2087	9.98901	.88638	76.4545	79.9628	46.67	92.50
	Higher	56	79.5536	7.76382	1.03748	77.4744	81.6327	51.67	92.50
	Total	320	73.0026	14.67432	.82032	71.3887	74.6165	33.33	92.50

Table 2.5

Descriptive statistics employment of father and human capital development index

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Level of Education	Regular salaried	82	72.9673	17.88493	1.97506	69.0376	76.8971	33.33	100.00
	Self employed	63	73.5456	16.29434	2.05289	69.4419	77.6492	16.67	100.00
	Casual workers	166	61.3459	26.27448	2.03930	57.3194	65.3724	16.67	100.00
	Total	311	66.8814	23.22401	1.31691	64.2902	69.4726	16.67	100.00
Health	Regular salaried	82	78.7805	9.24832	1.02131	76.7484	80.8126	45.00	95.00
	Self employed	63	78.5714	6.92288	.87220	76.8279	80.3149	55.00	90.00
	Casual workers	166	76.5361	9.48149	.73591	75.0831	77.9892	45.00	95.00
	Total	311	77.5402	8.99700	.51017	76.5364	78.5440	45.00	95.00
Human Capital Development	Regular salaried	82	75.8741	10.30919	1.13846	73.6090	78.1393	46.67	95.00
	Self employed	63	76.0576	9.52771	1.20038	73.6581	78.4571	45.83	92.50
	Casual workers	166	68.9402	15.64915	1.21461	66.5421	71.3384	35.83	97.50
	Total	311	72.2103	13.73164	.77865	70.6781	73.7424	35.83	97.50

Table 2.6

Descriptive statistics of family Income.

Group Statistics					
	New RC	N	Mean	Std. Deviation	Std. Error Mean
Level of Education	APL	165	74.2427	18.16883	1.41444
	BPL	155	57.9575	25.92632	2.08245
Health	APL	165	78.7576	7.67888	.59780
	BPL	155	76.1290	10.08967	.81042
Human Capital Development	APL	165	76.4997	9.98661	.77746
	BPL	155	67.0425	15.94381	1.28064

Table 2.7

Independent t test

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Level of Education	Equal variances assumed	27.137	.000	6.539	318	.000	16.28524	2.49060	11.38511	21.18538
	Equal variances not assumed			6.469	274.090	.000	16.28524	2.51739	11.32937	21.24112
Health	Equal variances assumed	18.639	.000	2.632	318	.009	2.62854	.99867	.66370	4.59338
	Equal variances not assumed			2.610	287.307	.010	2.62854	1.00705	.64641	4.61067
Human Capital Development	Equal variances assumed	49.672	.000	6.400	318	.000	9.45718	1.47780	6.54969	12.36467
	Equal variances not assumed			6.313	255.805	.000	9.45718	1.49816	6.50689	12.40747

Table 2.8

Descriptive of caste and human capital development.

Descriptives									
		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Level of Education	General	36	69.9072	17.73577	2.95596	63.9063	75.9081	16.67	100.00
	OBC	226	64.8235	23.88790	1.58900	61.6923	67.9548	16.67	100.00
	SC	58	70.1152	25.69806	3.37432	63.3582	76.8721	16.67	100.00
	Total	320	66.3546	23.67811	1.32365	63.7504	68.9587	16.67	100.00
Health	General	36	81.5278	5.95452	.99242	79.5131	83.5425	65.00	95.00
	OBC	226	77.0354	9.19268	.61149	75.8304	78.2404	45.00	95.00
	SC	58	76.7241	9.34484	1.22704	74.2670	79.1812	55.00	95.00
	Total	320	77.4844	9.01060	.50371	76.4934	78.4754	45.00	95.00
Human Capital Development	General	36	75.7178	9.59795	1.59966	72.4703	78.9653	45.83	90.00
	OBC	226	70.9287	14.09448	.93755	69.0812	72.7762	35.83	97.50
	SC	58	73.4193	15.59274	2.04743	69.3194	77.5192	35.83	95.00
	Total	320	71.9189	14.01430	.78342	70.3775	73.4602	35.83	97.50

Appendix III

HUMAN CAPITAL DEVELOPMENT AND LABOUR PRODUCTIVITY WITH SPECIAL REFERENCE TO KERALA

BASIC INFORMATION

1. Name:
2. Age:
3. Height:
4. Weight:
5. Sex:
   1. Male 2. Female 3. Third gender
6. Marital Status:
   1. Currently married 2. Never married 3. Widowed 4. Separated
7. Religion:
   1. Hindu 2. Muslim 3. Christian 4. Others
8. Social class:
   1. General 2.OBC 3.SC 4.ST 5. Others
9. Mobile number:
10. Number of members in the family:
11. Land size:
12. Color of the ration card: 1. Yellow 2. Pink 3. Blue 4. White 5. No card
13. Ownership of house :1. Own 2. Rent 3. Others
14. Family details

Sl No	Members name	Relationship with the Respondent	Age	Educational Qualification	Activity Status	Average monthly income

(Educational qualification: 1. illiterate 2. Lp 3. UP 4. High school 5.HSS 6. Diploma 7. Degree 8.PG 9. Professional degree 10. Professional PG 11. Others 12.NA

Activity status: 1. Self-employed worker 2. Self-employed owner 3. self-employed unpaid worker 4. Casual laborer 5. Regular Govt salaried 6. Regular non-Govt salaried 7. unemployed 8. Doing domestic work 9. students 10. others

EDUCATIONAL INFORMATION

15. Educational qualification of the respondent

Sl. No:	Details of Qualification	Medium of education	Subject of Study	Type of institution	Duration Of the course	Pass/Fail	% of Mark or Grade
	SSLC						
	HSS						

[medium of education :1. Malayalam., 2. English

Type of Institution: Govt /aided/Unaided

General :1. Up to SSLC, 2. Humanities 3 Science 4. Commerce

Technical: 1. ITI, 2. Polytechnic

Professional: 1. B Ed, 2. M Ed, 3. Medical, 4. Engineering

16. English language ability :1. fluent 2. Little 3. No

17. Level of Job aspiration of informants

(1. Strongly disagree 2. Disagree 3. Neither agree nor disagree 4. Agree 5. strongly agree)

1. Employment opportunities were explored during the study period.
2. The study was aimed at gaining higher employment.
3. Wanted to get a job and live on an income without relying on others.
4. Getting a job was my biggest goal in life

EMPLOYMENT RELATED INFORMATION

18. How long do you waitto get employment after completion of your course?
19. Type of Employment
20. Sector of Employment

    1. Government 2. Private 3. others

21. Type of Job:
22. Age at the entry of present employment
23. Number of months working in the Last year
24. Number of days working in the last Month
25. Number of leave taken in the last month
26. Number of leave taken in the last year
27. Working Hours in a day
28. Number of days engaged in a week
29. Present and Past Work details
30. Weekend working hours
31. Monthly salary or daily wage
32. Total year of experience in the labor market?
33. Did you have any part-time Job?

    1. Yes 2. No

34. Income from a part-time job?
35. Who motivated you to get the present job?

    1.Own /self, 2. Father 3. Mother 4. Sibling 5. Cousins/relatives 6. others 7.NA

36. Have you had any training?

    1.Yes 2. No

37. Kind of training.

    1. Part of education 2. Part of job 3. NA

HEALTH RELATED INFORMATION.

38. How is your general health status?

    1.Poor 2. Fair 3. Good 4. Very Good 5. Excellent.

39. Highly Satisfied with family.

    5.Strongly agree 4. Agree 3. Neither agree nor disagree 2. Disagree 1. Strongly disagree

40. Do you suffer from anxiety, nervousness, or depression which entails that you cannot or must exert yourself to be able to have contact with others?

    1.Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

41. Due to physical difficulties you like to withdraw from the job and other duties.

    1.Strongly agree 2. Agree 3. Neither agree nor disagree 4. Disagree 5. Strongly disagree

42. Number of visits on a doctor in the last three months due to ill-health?
43. Number of working days lost in a month due to ill-health or Number of sick leave in the last three months?
44. How many times in a month do you visit a doctor due to ill health?
45. Do you consume any type of medicine in a day? 1. Yes 2. No
46. If yes, for what illness:
47. Do you face any type of health issue? (Please tick)

    1. Asthma 2. Cardiovascular disease 3. Diabetes 4. High BP 5. Diseases in joints / Muscles 6. Chronic pain 7. Gastro intestinal problems 8. Pain in joints and Muscles 9. Heart symptoms 10. Strock

SOCIO-ECONOMIC STATUS AT THE TIME OF SCHOOLING (10thstandard)

48. Type of family:

    1. Nuclear family 2. Joint Family

49. Economic status of the family

    1.APL 2.BPL 3.NA

50. Level of education of the father

    1.Elementary 2. Secondary 3. Higher

51. Level of education of the mother

    1.Elementary 2. Secondary 3. Higher

52. Activity Status of your father

1.Self-employed worker 2. Self-employed owner 3. Self-employed unpaid worker 4. Casual laborer 5. Regular/ Govt salaried 6. Regular non Govt salaried 7. unemployed 8. Doing domestic work 9. students 10. Others 11.NA

53. Activity status of your Mother

1.Self-employed worker 2. Self-employed owner 3. Self-employed unpaid worker 4. Casual laborer 5. Regular Govt salaried 6. Regular non Govt salaried 7. unemployed 8. Doing domestic work 9. students 10. Others 11.NA

54. 'Did you face any financial difficulty during the time of education?

1. Yes 2. No

55. Facilities in your house

1. Electricity 2. Water 3. Toilet 4. TV 5. Fridge 6. CAR 7. Two-wheeler 7. Washing machine 8. AC 8. Mixer/ Grinder 9. Telephone 10. Computer/Laptop 11. others

56. Mode of transport to school:

on foot -1, school/institution bus -2, public transport -3, bicycle -4, others

57. Did you take private tuition to improve your education?

1.Yes 2. No