STUDENT LOANS AND FINANCING OF PROFESSIONAL HIGHER EDUCATION IN DELHI

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DOCTOR OF PHILOSOPHY

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DECLARATION

I, Amit Kumar, declare that the thesis titled **"Student Loans and Financing of Professional Higher Education in Delhi"** submitted by me for the award of the degree of Doctor of Philosophy of Jawaharlal Nehru University is my own work. This thesis has not been submitted for any other degree of this university or any other university.

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CERTIFICATE

We recommend this thesis be placed before the examiners for evaluation for the award of the degree of PhD.

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To My Family

CONTENTS

DETAILED CONTENTS

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List of Tables

Tables Listed in Appendices

List of Figures

Figures Listed in Appendices

Abstract

Policies and practices of financing higher education have undergone several shifts around the globe. There is increasing visibility of privatisation and sharing higher education costs with households. In India, student loans are advocated as an alternative source of funding higher education (particularly costly professional courses) in the policy domain. In this context, this study examines the student loan financing of professional higher education in Delhi, using the data collected from a primary survey, supplemented by updated secondary data. Three specific issues addressed in this study are (a) household spending on professional higher education in Delhi, (b) growth of the student loan market in India, socioeconomic inequalities in access to student loans in Delhi, and difficulties graduates face while accessing student loans, and (c) understanding the labour market outcomes of graduates and how access to student loans intervein in this. The secondary data sources include *National Statistical Office* (NSO), *Reserve Bank of India* (RBI) and *All India Survey of Higher Education* (AISHE). The primary survey covers a sample of 1,508 students pursuing BTech, MBA or PGDM courses in Delhi.

The secondary data analysis finds that student loans market in India has experienced substantial growth in terms of number of accounts and amount sanctioned during the last one and a half decades. This expansion, however, is characterised by wide regional imbalances. For instance, the southern region, with 21% of India's total population, alone has about 60% of total student loan accounts in the country. The primary survey finds that of the total students surveyed (1,508), around 19.1% (288 students) applied for student loans to fund their studies. Among the applicants, less than three-fourth were granted loans by commercial banks. Results show that students from low socioeconomic setups are less likely to receive student loans than their wealthy counterparts, even though they apply more. Interactions with students reveal that the procedure to avail student loans is quite tedious, and it discourages several of them from accessing it, even if they face severe financial hardship to fund their education. Further, borrowers' experiences reveal that they face additional problems after the loan is sanctioned, such as stress regarding academic performance, securing a job and loan repayment. More importantly, borrowers face stress regarding securing a job as there exists a gap in placement rates and salary offered based on the student's socioeconomic and institutional factors. Borrowers feel that student loan debt will affect their major life choices such as further studies, career choices, buying a car, time of getting married, and financial contribution to the family. To sum, the presence of several imperfections in student loan market in India, coupled with the increasing job uncertainties for professional graduates, have made student loans inaccessible. As the Government of India has been and continues to emphasise student loans as an alternative to funding higher education, specifically professional courses, there is an urgent need to overhaul the student loan policies in India.

CHAPTER 1
INTRODUCTION

1.1 Theory & Context

Higher Education (HE) plays a critical role in creating a better world. It contributes to economic growth and development, and plays an equally important role in improving human well-being with the supply of socially conscious, civilised, and enlightened citizens (Schultz, 1961; Vaizey, 1962; Tilak, 2006; Hanushek & Wobmann, 2007; Pradhan, 2009; Gillies, 2015; Tilak & Choudhury, 2021; Marginson *et al.,* 2022; Varghese & Panigrahi, 2022). Higher education facilitates social progress and works as a driver of inclusive growth (Tilak, 2018a). Accessing HE enhances the intellectual and social attributes of students and prepares them for lifelong learning (Marginson *et al.,* 2022). Further, HE has a significant role to play when a developing country moves towards a knowledge economy (UNGA, 2015; Tilak & Choudhury, 2019). Scholars around the globe have argued that countries with a larger proportion of graduates participating in the labour market have higher total factor productivity and extra capacity to adopt technology and innovation (George & Augustine, 2009; Whalley & Zhao, 2013; Altbach, 2013; Bloom *et al.,* 2014; Rahman & Unnikrishnan, 2015; World Bank, 2017). Changes taking place in the production of knowledge demand for more HE graduates, as they contribute significantly to the expansion of knowledge business and are increasingly critical to the world economy (Varghese *et al.,* 2022). Human capital theory also argues that investment in HE is critical for countries to compete in the global knowledge economy. Overall, HE is critical to human development and societal well-being.

It is argued that, within HE, technical education produces *'specialised human capital'* (Schultz, 1988), which yields direct economic benefits and accounts for a large magnitude of externalities (McMahon, 2018). Further, private and social returns from technical education are estimated to be relatively higher than general HE courses (Nalla-Gounden, 1967; Tilak &

Varghese, 1991; Duraisamy & Duraisamy, 1993; Tilak, 1999; Duraisamy, 2002; Kijima, 2006; Mendiratta & Gupt, 2013; Tilak & Choudhury, 2021). For instance, Nallagoundan (1967) estimated the private rate of return in HE in India and found that it is 8.1% for general HE courses and 13.5% for professional courses. Similarly, a recent study by Chen *et al.* (2022) reported that the private rate of return from a graduate degree in India is 9.8%, which is quite less than the estimated return to a technical degree in engineering, i.e., 42.6%. At the macro level, Solow (1960) found that only one-eighth of the growth in productivity was due to an increase in the inputs of labour and capital, and the majority of the unexplained productivity was due to 'technical progress,' which is mainly attributed to the investment in technical education. Likewise, Schultz (1988) concluded that increasing returns to total factor productivity in the production was due to investment in technical and professional education. Moreover, in the context of changing nature of work (World Bank, 2019), there is a focus on producing specialised human capital with advanced and foundational skills to cope with the changing labour market situations. For instance, skills are required in the area of artificial intelligence, robotics, machine learning, and big data analysis in the changing labour market, and technical and professional education fosters in production of such skills. It is expected that specialised human capital helps construct individuals' dynamic capabilities that help minimise inequalities in opportunities.

Owing to the significant contribution of higher and technical education to social and economic development, demand for HE continues to proliferate around the globe (Altbach & Levy, 2005; Trow, 2007; Carnoy *et al.*, 2012; Varghese, 2015; Marginson, 2016; Buckner, 2017; Dubey *et al.*, 2019; Barakat & Shields, 2019; Carrieri *et al.*, 2021; Rong & Deng, 2022). SDG 4 aims to ensure equal and affordable HE for all and eliminate socioeconomic disparities in access to higher education by 2030. While the global population multiplied by 2.1 between 1970 and 2020, student enrolment in HE multiplied by 7.1 during the same period (UIS, 2021). The world average Gross Enrolment Ratio (GER) in HE has gone up from 13.6% to 40.2% between 1990 and 2020 (ibid). Most high-income countries and several middle-income countries tend towards or have exceeded the 50% mark in GER in HE (ibid). However, the regional GER varied from 86.7% in North America to 25.8% in South Asia in 2020 (ibid). Among the South Asian countries, GER in HE remains low in Pakistan (12.2%), Nepal (13.5%) and Bangladesh (22.8%) in 2020. The rapid

growth in GER has shifted the HE sector in many countries from an elite to a mass phase of access.[1] An estimation by Kwiek (2021) suggests that the massification of HE in high-participation societies at GER levels of 60% to 90% would be achieved in most countries by 2050. However, there might be differences by country based on the initial point and pace of expansion.

Similar to the global trend, there is a growing aspiration of Indian youth to access HE. Higher education sector in India has undergone a massive expansion in terms of institutions and student enrolment in the past three decades (Varghese, 2015, 2022). It has become one of the largest HE systems globally with around 1.5 million faculties and 38.5 million students enrolled in 1,043 universities and 42,343 affiliated colleges (MoE, 2020). The GER, as estimated by the MoE based on data collected from higher education institutions (HEIs) through the *All India Survey of Higher Education*, has gone up close to seventy times in last seven decades – 0.4% in 1950-51 to 27.1% in 2019-20 (UGC, 2015; MoE, 2020). This is mainly because a growing number of secondary graduates aspire to access HE to acquire new skills required to get meaningful employment in the job market (Marginson, 2016). In fact, the National Education Policy (NEP) 2020 aims to achieve a GER of 50% in HE by 2035. India aims to create a knowledge society by providing access to quality HE to Indian youth, which would help address the new realities of the 21st century. Thus, like many other developing countries, HE sector in India has undergone a massive expansion in terms of institutions and student enrolment in the past three decades.

The expansion of HE in India has seen disciplinary imbalances (Tilak & Choudhury, 2021). Within HE, the professional higher education[2] (PHE) sector in India has registered an extraordinarily high growth rate compared to courses offered in humanities and social science disciplines (Choudhury, 2016a; Tilak, 2018a; Singh & Singh, 2018), notably in recent years. The

[1] Trow (2000) states that development of HE is experienced in three phases: elite, mass and universal. A country is at an elite stage of HE when the GER is up to 15%; at a stage of massification when the GER is between 15% and 50%; and at the stage of universalisation when GER is above 50%.

[2] According to the Indian Standard Classification of Education (MHRD, 2014), professional higher education includes courses in the field of Agriculture, Criminology & Forensic Science, Design, Education, Engineering & Technology, Fashion Technology, Fine Arts, Fisheries Science, Home Science, IT & Computer, Journalism & Mass Communication, Law, Library & Information Science, Management, Marine Science or Oceanography, Medical Science, Physical Education and Veterinary & Animal Sciences.

number of professional HEIs rose from a meagre 374 (1970-71) to 5,541 in 2019-20, a 14.8-fold growth in the past 50 years (UGC, 1991; MoE, 2020). More importantly, the last decade observed significant growth of professional HEIs – 3,214 (3,077 colleges and 137 universities) in 2011-12 to 5,541 (5,237 colleges and 304 universities) in 2019-20, registering a compounded annual growth rate (CAGR) of 7.9% during the period (see Table A1.1 in appendix).[3] In Delhi, professional HEIs increased from 38 to 53 during 2011-12 to 2019-20, reporting a CAGR of 4.2% (MoE, 2014, 2020). While the share of professional HEIs to overall HEIs decreased from 13.5% to 12.8% between 2011-12 and 2019-20 at all-India level, it increased from 20.3% to 25.6% in Delhi during the same period (ibid). Further, student enrolment in professional courses increased from 39.6 lakhs to 71 lakhs (CAGR 7.9%) during this period. Engineering education holds the highest student enrolment of 39 lakh, accounting for more than half of the total enrolments in PHE (see Table A1.1 in appendix) and 11.6% of overall HE in 2019-20 (MoE, 2020).

The rapid growth of HE worldwide is accompanied by a fast-growing private sector that has changed the composition of HEIs (Marginson, 2016; Ahmed, 2016; Buckner, 2017; Levy, 2018; Buckner & Khoramshahi, 2021; Varghese & Sarkar, 2022). Though every region in the world experienced differential growth of private HEIs in the post-liberalisation period, they made up more than 60% of all new institutions in many countries (Buckner, 2017). It was observed that regions previously having few private HEIs reported a substantial increase in new private HEIs (mainly the Middle East and North Africa, South Asia, Europe, and Sub-Saharan Africa) compared to those regions that had more private HEIs (ibid: p.300). The unprecedented expansion of HE sectors globally, notably private HEIs, is mainly attributed to the increasing demand for HE and limited national resources (Altbach & Levy, 2005; Bjarnason *et al.*, 2009; Kinser *et al.*, 2010). Experiences in several countries reveal that HE is increasingly commercialised with the emergence of neoliberal ideology (Levy, 2005; Middlehurst & Fielden, 2011).

In line with global trends, expansion of HE sector in India is also accompanied by a fast-growing private sector in the post-1990s (Varghese, 2015; Choudhury, 2016a; Tilak, 2018a; Muzammil, 2019; Choudhury & Kumar, 2021; Varghese & Sarkar, 2022; Varghese & Panigrahi,

[3] Number of PHE institutions cited here include institutions offering four major disciplines – engineering, management, medicine, and law. These cover around 64.3% to of the total enrolments in PHE in India (NSO, 2020).

2022; Venkatesh *et al.,* 2022). After the 1990s, the education sector of different regions was opened up for private participation; since then, it has expanded rapidly. For instance, there was no private university or university-level institution in the country in 1990-91, which has increased to 408 in 2019-20 (MoE, 2020). Similarly, private colleges have increased more than six times (from 6,627 to 42,343) during the last three decades of post-liberalisation. Concurrently, student enrolment in private HEIs has increased from 16.7 million in 2010-11 to 25.5 million in 2019-20, demonstrating an increase of about 52.7% during the last decade (MoE, 2020). Currently, private sector holds more than two-thirds of all HEIs that cater to 66.3% of overall enrolments in HE (ibid). The private sector participation in PHE courses is significantly higher than in the humanities and social science courses. For instance, in 2017-18, engineering courses accounted for 86.5% of enrolment in the private sector, followed by management (81.6%), education (74.5%) and law courses, i.e., 68.1% (see Figure A1.1 in appendix). Similarly, in the last three decades (1990 to 2020), the number of private medical colleges increased by 540%, whereas the number of government-run medical colleges grew up only by 174% with an overall growth of 279% (Choudhury, 2016b; AICTE, 2021). The private sector's share in the total number of medical colleges increased from 3.6% in 1950 to 48.3% in 2020. In this period, the private sector enrolment share increased from 1.4% to 47% in MBBS courses (NMC, 2020). In Delhi, the highest private participation is noted for management discipline (91.7% student enrolment), followed by engineering (54.1%) and least in medical sector, i.e., 14.1% (see Figure A1.2 in appendix). Thus, the growth of PHE in India has been mainly driven by developments in the private sector that lead the HE sector towards a 'new massification' (Varghese, 2015; Varghese & Panigrahi, 2022).

The massive expansion of HE, particularly in the private sector, has made significant changes in the financing pattern in HE. Two important ideas that are often discussed in both academia and policy space are declining or stagnant public funding on HE (Prakash, 2007; Dhilon & Sehgal, 2008; Tilak, 2015) and increasing household investment in it (Duraisamy & Duraisamy, 2016; Chandrasekhar *et al.,* 2019; Kumar & Naincy, 2020; Rani, 2021; Choudhury & Kumar, 2022). The government expenditure on HE as a percentage of Gross Domestic Product (GDP) varies widely across countries and regions worldwide. For instance, in 2020, Sierra Leone allocated the highest share of GDP (3.7%) towards the HE sector, followed by countries like China (1.8%), Costa Rica (1.4%) and South Africa, i.e., 1.3% (UIS, 2021). On the other hand, this share

was quite less in countries like Uzbekistan (0.30%) and Armenia, i.e., 0.31% (ibid). In the Asia-pacific region, while countries like Australia, Hong Kong, New Zealand, and Turkey allocate more than 1% of their GDP towards HE, a few countries like Bangladesh, Sri Lanka, and Myanmar spend less than 0.5% of their GDP (ibid). Studies examining the pattern of government financing of HE suggests a decline or stagnancy in the GDP share allocated to HE (Marginson, 2016; Webber, 2018; Mitchell *et al.*, 2018; Tilak & Choudhury, 2022). Though the decline is more prevalent in developing countries, it is not confined to them. In fact, many developed countries like Germany, Hungary, and Spain have experienced a decrease in public expenditure on HE over the years (Marginson, 2016).

India is not an exception to the global funding pattern. Due to the massive expansion of HE and increased private sector participation, a noticeable change in the funding pattern of HE in India has been observed in the last three decades (Chattopadhyay, 2019; Chattopadhyay & Panigrahi, 2022). Before the liberalisation policy (introduced in the 1990s), HE was primarily funded by the public sector, and the role of the private sector was minimal. However, the sector was opened up for private participation under the neo-liberal policies which resulted in a massive expansion of private sector in HE (Varghese, 2015; 2022). As a result, the budgetary support for university and HE has declined from 0.83% of GDP in 2007-08 to 0.49% in 2017-18 (ABEE, 2011, 2022). NEP (2020) states that public expenditure on education has not come close to the recommendation given by the Kothari Commission (1966), i.e., 6% of GDP. The policy considers public investment in education extremely critical and envisions a substantial increase in it to reach this target at the earliest (NEP, 2020: p.61).

The expansion of Indian HE in the private sector has made it costly (Maitra, 2019; Panigrahi, 2020; Choudhury & Kumar, 2022). According to the National Statistical Office (NSO)[4] 75th round data of 2017-18, the annual per-student household expenditure on HE in India is ₹26.4 thousand, accounting for 17.3% of total annual household consumption expenditure. Fees account for 61.2% and non-fee spending constitutes 38.8% of the overall education spending (ibid). Though this is the picture for overall HE, household spending significantly differs between general

[4] On 23rd May 2019, the National Sample Survey Office (NSSO) was merged with the Central Statistical Office (CSO). It is now known as the National Statistical Office (NSO).

and professional HE courses. Students pursuing professional courses spent ₹71.4 thousand annually on their education, remarkably higher (483% more) than those attending general HE courses, i.e., ₹14.8 thousand (Choudhury & Kumar, 2022). Households spend around 46.7% and 9.7% of their annual consumption expenditure if their child is pursuing a professional course and general course respectively, marking a stark difference (ibid: p.7). This is mainly due to higher fees charged in professional courses such as engineering, management, medicine, and law – particularly in private institutions. Fee charged in professional courses is reported to be 711% more than in general HE courses (ibid: p.7).

Given the costly nature of professional courses and thereby huge household investment, examining the sources of financing HE in India is important (Panigrahi, 2018, 2022), particularly the household sources. An important recommendation given by the policymakers to cope with privatisation and cover HE costs for households is availing of student loans, especially for assessing costly professional higher education (Punnaya Committee, 1993; Swaminathan Committee, 1994; Ambani-Birla Committee, 2000). For instance, The *K. Punnayya Committee Report* (UGC, 1993) and *D. Swaminathan Committee Report* (AICTE, 1994) recommended revitalising student loan schemes for funding costly HE. On a similar ground, *Ambani-Birla Committee* (GOI, 2000) advised user-pay principles and support for students from economically and socially disadvantaged groups through student loans and grants. Further, the UGC committee for *Promotion of Indian Higher Education Abroad* (PIHEAD) recommended establishing a financing mechanism for international education to provide student loans to Indian students going abroad and international students coming to India for higher studies (AIU, 2001). Similarly, the Tenth (Mid-term appraisal document) and Eleventh five-year plan also stressed on attracting students from disadvantaged sections of society to HE by providing financial support through student loans (NUEPA, 2008). Following these recommendations, student loan schemes started operating vigorously in scheduled commercial banks in India.[5]

Student loans (SLs) are popularised as a potential alternative to funding HE in many developing countries, including India (Mingat and Tan, 1986; Woodhall, 1987; Shantakumar,

[5] Detailed discussion on different student loan schemes in India is done in Chapter 5 (p.120).

1992; Narayana, 2005; Johnstone, 2005; Tilak, 2007; Atuahene, 2008; World Bank, 2011; Ziderman, 2017; Chapman & Dearden, 2018; Panigrahi, 2022). Financing through SLs is considered as an important cost-sharing method (between the student and supplier of education) and cost-shifting in HE as the financial burden is shifted from the parents to the students (Woodhall, 1987; Johnstone, 2005; Tilak, 2007). The primary objective of SLs is to bridge the gap between eligibility to attend education and the ability to pay for it. It covers the direct and indirect costs of education (tuition fees, books, stationery, and living expenses) for the students who are not in a position to afford it (Tilak, 2020, Panigrahi, 2022). In India, several recent policy initiatives (including the announcements in the union budgets) consider SLs as an alternative to finance costly HE, particularly technical and professional education.

The inherent weaknesses of student loan schemes are widely known (Tilak, 1992,2007; Woodhall, 1992, 2004; Hillman, 2003; Lleras, 2005; Shen & Ziderman, 2009; Chapman & Dearden, 2017; Armstrong *et al.*, 2019; Ponyavina *et al.*, 2020; Panigrahi, 2022). Despite several measures, student loans as compared to public funding, adversely affect the demand for HE among the disadvantaged groups of society (Tilak, 2007). Students from lower and middle-class families aspiring to access HE, particularly costly PHE courses, often aim to get financial support through student loans from commercial banks. However, it is not the government but the commercial banks which run student loan programs in India (Panigrahi, 2010; Adhikari, 2016; Rani, 2016; Sangeetha & Raghurama, 2018; Tilak, 2020).[6] With their own business principles, these banks would consider the student's repayment capacity before advancing a loan. As a result, many deserving students from weaker sections may be denied educational loans despite several regulations of the Reserve Bank of India (Tilak, 2020).

In this context, it is important to examine the student loan market in India that would contribute to evidence-based policies in financing HE. However, despite massive expansion of HE in the country, very few studies have explored the changing contours of student loan market. The

[6] A report on student loans published by The Times of India in 2012 conveyed that some commercial banks view student loans as a business despite the government's good intentions to provide financial access to needy students. Retrieved from : https://timesofindia.indiatimes.com/city/kozhikode/Banks-refuse-to-heed-government-plea-on-student-defaulters/articleshow/14044232.cms? (Accessed on 25th April 2018).

available studies on student loans in India have largely focused on overall growth of the student loan market (in terms of number of loan accounts and amount outstanding) and major strengths/weaknesses of the schemes (Tilak, 1992, 2007; Panigrahi, 2010; Debi, 2014; Arora & Kaur, 2016; Jayadev, 2017; Patra *et al.*, 2017; Rani, 2017, 2018, 2019; Manjushree & Giridhar, 2019). Hardly any study (except for Tilak, 2020) examines loan financing of professional courses such as medicine, engineering, and management, in which a relatively more share of graduates takes student loans (NSO, 2020).[7] Limited available studies in India have quantitatively examined the role of individual and household characteristics in access to SLs and barely any study could be found that highlights students' experiences and difficulties while availing SLs. Especially, complexities faced by socially and economically backward students remain understudied, despite several policy changes that emphasise privatisation of PHE in India. Moreover, we do not find any comparative study between the graduates who have 'availed' student loans (*borrowers*) and 'not availed' student loans (*non-borrowers*) to examine their stress regarding studies and labour market outcomes. Are student loan borrowers more stressed about their academic performance and future job prospects? Who among the two groups (borrowers and non-borrowers) is in a better position when accounting for academic and non-academic factors and also their labour market outcomes/expectations? In total, the absence of new and updated research on loan financing of PHE in India is quite visible. In this context, this study attempts to fill these gaps as it aims to analyse the socioeconomic inequalities in access to SLs among professional graduates in Delhi and the procedural difficulties they face while availing SLs. Also, it attempts to compare the participation of borrowers and non-borrowers in various academic and co-curricular activities and their labour market outcomes.

Delhi is chosen as the field of study for this work on the following grounds. First, it represents a mix of public and private institutions offering professional courses, including the institutes of national importance like Indian Institute of Technology (IIT) and National Institute of Technology (NIT). Second, the national capital attracts a significant population of students from

[7] According to the 75th round NSO (2020), around 1.2% of the university or college graduates avail student loans in India in 2017-18. The highest share of students availing student loans was reported in engineering courses (8.1%), followed by medicine courses (7.3%) and management courses, i.e., 5.6%. On the other hand, the share of graduates availing student loans in general higher education courses is negligible. Only 0.1% and 0.5% of the students pursuing humanities and commerce were availing student loans, respectively.

all over India, owing to the expectations of getting quality education and labour market opportunities. According to NIRF (2020), Delhi has several top-ranked engineering (seven in number) and management institutions (seven in number). Also, being one of India's megacities, Delhi is ranked 4th in the country for youth employability and 5th in terms of a preferred place to work by youth (India Skills Report, 2020). Third, there are recent policy changes by the Government of NCT of Delhi regarding HE loan scheme to encourage students to pursue HE. The government approved the "*Higher Education and Skill Development Guarantee Scheme"* in October 2017.[8] Therefore, the heterogeneity in institutions, student socioeconomic settings, and policy initiatives would help us understand the complexity of the student loan market in Delhi.

Following are the specific objectives and research questions of the study:

1. To examine the pattern of household spending on professional higher education in Delhi and how it varies with socioeconomic and institutional settings of the student.
    - How much do households spend on professional higher education in Delhi? How do socioeconomic and institutional settings matter in variations in household spending?
    - What factors determine the household spending on professional higher education in Delhi? How do student loan borrowings affect this spending?

2. To analyse the socioeconomic and institutional inequalities in access to student loans among professional higher education graduates in Delhi. Also, to discuss the major difficulties graduates face while accessing student loans and after receiving the loan amount.
    - How has the student loan market in India expanded during the last one and a half decades? Are there any regional variations in the growth?
    - Who are the students in professional higher education in Delhi availing student loans and how much? How far does it vary by their socioeconomic and institutional settings?

[8] Detailed discussion on this scheme is done in Chapter 5 (p.125).

- What are the major difficulties graduates face while accessing student loans, and how do they vary by socioeconomic & institutional profile of the students?

- How does the availing (not availing) of student loans matter in participation in academic and non-academic activities among students?

3. To understand the labour market outcomes or expectations of students pursuing professional higher education in Delhi and how access to student loans intervein in this.

    - What are the employment probabilities and earnings of students pursuing professional higher education, and how do they vary among borrowers and non-borrowers?

    - How are student loan borrowings expected to affect borrowers' life choices, such as further studies, career choices, car buying, marriage, and financial contribution to family?

1.2 Data & Method

Data[9]

This study uses both primary and secondary data. Three major secondary data sources used in the analysis include unit-level data and published reports from the *National Statistical Office* (NSO), *Ministry of Education* (MoE) and *Reserve Bank of India* (RBI). We use unit-level data from the latest 75th round of NSO (2017-18) to examine the various sources through which university or college students in India finance their education. Further, *Reserve Bank of India* (RBI) data from *Statistical Tables relating to Banks in India* is used to map the growth of student loan market in India during last one and a half decades. To link the growth of student loans with HE expansion in India, we supplement the analysis with information from *All India Survey of Higher Education* (AISHE) reports and *Statistics of Higher & Technical Education,* provided by MoE, Government of India.

[9] Detailed discussion on data sources and tools for data collection is done in Chapter 3 (p.52).

The major analysis of this study is based on the primary data collected through a survey of students pursuing professional courses like Bachelor of Technology (BTech), Master of Business Administration (MBA) and Post Graduate Diploma in Management (PGDM) in Delhi. The survey was conducted from January to August 2021. It covers 18 professional HEIs in Delhi (engineering and management), wherein 1,508 students[10] were surveyed in three different types of institutions (central government, state government and private-unaided) across various disciplines/branches of study. In addition to the student survey, interviews of 30 students were conducted to substantiate the quantitative findings from the student survey. A student questionnaire and an interview schedule were used for data collection (see appendix of the thesis for details).

Method[11]

The data was processed using STATA-14 software. We used descriptive statistics and econometric models for the analysis. Descriptive statistics helped examine the pattern of socioeconomic inequalities in household spending on education, student loan access and labour market outcomes/expectations of PHE graduates. Further, econometric models are used to analyse the determinants of household spending, student loan access, and employment and earnings of PHE graduates. A brief explanation of the econometric methods used in the study is given below:

Ordinary Least Square (OLS) Regression Model: This model is used to examine the potential determinants of household expenditure on PHE in Delhi, as the dependent variable is continuous in nature. Importantly, we analyse the effect of student loan borrowing on household spending on PHE. To examine the heterogeneity in PHE spending, we estimate separate regression equations by institution type (government and private) and course, i.e., engineering and management. To check the robustness of the results, we run a *stepwise OLS regression* and *heteroscedasticity-consistent OLS regression*. Additionally, this model is used to examine the determinants of the student loan amount sanctioned by commercial banks to the applicants.

[10] See Chapter 3 (p.57) for profile of students surveyed.

[11] Detailed discussion on econometric models and variables used in the analysis in done in Chapter 3 (p.68).

Logit Regression Model: This model is used to examine the potential determinants of access/demand for student loans among PHE students in Delhi, as the dependent variable is dichotomous in nature. Separate logit equations are estimated to examine the interaction effect of family income with gender and institution type on demand for SLs. Further, we also estimate *Probit regression equations* to check the robustness of logit estimates.

Heckman Selection Model: This model is used to examine the determinants of decisions which involve two steps. First, we use this model to estimate the determinants of demand *(stage 1)* and household cost *(stage 2)* of pre-admission coaching among PHE students in Delhi. Second, we study the determinants of the employment probabilities *(stage 1)* and earnings *(stage 2)* of PHE graduates. Particularly, the linkage between student loan borrowings and employment probabilities and earnings of PHE graduates is examined.

1.3 Outline of the Thesis

The thesis comprises seven chapters, including the introduction (Chapter 1). The literature review (Chapter 2) provides an understanding of the existing studies on HE financing in Indian and international contexts. It covers studies concerning the trend, pattern, and rationale for public funding of HE; changing pattern of household financing of HE; global and Indian experience of loan financing of HE. In the end, it discusses the research gap and rationale of the study.

The sample structure and methodology of the study are described in Chapter 3. It covers a description of the sample, primary and secondary data sources, tools used for primary data collection, and the econometrics models used for data analysis.

Chapter 4 explores three important dimensions of household financing of PHE in Delhi: (a) pattern and determinants of household spending; (b) determinants of demand and cost of pre-admission coaching; and (c) access to financial assistance. Using descriptive statistics, it explores the heterogeneity in household spending on PHE by socioeconomic factors, institutional settings, and student loan status. Employing the *OLS regression model*, it examines the potential determinants of household spending on PHE in Delhi. Similarly, it uses a two-step *Heckman*

selection model to estimate the determinants of demand *(stage 1)* and household cost *(stage 2)* of pre-admission coaching, an important component of household spending on HE. It also examines the net household spending on PHE by accounting for financial assistance received by students.

Using both primary and secondary data, Chapter 5 discusses five major issues. First, based on the RBI data, it maps the growth and regional spread of student loan market in India during 2004-05 to 2020-21. Second, it portrays an all-India picture of loan financing of HE from the latest NSO data. Third, based on the primary survey data, it addresses the question of who among PHE graduates in Delhi access student loans. Fourth, using a *logit regression model*, it examines the determinants of access/demand for student loans among PHE students in Delhi. Additionally, *OLS regression model* is used to analyse the determinants of the loan amount sanctioned by commercial banks. Fifth, based on the interview data, it unfolds students' opinions/experiences regarding SL financing and the difficulties they faced while accessing SLs. The focus is to compare SL borrowers and non-borrowers in terms of stress regarding academic performance and participation in co-curricular activities.

Chapter 6 attempts to analyse the labour market outcomes or expectations of PHE graduates in Delhi, with a major focus on comparing SL borrowers and non-borrowers. It analyses the determinants of the employment probabilities and earnings of PHE graduates using a *Heckman selection model*. Further, using the qualitative information gathered from interviews, it explores graduates' stress regarding securing a job, with a particular focus on the borrowers. It also unfolds the expected ripple effect of student loan take-up on borrowers' life choices, such as further studies vis-à-vis job, career choices, asset holding, marriage, and financial contribution to the family.

Chapter 7 summarises the major findings, limitations of the study and scope for future research.

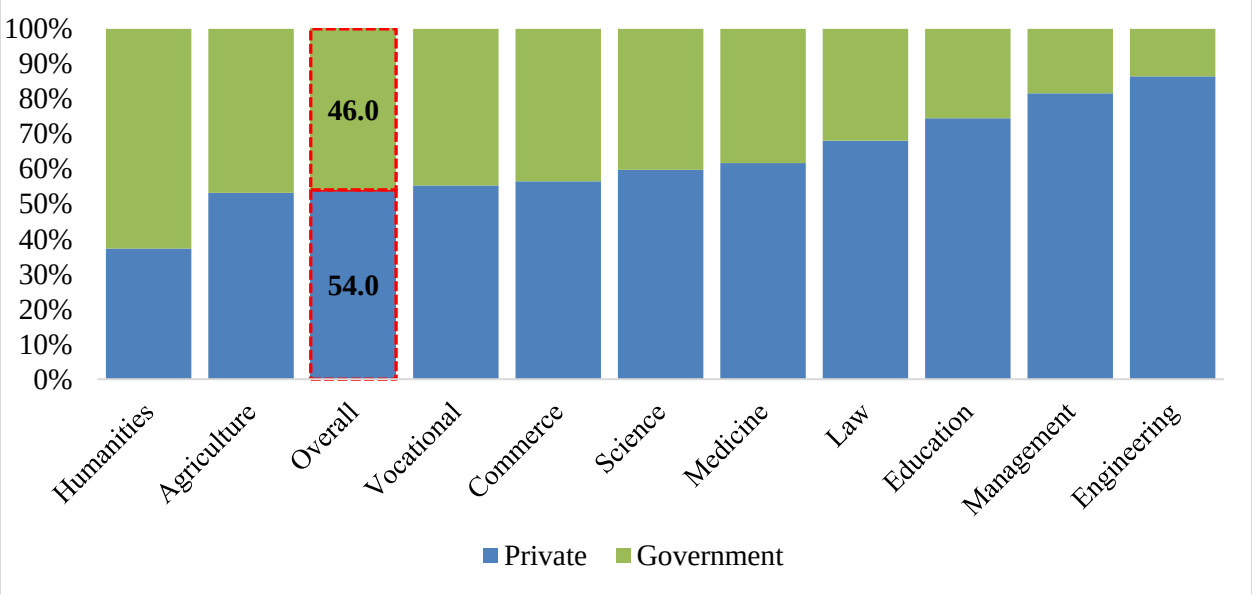
Appendix to Chapter 1

Table A1.1: Discipline-wise Decadal growth of Professional Higher Education in India

	Institutions			*Enrolments (in lakh)*		
	2011-12	2019-20	CAGR	2010-11	2019-20	CAGR
Medicine	549	1297	11.3	4.3	15.5	17.4
Engineering	1788	2855	6	24.5	39	6
Law	333	649	8.7	1.5	4.6	14.7
Management	544	740	3.9	9.2	13.6	5
Total PHE	3214	5541	7	39.6	72.8	7.9
			Course wise % Share			
Medicine	17.1	23.4	---	10.9	21.3	---
Engineering	55.6	51.5	---	61.9	53.6	---
Law	10.4	11.7	---	3.8	6.3	---
Management	16.9	13.4	---	23.2	18.7	---
Total PHE	100	100	---	100	100	---
PHE share to HE	13.5	12.8	---	21.4	21.6	---

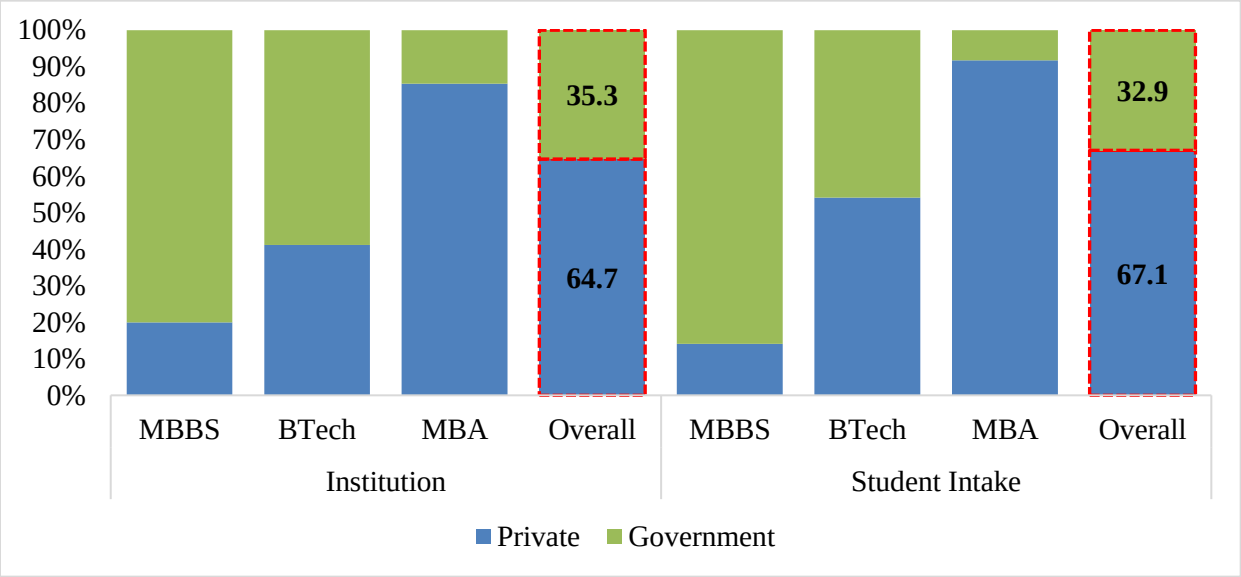
Note: Figures for under-graduation and post-graduation levels of higher education only
Source: Compiled by the research scholar from AISHE reports, 2011-12 & 2019-20.

Figure A1.1: Enrolment Share in Higher Education in India by Institution Type (2017-18)



Source: Compiled by the research scholar from unit-level data from the 75th NSO round.

Figure A1.2: Institution and Student Share in Professional Higher Education by Discipline in Delhi (2019-20)



Source: Compiled by the research scholar from AICTE and MCI data.

CHAPTER 2
FINANCING HIGHER EDUCATION: A REVIEW OF LITERATURE

2.1 Introduction

Traditionally, funding for higher education (HE) around the globe was largely through public sources (Bray & Lillis, 1998; Cheslock & Hughes, 2011). However, given the limited public budget for HE in most countries, emphasis is being shifted toward household financing of HE (Johnstone, 2003, 2004; Vossensteyn, 2004; Hawkins, 2007; Callender, 2015; Jacob *et al.*, 2018, Altbach, 2021). As a result, the financing pattern of HE around the globe has witnessed significant shifts during the last three decades (Tilak & Varghese, 1991; Panigrahi, 2018; Altbach, 2021; Varghese, 2021). There is increasing visibility of sharing the costs of HE with households. For instance, the share of tuition fees to total spending on education was nearly zero in China during the early 1990s, which increased to 33.9% in 2008 (Jacob *et al.*, 2018). During the same period, the share of government spending on education noted a decline (ibid).

In India, the increasing presence of the private sector in provisioning of HE has made a significant shift in policies on financing of HE in the last few decades (Tilak, 2004a; Chattopadhyay, 2019; Rani, 2021; Varghese, 2021; Choudhury & Kumar, 2022). In the early 1960s, public funding and philanthropic contributions were a major part of the resource for HE in India, and the contribution from private sources in terms of tuition fees and other payments from students were negligible (Tilak, 1983). However, with the implementation of the New Economic Policy of 1991, broadly known as Structural Adjustment Programme (SAP), the trend shifted towards private funding of HE (Panchamukhi, 1990; Chakrabarti & Joglekar, 2006; Varghese, 2013; Chattopadhyay, 2007, 2019; Panigrahi, 2019). In post-1990s, major policy think-tanks (including World Bank) recommended the supplementation of public HE revenues by non-

governmental sources, primarily from the users, i.e., students (Johnstone, 1993, 2003; Woodhall, 1992; World Bank, 1994; Johnstone *et al.,* 1998). Declining public funding and advocating non-state funding of professional higher education (PHE) led to passing the burden of funding HE to households in terms of high fees and student loans (SLs). Furthermore, it was widely believed that students accessing technical and professional courses should substantially share the cost by paying fees, as it offers higher private returns. As a result, the fee for PHE courses in India has increased over the past three decades (Rani, 2019; Panigrahi, 2020; Chattopadhyay & Panigrahi, 2022). Cost recovery measures, particularly student fee, which has been used to generate more resources, have made PHE increasingly costlier for the students, raising concerns about affordability of quality education (Patel, 2022). There is a sense of severe handicap amongst households of lower and middle socioeconomic strata in sending their children to costly professional courses such as engineering, medicine, and management (Tilak, 2020; Tilak & Choudhury, 2021; Choudhury & Kumar, 2021, 2022).

In many developing countries, student loans are popularised as a potential alternative to funding HE (Mingat & Tan, 1986; Woodhall, 1987; Shantakumar, 1992; Narayana, 2005; Tilak, 2007; Atuahene, 2008; Ziderman, 2017; Chapman & Dearden, 2018). Financing through SLs is considered as an important method of cost-sharing (between recipient and supplier of education) and cost-shifting (from parents to students) in HE (Ziderman, 2002; Narayana, 2005). They shift the burden of funding HE from the government to the students and/or their parents. Student loans are considered as an investment since borrowers acquire knowledge as well as social and personal qualities that might enhance their future earnings (Li, 2013). Beneficiaries of SLs may defer payment for HE until they are gainfully employed after graduation (Ziderman, 2013). Therefore, with a central objective of cost recovery, these loans attempt to ensure the equality of opportunities, equity, and social justice to some extent (Ziderman, 2009).

This chapter provides an overview of the existing literature on HE financing, both in Indian and international contexts, with a focus on SLs. The chapter includes four major points: (a) trends, pattern, and rationale of public funding of HE; (b) changing pattern of family expenditure on HE; (c) global trends in loan financing of HE; and (d) Indian experience of loan financing of HE. The last section discusses major gaps in literature and the rationale of this study.

2.2 Public Funding of Higher Education

The arguments in favour of public expenditure on HE are very strong, particularly in developing countries (Arrow, 1993). Scholars around the globe have established a direct and causal relationship between public expenditure on education and economic growth and argue for more public investment in education, particularly in HE (Chandra, 2010; Idrees & Siddiqui, 2013; Mallick & Dash, 2015; Hua, 2016). For instance, Hua (2016) attempted to examine the relationship between public expenditure on education and Gross Domestic Product (GDP). The study found a positive relationship between the two and concluded that public spending on education plays an important role in economic growth (ibid: p.22). Countries where HE is mainly publicly funded are observed to have progressed towards developing a strong HE system and contributing to growth and development of the economy (Tilak, 2015).

In the literature on public financing of HE, government subsidies are advocated on several grounds. For instance, it is argued that HE is a public good that produces social, economic, political, cultural, and technological externalities (Geske & Cohn, 1998; Oosterbeek, 1998). Public spending on education is considered an important method for promoting social equity (Blaug & Woodhall, 1978; Barr, 1998). Chattopadhyay (2007) points out that public support for HE is possibly the most dignified way to achieve socioeconomic equity as HE promotes social mobility by acquiring skills and training accessible to the economically challenged section of society. Mitra (2015) also argues that public funding in HE should be encouraged rather than replaced by private funding sources to ensure increased participation from the weaker sections.

The phenomenon of increasing demand for HE on the one hand and declining budgetary expenditure on the other has been observed in numerous developing countries (Sanyal & Martin, 2006; Varghese & Panigrahi, 2019). For instance, the introduction or reintroduction of tuition fees in public HE has been growing in many countries, including Australia, Brazil, China, New Zealand, and the United Kingdom (Vossensteyn & Dobson, 1999; ICHEFAP, 2003). In fact, tuition fees have been climbing much faster than the inflation rate in various countries like Australia, Canada, Mexico, the Netherlands, and the United States (ICHEFAP, 2003). In a recent paper, Tilak and Choudhury (2022) discussed the trend in public funding of HE in the Asia-Pacific

region. The study found a withdrawal of public resources from HE and a shift of costs to households in the region (ibid: p.29).

Higher education in India was primarily funded by the public sector before the liberalisation policy (introduced in the early1990s), and the role of the private sector was minimal. One important recommendation regarding public spending on education was made by Kothari Commission in 1966, also known as the Education Commission. It suggested the government to allocate up to 6% of GDP to education, reiterated in the National Education Policy (NEP) of 1986. Further, the CABE committee (2005) recommended that at least 1.5% of GDP needs to be allocated to HE, including one per cent for university and higher education and 0.5% for technical education. As per the latest data, government spending on education constitutes only 3.87% of GDP in 2017-18 (ABEE, 2022) and only around 10% of total government spending (Economic Survey, 2017-18). In this regard, the NEP (2020) states that public expenditure on education in India has not come close to the recommended level of 6% of GDP. The policy envisioned a substantial increase in public spending on education by the Central and State Governments to reach 6% of GDP at the earliest (ibid: p.61). The policy emphasised this to ensure a high-quality and equitable public education system in India (ibid: p.61). Hence, policies time and again have laid stress on allocating the recommended share of GDP to education.

Several studies have looked at variations in public expenditure on education in India during the pre-and post-liberalisation period (Panchamukhi, 1975; Chakrabarti & Joglekar, 2006; Prakash, 2007; Dhilon & Sehgal, 2008; Anuradha *et al.*, 2008; Anbalagan, 2011; Tilak, 1993, 2004, 2008, 2015). These studies conclude that the trend in budgetary support for HE has undergone a visible change after the 1990s. As part of the new economic policy, due emphasis has been given to ushering private sector participation to improve HE access and quality (Prakash, 2007; Tilak, 2018a). Increased private participation, the emergence of self-financing higher education institutions (HEIs), and the availability of education loans have resulted in severe cuts in the public expenditure on HE, as discussed by some studies (Tilak, 1993, 2008; Prakash, 2007; Dhilon & Sehgal, 2008). It was observed that, in the 1990s, HE received the lowest amount of budgetary support, which was inadequate to finance HE considering the increase in fees and rapid

growth of the sector (Tilak, 1993). The study concluded that Indian HE is not yet prepared for privatisation, and there is a need to explore various alternatives to finance HE (ibid).

Prakash (2007) found that per-student public expenditure on HE has declined at constant prices and the proportion of HE spending has fallen from 0.46% in 1990-91 to 0.34% in 2004-05. Public spending on HE as a percentage of GDP has declined or remained stagnant, and the burden to finance education appears to be largely shifted from the government to the households or students. The primary reason behind this is the cuts in public expenditure and neoliberal policies on HE in India introduced in the 1990s (Tilak, 2018a). There is a decline in the per-student public expenditure on HE in real terms and also in the budgets for scholarships in this sector (ibid). In a more recent study, Tilak (2015) examined the trends in public expenditure on HE in India during the decade starting from 2000-01. The author refers to this period as India's second decade of structural reforms. The study found some major turns in the trends in allocating resources towards HE, including technical education. For instance, only 0.45% and 0.17% of GDP were allocated towards 'university and HE' and technical education, respectively, in 2012-13. The author described the period as a decade of ups and downs in public expenditure on HE in India and suggested that the government should commit to allocating a steadily increasing public fund towards HE to meet the increasing needs of the system.

Thus, public spending on education falls immensely short of the desired target of six per cent of GDP, recommended by the Education Commission in 1966 and as discussed by a few studies (Agarwal, 2007; Tilak, 2018b) and the latest NEP (2020). Therefore, exploring the additional and alternative sources of financing HE (mainly household expenditure) has become imperative for policymakers and HEIs to supplement the declining budgetary support. In this context, the following section discusses the studies examining the pattern and determinants of family spending on HE around the globe, with a specific focus on India.

2.3 Family Expenditure on Higher Education

There has been an exponential growth in the number of private HEIs worldwide in the past four decades (Marginson, 2016; Ahmed, 2016; Buckner, 2017; Levy, 2018; Buckner & Khoramshahi, 2021). In the Indian higher education sector, around 78.6% of colleges are privately

managed (65.2% private-unaided and 13.4% private-aided), catering to 66.3% of the total student enrolments in higher education in 2019-20 (MoE, 2020). Private sector participation in PHE is significantly higher than the courses offered in humanities and social science disciplines. The share of private institutions was more than 90% of the country's total undergraduate-level engineering institutions, with an enrolment share of 87% in 2018-19 (AICTE, 2021). The increased private sector participation in HE has made a significant shift in policies on financing this sector in the last few decades, wherein household financing is considered a potential alternative to funding HE (Tilak, 2004a; Chattopadhyay, 2019; Rani, 2021; Varghese, 2021). Therefore, accounting for only public expenditure on HE misses out on a major component, that is 'household financing,' which constitutes a significant part of the overall financing of HE in India, especially in costly professional courses.

Many studies suggest that households in India spend a sizeable amount on their children's HE, which has been escalating over the past three decades (Chakrabarti & Joglekar, 2006, Kambhampati, 2008, Duraisamy & Duraisamy, 2016; Kumar, 2017; Choudhury, 2019; Chandrasekhar *et al.,* 2019; Tilak & Choudhury, 2019; Kumar & Naincy, 2020; Rani, 2021; Tilak, 2002, 2007, 2021; Choudhury & Kumar, 2021, 2022). Scholars, however, have witnessed that household spending on higher education varies widely depending upon a complex set of socioeconomic and institutional factors. Some of the major factors often cited in literature include individual characteristics such as gender (Panchamukhi, 1990; Kingdon, 2005; Datta & Kingdon, 2019; Kumar & Naincy, 2020; Beg & Bhatt, 2021), caste and religion (Unni, 2001; Tilak, 2002; Gangopadhyay & Sarkar, 2014; Kumar, 2017; Sarkar, 2017; Choudhury & Kumar, 2022), household attributes such as location (Pradhan *et al.,* 2000, 2011; Duraisamy & Duraisamy, 2016; Tripathi, 2019; Chandrasekhar *et al.,* 2019;), family income (Jenkins *et al.,* 2019; Dhanaraj *et al.,* 2019; Tilak & Choudhury, 2019; Demiroglari & Gürler, 2020; Pallegedara & Kumara, 2020), household size (Psacharopoulos & Mattson, 2000; Tansel & Bircan, 2006; Dang & Rogers, 2016; Xiong *et al.,* 2020), and parental education (Saha, 2013; Schroeder *et al.,* 2015; Minello & Blossfeld, 2017; Kuvat & Kizilgöl, 2020; Yan *et al.,* 2021), and institutional factors such as type of institution (Salim, 1994, Choudhury & Kumar, 2021), type of course (Chandrasekhar & Ghosh, 2020), scholarship (Kumar, 2017), distance, hostel and medium of study (Salim, 1994; Sarkar;

2017; Choudhury, 2019; Choudhury & Kumar, 2021). Earlier studies unfolding some of these significant factors are reviewed in this section.

Education for women is an important pathway to improving household health, nutrition, and economic status (King & Hill, 1997; Foster & Rosenzweing, 2001; Schultz, 2002). According to World Bank (1994), the rate of return on investment in female education is higher than male education in developing countries. Given the importance of women's education, gender inequalities in education have been a topic of much research, particularly in developing countries (Iddrisu *et al.*, 2020; Khajikhan, 2021). One important topic of research is gender bias in household educational spending. Existence of pro-male bias in household spending on education has been documented around the globe, including in India (Panchamukhi, 1990; Tilak, 2002; Kingdon, 2005; Kambhampati, 2008; Azam & Kingdon, 2013; Saha, 2013; Kenayathulla, 2016; Iddrisu *et al.*, 2018; Kaul, 2018; Datta & Kingdon, 2019; Kumar & Naincy, 2020; Rani, 2021; Beg & Bhatt, 2021). Discrimination against girls in household expenditure on child schooling is broadly highlighted in these studies. However, studies examining gender bias in intra-household spending in higher and professional education are pretty limited (except for some studies like Kumar, 2017; Choudhury, 2019; Tilak, 2021; Choudhury & Kumar, 2021, 2022).

The share of women's enrolment in technical education is noted to be quite low around the globe, especially in engineering education (Singh & Peers, 2019). In India, women's share in four major disciplines of professional higher education (engineering, medicine, law, management) is relatively low, i.e., 37% in 2019-20, and it is as low as 29.2% in engineering courses (MoE, 2020). Households prefer to invest comparably more towards education for their sons and extent of such differences widens further in case of rural setups and technical HE (Chaudhuri & Roy, 2006; Lancaster *et al.*, 2008; Himaz, 2009; Iddrisu *et al.*, 2018; Kaul, 2018; Datta & Kingdon, 2019; Choudhury & Kumar, 2021). In a recent study, Choudhury & Kumar (2021) found that the average annual household expenditure on male students accessing engineering education in Odisha (India) is around 11% more than that of females, and this gap in spending widens further among poor households. Similarly, Tilak (2021) found that male students spend around 11% more than their female counterparts in engineering education in India (p.123). This is apparent given the conservative socio-cultural setting of India, where spending on girls' education may work as a

'negative dowry' (Tilak, 1992), as more educated girls seek out more educated boys for their marriage, who in turn expect higher dowry amounts. Many households may continue to feel that return on investment on daughters' education would go to their in-laws' after marriage. Though this country-wide phenomenon is evolving fast, it is still perceived to be dominant among traditional families, particularly in rural setups (Raju, 2008). Thus, gender disparity in household expenditure on education is a major issue in India. In professional education, this gender bias is expected to widen as investments in these courses take a major part of households' income, but only a handful of studies establish this (Choudhury, 2019; Tilak, 2021; Choudhury & Kumar, 2021, 2022). Therefore, it is imperative to empirically examine the gender bias in household spending on PHE in Delhi and its association with other socioeconomic and institutional factors.

Several studies have established the disparities in household spending on education by various social groups, such as caste (Tilak, 2002; Sarkar, 2017; Choudhury, 2019; Tilak, 2021; Choudhury & Kumar, 2021, 2022) and religion (Choudhury, 2011; Gangopadhyay & Sarkar, 2014; Kumar, 2017; Choudhury, 2019). The study by Rani (2021) reveals that non-scheduled caste families have the advantage of spending more on higher education of their children than scheduled caste (SC) and scheduled tribe (ST) families. Some studies have examined this issue in the context of costly professional courses. For instance, Choudhury (2011) analysed various determinants of household spending on engineering education in Delhi (India) and found that spending of ST (₹55.8 thousand) and SC students (₹64 thousand) was relatively less than the spending of OBC (₹81 thousand) and Upper Caste (UC) students, i.e., ₹71 thousand (ibid, p.16). Likewise, Muslim students spent the least on education compared to students from other religions, such as Christians, Sikhs, Buddhists, and Jains (ibid, p.17). Similarly, Choudhury and Kumar (2021) reported that UC students spend the highest amount on PHE in India (₹81.6 thousand), followed by OBCs (₹66.7 thousand), and as expected, SCs/STs spent the lowest, i.e., ₹55.2 thousand (ibid, p.312). A similar finding was noted by Tilak (2021) while examining the determinants of household spending on engineering education in India. The study finds that ST and SC engineering students spend around 44% and 24% less than UC students, respectively (ibid, p.125). The caste gap in household spending on education is largely due to variations in fees, as students from marginalised sections (including SCs and STs) are provided with fee waivers in professional HEIs – particularly in public HEIs. While many Indian scholars have focused on inequalities in access to HE by social groups

– caste and religion (Chanana, 1993; Kaul, 1993; Hasan & Mehta, 2006; Rao, 2007; Dubey, 2008; Srivastava & Sinha, 2008; Thorat, 2008; Sundaram, 2009; Basant & Sen, 2010, 2014; Biswas *et al.*, 2010; Khan, 2018), only a handful of studies have looked at the gap in their educational spending (Gangopadhyay & Sarkar, 2014; Tilak & Choudhury, 2019; Choudhury & Kumar, 2021, 2022). Further, it would be interesting to look at the spending gaps of these underrepresented groups in costly professional courses. Therefore, we have included both caste and religion in our analysis.

Location of households has a direct bearing on households' education spending. Many scholars discuss regional inequality (rural-urban gap) in household spending on education, both in India and elsewhere (Panchamukhi, 1990; Glewwe & Patrinos, 1999; Tilak, 2000; Kingdon, 2005; Tansel & Bircan, 2006; Pradhan *et al.*, 2011; Andreou, 2012; Agrawal, 2014; Duraisamy & Duraisamy, 2016; Tripathi, 2019; Chandrasekhar *et al.*, 2019; Choudhury, 2019; Choudhury & Kumar, 2021; Tilak, 2021). Studies conducted in the context of Vietnam (Glewwe & Patrinos, 1999) and Cyrup (Andreou, 2012) report that urban households are more likely to spend on their child's education than rural households. Similarly, Tansel & Bircan (2006) found that urban households spent more on private tutoring of their children than rural households in Turkey. In the context of India, Pradhan *et al.* (2000) concluded that the per-capita annual expenditure on education in India was ₹101 and ₹455 in rural and urban areas respectively, reporting a noticeable difference of around 4.5 times. Similarly, Duraisamy and Duraisamy (2016) showed that the average spending on HE for an urban student was 1.6 times that of a rural student in India. In a more recent study, Chandrasekhar *et al.* (2019) found that while rural Indian households spend around 15% of their total consumption expenditure on their children's HE, the figure was 18.4% in urban areas. However, studies addressing the spatial variations in household spending on HE, especially in PHE, are quite limited in India, and this study attempts to fill this gap to some extent.

It is argued that income inequalities may result in disparities in educational opportunities since those able to pay more can access better quality education (Tilak & Choudhury, 2019). Many scholars around the globe have established a positive relationship between household income and education spending, both in rural and urban areas (Psacharopoulos *et al.*, 1997; Acevedo & Salinas, 2000; Tilak, 2002; Urwick, 2002; Tansel & Bircan, 2006; Hashim, 2008; Omori, 2010; Qian &

Smyth, 2011; Shafiq, 2011; Rizk & Owusu-Afriyie, 2014; Acar *et al.,* 2016; Acerenza & Gandelman, 2019; Dhanaraj *et al.*, 2019; Pallegedara & Kumara, 2020; Demiroglari & Gürler 2020; Choudhury & Kumar, 2021; Tilak, 2021). The economic burden of spending is relatively higher on poor households, as they tend to spend a higher share of their income on education than their high-income households (Psacharopoulos & Papakonstantinou, 2005; Duraisamy & Duraisamy, 2016; Lakshmansamy, 2021). While calculating income elasticity of education spending, Bayar (2016) reported that low-income families in African societies have a higher income elasticity of education spending than rich families. Similarly, in the context of Nigeria, Jenkins *et al.* (2019) found that income elasticity of education spending of households in bottom 2/3rd income distribution was four times higher than those from the top 1/3rd of income distribution. In India, Sarkar (2017) found that household economic status strongly determines household spending on HE as a unit increase in household income increases the household spending on HE by 0.55% (ibid: p.12). While there are many studies examining household education spending by income levels in India (e.g., Tilak, 2002; Kumar, 2017; Sarkar, 2017; Dhanaraj *et al.,* 2019; Tilak & Choudhury, 2019; Choudhury, 2019), but very little is known about this issue in the context of professional education. Though some studies like Choudhury & Kumar (2021, 2022) and Tilak (2021) have explored the issue of engineering education, studies relating to other costly disciplines such as Medicine, Management and Law are sparse. Thus, this study examines the impact of households' paying capacity on their spending on PHE in Delhi.

Various studies around the globe have established a negative relationship between family size and family spending on education (McMahon, 1974; Psacharopoulos & Mattson, 2000, Tilak, 2000, 2002, Tansel & Bircan, 2006; Dang & Rogers, 2016; Kumar, 2017; Xiong *et al.*, 2020; Choudhury & Kumar, 2021) as a bigger family size will result in leaving fewer resources for education (Qian & Smyth, 2010; Huy, 2012; Bayar & Ilhan, 2016). Large families generally spend a higher share of their income on essentials such as food, housing, clothes, and other related items, leaving less money for education (Downey, 1995). Therefore, with limited financial resources, as children are added to a family, the per-child resource declines to lower educational attainment for later-order children (Blake, 1989; Kellaghan, 1994; Dang & Rogers, 2016; Kugler & Kumar, 2017; Xiong *et al.*, 2020). An interesting study in this context (Lin, 2019) finds that single-child households in China tend to spend more than families with more than one child. Contrary to the

findings of above studies, Shafiq (2011) concluded that the presence of other children in the family does not affect the household decision on the expenditure on education if there are more people with productive employment. Therefore, it is not just the number of children in the family that matters in distribution of family resources, but also other important factors such as gender, age, order and education status. For instance, parents may be willing to spend more on education of those children who perform better in studies than others (Asadi, 2020) or based on the child order (Xiong *et al.,* 2020). Clearly, there has been less investigation on this aspect in India.

A good number of studies have established that parental education (or education of the household's head) is positively associated with their spending on a child's education as educated parents are more aware of benefits of education (Tilak, 2000, 2002; Dang, 2007; Omori, 2010; Qian & Smyth, 2011; Masterson, 2012; Saha, 2013; Schroeder *et al.,* 2015; Elbadawy, 2015; Minello & Blossfeld, 2017; Acrenza & Gandelman, 2017; Kuvat & Ayvaz Kizilgöl, 2020; Yan *et al.,* 2021; Choudhury & Kumar, 2021; Tilak, 2021; Rani, 2021). For instance, Psacharopoulos and Mattson (2000) concluded that one year increase in households' head education results in an increase in education spending at the primary level by 8% in Bolivia. A similar finding was put forth by Schroeder *et al.* (2015) in the context of Germany. Some studies concluded that mothers' education has a larger effect on a household's spending on a child's education than fathers' education (Kodde & Ritzen, 1988; Tansel & Bircan, 2006; Kambhampati, 2008; Shafiq, 2011; Demiroglari & Gurler, 2020). Particularly, Demiroglari & Gurler (2020) finds that the effect of mothers' education on household investment in school education is more than fathers' education in Sri Lanka. Similar results were found by scholars while exploring the impact of parental education on their spending on HE in the Netherlands (Kodde & Ritzen, 1988)) and Turkey (Shafiq, 2011; Tansel & Bircan, 2006). In the context of India, Tilak (2002) established a positive relationship between education of households' head and their education spending on a child. A recent study by Choudhury & Kumar (2021) found that Indian families where mother has completed secondary education spend 21.3% more on engineering education of their offspring, than families where mothers' education is below secondary education. Similarly, Rani (2021) found that educated household heads allocate more share of their family income towards education of their offspring. In 2014, illiterate heads allocated only 13.4% of their income to their child's education, which was around 40% among heads who are at least a graduate (ibid: p.17). Hence, a

positive relationship is established between parental education and household spending on child's education around the globe. An important gap noted in the literature is that only a few studies examined the impact of parental education on educational spending in case their offspring is attending a PHE course (Choudhury, 2012; Tilak, 2021; Choudhury & Kumar, 2021, 2022), which is relatively costlier and requires more household investment. The present study attempts to address this gap.

Besides individual characteristics and family background, institutional factors such as type of institution, discipline of study, distance between home and institution, medium of instruction, availability of financial support such as student loans and scholarships, and some other related factors also determine the level of family expenditure on education (Panchamukhi, 1990; Tooley, 2002; Kingdon, 2005; Agrawal, 2014; Bayar & Ilhan, 2016; Kumar, 2017; Sarkar, 2017; Choudhury, 2019; Tilak & Choudhury, 2019). A study by Salim (1994) demonstrates that students enrolled in private HEIs spend significantly more on education than those studying in government HEIs in Kerala, which is apparent as private HEIs charge relatively higher tuition fees. Further, receiving a scholarship may have either a positive or a negative impact on education spending. The average spending on education will increase if the scholarship amount supplements it, and it will decrease if the amount of scholarship substitutes it. In this context, Kumar (2017) found a negative relationship between the two, whereby scholarship amount was noted to substitute the household's HE spending in India. Students receiving any scholarship spent around 10% less per annum than those not availing any scholarship (ibid). While examining the household cost of engineering education in Odisha (India), Choudhury (2019) notes that household spending on engineering education constitutes around 30% of the annual family income. A more recent study by Chandrasekhar and Ghosh (2020) concluded that household costs for professional HE in India have increased by more than 50% during 2007-08 and 2017-18. Review reveals that studies unfolding the impact of institutional factors on household education spending are quite limited in the context of professional HE in India, except for a few recent studies (Tilak, 2021; Tilak & Choudhury, 2021; Choudhury & Kumar, 2021, 2022). This study examines the determinants of household spending on PHE in Delhi. We include several institutional (institution type, course, participation in co-curricular activities, private tuition, and place of stay) and financial factors (part-time job, student loan take-up, and scholarship) in the analysis.

Overall, we find a good number of studies on patterns and determinants of family expenditure on education in India. However, a large bulk of literature is confined to HE, and only a few studies have come up on technical or professional courses. Since professional courses are relatively more expensive than general HE courses, they may require special attention in the policy space. Further, the increasing presence of private sector in the provisioning of PHE in India calls for a detailed analysis of the financial burden felt by the households, especially in a metropolitan city like Delhi, where the cost of other items such as food, accommodation and transportation are relatively higher. Therefore, we provide additional evidence on the variability in PHE spending in Delhi by different socioeconomic and institutional factors and also by components of spending (fee and non-fee items) that are missing in the existing literature.[1] Therefore, this work would significantly contribute to the literature on family expenditure on higher education.

2.4 Global Trends in Loan Financing of Higher Education

Currently operating in more than 80 countries, student loan has emerged as one of the important alternative sources of financing HE globally (World Bank, 1994; Johnstone *et al.*, 1998; Luong, 2010; World Bank, 2011; HELB, 2015, Rani, 2016; Das & Ray, 2019). It is advocated as a tool that reduces the financial burden of funding HE on the state and improves access to HE (Woodhall, 1987; Johnstone, 2005; Ziderman, 2009). Financing through student loans not only helps students pay their fees but also relieves their parents and general taxpayers from the financial burden (Ziderman, 2002; Narayana, 2005). Many studies have argued in favour of and against SLs by comparing them with other methods of financing HE, such as grants, deregulation of fees, graduate tax, education vouchers, and tax financing (Mingat & Tan, 1986; Woodhall, 1987, 1989, 1992; Tilak & Varghese, 1991; Shantakumar, 1992; Mathew, 1996; Tilak, 1992, 2007; Narayana, 2005; Chattopadhyay, 2007, 2015). An attempt is made in this section to review these studies and to synthesise the major findings that provide us with an overview of important areas that are neglected in the student loan literature.

With a particular reference to developing countries, Tilak (1992 & 1999) has discussed arguments in favour of student loans as a funding source of HE. The author argued that the

[1] See Chapter 4 for detailed analysis of household spending on professional higher education in Delhi (p.83)

significance of SLs lies in the facts that (a) they enable the state to withdraw resources from HE and reallocate them to primary education, having higher social returns; (b) they ensure that no eligible poor student belonging to low-income family will be prevented from pursuing HE; (c) they would prevent wasteful expenditures as only needy students borrow them; and (d) as the students become more cost-conscious, it positively influences the internal efficiency of the education system.

Examining the transformation of the SL system at the global level, Chapman and Dearden (2018) found that various developing and developed countries experienced a change in their student loan system. In Australia, the student loan system was introduced in which debt obligations were based on future income instead of time. Known as Higher Education Contribution Scheme (HECS), Australian debtors repay their loans only if their personal incomes exceed an annual threshold limit (currently US$ 44,200); this is known as Income Contingent Loan (ICL). After its introduction, this system was adopted by New Zealand (1991), England (1998), Ethiopia (2001), Hungary (2001), Thailand (for 2006 only) and the Netherlands (2017), and partially in the United States (1994), South Korea (2011) and Japan (2017) (ibid). Currently, countries undergoing reform toward a universal ICL system include Colombia, Brazil and Japan and there are active public debates underway in Malaysia, Ireland, and the US (ibid). It is argued that the shortfalls of the conventional loan method of financing HE are overcome by the ICL method (Johnstone, 2004; Chapman, 2006).

Theoretically, three major determining factors for student loan take-up are financial need, willingness to borrow (Gayardon *et al.,* 2019) and student loan literacy (Clendaniel, 2016; Furquim *et al.,* 2017). According to Lee & Mueller (2014), student loan literacy is *"the ability to identify, understand, interpret, and navigate student loan options, principles, and practices associated with responsible borrowing and debt management"* (p.714). Students may end up borrowing too much and have greater debt due to a lack of loan literacy (NASFAA, 2015). Further, a major determinant of whether students can attend college without taking a student loan is their family's financial situation (Cunningham & Santiago, 2008; Oosterbeek & van den Broek, 2009; West *et al.,* 2015). Due to their family's financial, cultural, and social advantages, those from affluent backgrounds have an advantage in college and the workforce (Forsyth & Furlong, 2003; Haveman & Smeeding,

2006; Crawford *et al.,* 2016). They can afford to pay for all or a portion of their tuition and living costs without taking student loans.

While a good number of studies found a direct and significant association between low family resources (in terms of low parental income and social class) and higher demand for student loans (Johnes, 1994; Gayle, 1996; Payne & Callender, 1997; Callender & Wilkinson, 2003; Purcell *et al.,* 2008; Ferreira & Farkas, 2009; Johnson *et al.,* 2009; Oosterbeek & van den Broek, 2009; Maher *et al.,* 2018; Furuta, 2022), others find no such association between the two (Callender & Kemp, 2000; Finch *et al.,* 2006; Johnson *et al.,* 2009; Pollard *et al.,* 2013). For instance, Gayardon *et al.* (2019) examined the association of loan take-up with students' socioeconomic settings and found that their gender, family economic status, social class, parental education, and debt aversion plays a significant role in determining student loan take-up in England (p.979). Similarly, a recent study by Furuta (2022) examined how parental resources (household income, parental education, and savings) influence student loan take-up in Japan. The study found that students from low-income families but with educated parents are more likely to be the beneficiaries of SLs. For students belonging to low-income households, the compensation between economic resources and parental education occurs in the form of increased student loan take-up (ibid: p.19).

Students' willingness to borrow is influenced by a set of factors such as students' characteristics, culture, values, and attitude toward debt (Haultain *et al.,* 2010; Harrison *et al.,* 2015). Firstly, attitude towards debt significantly determines students' willingness to borrow. Debt-averse students may avoid debt by not enrolling for HE, enrol in a less expensive institution or enrol for fewer credit hours so they can work more (Burdman, 2005; Callender & Jackson, 2005; Eckel *et al.,* 2007; Cunningham & Santiago, 2008; Avery & Turner, 2012; Goldrick-Rab & Kelchen, 2015; Harrison & Agnew, 2016; Callender & Mason, 2017; Long, 2021). Further, gender significantly influences financial risk as females are argued to be more risk-averse than males (Eckel & Grossman, 2002; Galizzi *et al.,* 2016). For instance, studies have found that females are less likely to opt for student loans than males in the UK (Johnes, 1994; Payne & Callender, 1997), the Netherlands (Oosterbeek & van den Broek, 2009) and the US (Mountain *et al.,* 2020). It is also argued that households feel that SLs taken for a girl child would be an extra burden for them in terms of dowry they can afford at the time of her marriage (Robbins Committee, 1963: p.211),

particularly in India, where dowry is an important social phenomenon. Similarly, ethnicity also is linked with loan take-up as Asian students are less likely to take SLs as compared to other ethnic minority groups (Payne & Callender, 1997; Callender & Kemp, 2000; Callender & Wilkinson, 2003; Finch *et al.*, 2006; Maher *et al.*, 2018).

Quite a few studies around the globe have also examined the inequalities in student loans granted to graduates based on their socioeconomic settings (Msigwa, 2016; Gayardon *et al.*, 2019). For instance, Msigwa (2016) mentioned that loan applicants from low-income families in Tanzania face numerous barriers to accessing SLs and highlighted that this creates a disparity in the purpose of loan schemes (ibid: p. 553). These studies concluded that the non-accessibility of SLs might become a barrier to access to HE for marginalised students. To ensure equitable distribution of SLs, the Malaysian government allocate SLs based on the socioeconomic backgrounds of students, wherein students from low-income families (below RM 3,000, equivalent to $900 per month) are provided full loans, and in contrast, others are granted partial loans based on their family income (Mukherjee, 2010).

Elitist higher education systems around the globe have led to the exclusion of many young people from university participation due to socioeconomic disadvantages (Macrae & Maguire, 2002; Hayton & Paczuska, 2002). Student loan scheme is one mechanism[2] of allocating funds to students from low socioeconomic backgrounds and widening their participation in HE to some extent (Msigwa, 2016). Researchers have examined the positive and negative impacts of the availability of student loans on access to HE worldwide (John & Noell, 1989; Braunstein *et al.*, 1999; Linsenmeier, Rosen, & Rouse, 2006; Baker *et al.*, 2017; Chen & Bahr, 2020). For instance, John and Noell (1989) reported that SLs positively affect HE enrolment in the United States, though this effect was weaker than grants. Similarly, Dynarski (2003) concluded that increased loan availability to a wider range of students is associated with increased college attendance in public HEIs in the US. The study found that $1,000 in loan subsidies induces an increase in college attendance of 5.1 percentage points (ibid: p.21). Similar findings were reported by some studies examining the participation of poor students in response to the HECS in Australia (Long, Carpenter

[2] Other mechanisms of allocating funds to support marginalised students include financial assistance in the form of scholarships, partial or full fee waiver, and subsidy.

& Hayden, 1999; Marks *et al.*, 2000; Chapman & Ryan, 2005). Likewise, student loans had a positive impact on student enrolment in HE in Kenya (Wachiye & Nasongo, 2010), Tanzania (Nyahende, 2013) and Chile (Solis, 2017). Interestingly, Solis (2017) found that access to college loan programs in Chile leads to a 100% increase in immediate college enrolment and a 50% increase in the probability of ever enrolling, besides eliminating the income gap in HE enrolment. In Japan, Sano (2019) used panel data and found that expanding student loan eligibility improved male enrolment in colleges by up to 0.7%, with a larger impact among low-income families (ibid: p.29). In the Netherlands, a more recent study by Gendre and Kabátek (2021) examined the effects of national student finance reform, replacing universal subsidies for HE with low-interest rate SLs. Due to this reform, the study found an increase in the share of students specialising in STEM subjects.

Some studies also found a negative effect of student loan availability on access to HE (John & Noell, 1989; Millett, 2003; Msigwa, 2016). For instance, Zhu *et al.* (2021) found that replacing student loans with institutional grants at public HEIs increased the enrolment share of students from families in two bottom income quintiles in the US. The study concluded that no-loan policies might increase affordability at public colleges and universities. Further, Msigwa (2016) argues that widening participation in HE in Tanzania depends on the equitable distribution of SLs. The study found that loan applicants from low-income families face numerous barriers to accessing SLs and highlighted that this creates a disparity in the purpose of loan scheme (ibid: p. 553). Likewise, Millett (2003) concluded that high indebtedness deters students from attending graduate school. Further, the effects of SLs vary on different ethnic minorities. John & Noell (1989) found that, compared to other racial or ethnic groups, SLs did not boost college enrolment of Latino students in the US and had a minimal positive effect on enrolment among Black students. On similar lines, Kim (2004) mentions that a combination of loans and grants influenced the college enrolment choices of White and Asian students but not Black and Latino students. Debt aversion is one of the key explanations for this. In this context, Harrison and Agnew (2016) cited that fear of debt or debt aversion is a significant determinant of demand for HE, especially among low-income families. The study found that postponing HE and temporary or permanent withdrawal from HE are results of debt-avoidance attitudes of students (ibid: p.349). Similarly, Callender and Mason (2017) noted that a debt-averse attitude remains much stronger among students from lower-class

families than among upper-class students in England. A more recent study by Long (2021) found that debt-averse students in the US borrow relatively less than other students if they pursue college and attend affordable colleges. The study concluded that debt aversion is associated with lower college enrolments among men and whites.

Existing literature indicates that students' finance, including grants and loans, are related to students' educational outcomes. It is argued that students who borrow for education become relatively more cost-conscious than their non-borrower counterparts, positively influencing the education system's internal efficiency (Tilak, 1992 & 1999). In this context, studies worldwide have examined the effect of student loans on the educational outcomes of borrowers and found a mixed response, i.e., a positive association (Schmeiser *et al.,* 2015; Marx & Turner, 2019; Solís, 2019; Black *et al.,* 2020), negative association (Cofer & Somers, 1999, 2000; Han, 2016; Britt *et al.,* 2017; Yankovich *et al.,* 2019) and no association between the two (Schapiro *et al.,* 1991; Monks, 2001; Denning & Jones, 2021). For instance, using student-level administrative data, Schmeiser *et al.* (2015) examined the relationship between SLs and students' academic performance, choice of major and retention rates at Montana State University (US). The study revealed that having access to SLs can improve college performance, as those who availed student loans secured higher Grade Point Averages (GPAs) and took more credits. Similarly, Marx and Turner (2019) examined the causal effects of loans on student outcomes in the UK and found that student debt, widely considered a burden, may facilitate student success, especially for those who lack resources to pursue college. The study concluded that SLs, despite various problems, helped the students to score better grades, attend more classes and graduate sooner. A more recent study by Black *et al.* (2020) found that the students who borrow more accumulate more human capital and are more likely to (re)enroll in college, complete their degree, and have higher future earnings. The study concluded that increased student loan availability improved degree completion in the US. With an increase of $1,000 in student debt, those assessing constrained community colleges were about two percentage points more likely to complete an associate degree (ibid: p.28). In the context of Chile (where two loan programs assign loans based on a cut-off in the national college admission test), Solís (2019) examined the effect of SLs availability on dropout rates and found that access to student loans reduces the dropout rate by 25% and is highly persistent over time.

Many studies have also established the negative impact of student loans on the educational outcomes of students (Cofer & Somers, 1999, 2000; Dunlop, 2013; Wiederspan, 2016; Han, 2016; Huang *et al.*, 2018; Britt *et al.*, 2017; Yankovich *et al.*, 2019). In the context of Korea, Han (2016) examined the effect of the government education loan on students' academic performance, dropout decisions and loan defaults. The results indicate that recipients of General Student Loan (GSL) have lower academic performance than those who received Income Contingent Loan (ICL). The average grade of GSL recipients was 3.63 points, which decreases by 1.22 points if the loan amount increases by 1 million won (ibid: p.84). Further, the study suggested that the probability of dropout decision increases by 3% with the increase in the number of loans received (ibid: p.86). Huang e*t al.* (2018) found that SLs negatively affect borrowers' academic performance in China. Borrower students had about 0.07 standard deviation lower GPA scores than their non-borrower counterparts, and this negative effect persists even after two years (ibid: p.9). In terms of dropouts, Cofer and Somers (1999, 2000) found that students with high debt are less likely to finish their degrees. Similarly, Britt *et al.* (2017) and Baker *et al.* (2017) found that student loan debt increases the likelihood of discontinuing college in the US. Researchers have also concluded that students who borrow high amounts of education loans feel less confident about repaying, which hampers their academic performance (NSSE, 2015; Yankovich *et al.*, 2019).

Besides the positive and negative impact of student loans on educational outcomes, few studies found no causal relationship between the two (Schapiro *et al.*, 1991; Monks, 2001; Denning & Jones, 2021). For instance, Schapiro *et al.* (1991) studied the impact of debt on the educational outcomes of graduates from a set of private, expensive, highly selective colleges and universities. The study found no significant impact of education loans on the post-graduation plans and academic behaviour of the students. Similarly, exploring the linkage between borrowing levels and the likelihood of pursuing a graduate degree, Monks (2001) found that while majority of the students do not feel overly burdened by their indebtedness, a minority of borrowers feel adversely affected by their loans. However, the study further concludes that despite these feelings of anxiety, SLs do not appear to have a significant impact on the post-graduation plans of students in terms of planning further studies, type of degree program and their future career plans. A more recent study by Denning and Jones (2021) examined the effect of increased borrowing among students in the US on their educational outcomes. The study found no evidence that additional loans affected

students' GPA, persistence, or completion of graduation and suggested that increasing subsidised loan amounts do not seem to positively impact student achievement and human capital generation.

A significant body of literature suggests that student loan debt restricts borrowers' choice of jobs and occupation (Purcell & Elias, 2010; Purcell *et al.,* 2012) and prevent them from taking the financial risks necessary to start a business (Ambrose, Cordell, & Ma, 2015; Checovich & Allison, 2016; Krishnan & Wang, 2019), owning a house (Luong, 2010; Cooper & Wang, 2014; Gale *et al.,* 2014; Elliott & Lewis, 2015), purchasing a car (Baum & O'Malley, 2003; Brown & Caldwell, 2013), the decision to get married (Addo, 2014; Bozick & Estacion, 2014; Gicheva, 2016; Sieg & Wang, 2018), wealth accumulation (Luong, 2010; Hiltonsmith, 2013; Elliott & Nam, 2013; Cooper & Wang, 2014; Fry, 2014; Zhan *et al.,* 2016) and is related to mental health problems (Fitch *et al.,* 2011; Richardson *et al.,* 2013). We attempt to review some studies unfolding these issues.

Literature suggests that student loan debt restricts the career choices of borrowers. For example, student loan borrowers often go for jobs that were not their first choice (Purcell & Elias, 2010; Purcell *et al.,* 2012). This debt also prevents the borrowers from taking financial risks necessary to start a business (Ambrose *et al.,* 2015; Checovich & Allison, 2016; Krishnan & Wang, 2019). The association between indebtedness and career choice is found inconsistent among those pursuing a postgraduate course. For instance, among medical graduates, most studies find no relationship between student loan debt and choosing a low-earning speciality and primary care physician (Frank & Feinglass, 1999; Kahn *et al.,* 2006; Youngclaus & Fresne, 2013). Perhaps, the level of loan matters here as those who hold large debt may be less likely to choose a low-paying career (Phillips *et al.,* 2014). Scholars examining the relationship between student loan debt and job satisfaction consistently found a negative relationship between the two (Luo & Mongey, 2016; Weidner, 2016; Gervais & Ziebarth, 2019). Indebted graduates show less risky job market behaviour as they are less likely to be unemployed and less likely to shift jobs (Chapman, 2016; Weidner, 2016; Gervais & Ziebarth, 2019).

Quite a few studies have examined the influence of student loan take-up on students' postgraduate enrolment decisions (Allen *et al.,* 2006; Purcell & Elias, 2010; Purcell *et al.,* 2012;

Strike, 2014). While some studies find no relationship between student loan debt and enrolment in postgraduate studies (Choy & Carroll, 2000; Monks, 2001; Millett, 2003; Perna, 2004; Rothstein & Rouse, 2011), others find a negative relationship (Weiler, 1994; Choy, Geis, & Carroll, 1997; Heller, 2001; Malcom & Dowd, 2012; Zhang, 2013). A few studies also find a positive relationship between the two (Minicozzi, 2005; Kim & Eyermann, 2006; Azmat & Simion, 2017; Mateos-Gonzalez & Wakeling, 2020). For instance, Mateos-Gonzalez & Wakeling (2020) demonstrated that the transition from first-degree to higher-level degrees increased due to the introduction of master's loan schemes in the UK. The share of borrowers reporting that their debt influenced their decision to go for further studies ranges from 28% to 64% in the United States (Baum & O'Malley, 2003; Stone *et al.,* 2012; American Student Assistance, 2015; EdAssist, 2016) and from 13% to 63% in the United Kingdom (Purcell & Elias, 2010; Purcell *et al.,* 2012; Strike, 2014). The decision to pursue a postgraduate degree is affected by students' socioeconomic background (Kim & Eyermann, 2006), their ethnicity (Malcom & Dowd, 2012; Purcell *et al.,* 2012), amount of debt accumulated (Monks, 2001; Millett, 2003; Minicozzi, 2005; Malcom & Dowd, 2012) and institutional factors like type of postgraduate degree (Perna, 2004) and type of undergraduate institution (Zhang, 2013).

Research around the globe has examined the relationship between student loan borrowings and the earnings of students. While some of them established a negative relationship between the two, i.e., higher debt being related to lower earnings (Price, 2004; Weidner, 2016a; Ji, 2021), others found a positive association (Minicozzi, 2005; Rothstein & Rouse, 2011; Chapman, 2016; Luo & Mongey, 2016). For instance, an additional $1,000 of student debt increases the student's future earnings by 2.5 percentage points in the US (Black *et al.,* 2020, p.29). Further, quite a few studies suggest no relationship between student debt and earnings (Luong, 2010; Purcell & Elias, 2010; Zhang, 2013; Fry, 2014; Gervais & Ziebarth, 2019; Goodman, Isen, & Yannelis, 2021).

Similarly, the literature suggests that loan debt affects borrowers' decision regarding when to get married. Some studies found a negative association between student loan debt and marriage (Gicheva, 2011, 2016; Addo, 2014; Bozick & Estacion, 2014; Sieg & Wang, 2018), and a few other studies found no relationship (Choy, Li, & Carroll, 2006; Marks, 2009; Zhang, 2013; Gervais & Ziebarth, 2019). As suggested by some surveys in the United States, between 14% to 21% of

borrowers reported that their student loan debt delayed their time of getting married (Baum & O'Malley, 2003; Stone *et al.*, 2012; American Student Assistance, 2015; EdAssist, 2016). Few of the above studies suggested that the relationship either only existed for women or was much stronger among women than men.

Student loan debt is negatively linked with homeownership (Luong, 2010; Cooper & Wang, 2014; Gale *et al.*, 2014; Brown *et al.*, 2014; Elliott & Lewis, 2015). Similarly, loan debt also negatively affects the values of houses and equity (Elliott *et al.*, 2013; Hiltonsmith, 2013; Elliott & Lewis, 2015; Zhan, Xiang, & Elliott, 2016). In the United States, various surveys have concluded that around 38% to 71% of student loan borrowers feel a delay in buying a house because of their debt (Stone *et al.*, 2012; American Student Assistance, 2015; EdAssist, 2016). Though literature strongly suggests that homeownership rates are lower among borrowers, not much evidence is available that clearly states the association between the amount of debt and homeownership. Some of the available studies find a negative relationship between the two (Baum & O'Malley, 2003; Shand, 2007; Elliott *et al.*, 2013; Cooper & Wang, 2014; Houle & Berger, 2015; Mezza *et al.*, 2015; Bleemer *et al.*, 2017), whereas, other find no relationship (Marks, 2009; Zhang, 2013; Gicheva & Thompson, 2015; Gervais & Ziebarth, 2019; Black *et al.*, 2020). Thus, holding debt is relatively more important than the level of debt with regard to homeownership.

There is evidence that loan debt is linked with health issues, particularly mental health problems (Fitch *et al.*, 2011; Richardson *et al.*, 2013; Walsemann *et al.*, 2015; Armstrong *et al.*, 2019), although it is moderated by socioeconomic factors (Dwyer *et al.*, 2011; Walsemann *et al.*, 2015), the amount of loan debt (Despard *et al.*, 2016). Student loan borrowing is associated with difficulty meeting basic needs and managing finances, resulting in mental stress (Despard *et al.*, 2016; Pisaniello *et al.*, 2019; Nissen *et al.*, 2019). While examining the linkage between student borrowing and mental health in the context of US, Walsemann *et al.* (2015) found a direct correlation between the two. Student loans are observed to be associated with poorer psychological functioning (Walsemann *et al.*, 2015), less sleep duration for Black individuals (Walsemann *et al.*, 2016), relatively more healthcare hardships (Despard *et al.*, 2016), less self-esteem among adults (Dwyer *et al.*, 2011) and poorer health among borrowers (Cooke *et al.*, 2004; Ross *et al.*, 2006; Morra & Ginsburg, 2008; Walsemann *et al.*, 2015).

Quite a few studies have stressed the reasons for student loan default across the globe. First, the students borrow educational loans without knowing the consequences (Laing, 2012). As Avery and Turner (2012) argued, some students borrow the maximum amount of SL they can borrow, mostly beyond the direct cost of education, without considering the consequences of repayment. The author states that college is the first capital investment for most students. However, there exist several other significant factors (such as achievement and earnings potential) that make college education a risky decision. Second, it is anticipated that students would be in a position to repay the loan amount just after completing the course and securing a high-salaried job. However, different labour market factors might lead to non-repayment or default. Laing (2012) found that owing to fewer employment opportunities due to the recession that started in 2008; graduates are finding it more challenging to secure a job. Also, it resulted in many people (mostly in the age group of 34-39) losing their job and returning to school, either to improve their skills or to change their careers. This prevents them not only from repaying the loans but also from not contributing to the economy. Along similar lines, Albrecht and Ziderman (1992) concluded that one of the reasons for failing to repay the student loan was a lack of adequate income. The study suggested two main strategies to improve the ability of student loan repayment programs. The first strategy includes planning a staggering loan refund program taking the students from low-income families into consideration. Secondly, the concealed subsidy should be reduced by charging positive interest rates, but it should be put together with the help of reasonable repayment.

In this context, Knapp and Seaks (1992) revealed that graduation opens employment opportunities and raises earnings that lower an institution's default rate, i.e., graduation causes success. Using the National Post-Secondary Student Aid Survey, Minicozzi (2005) attempted to estimate the impact of student loan debt on the wage growth of college graduates in the United States. The study revealed that college graduates having higher loan debt tend to choose a high-salaried first job. However, their subsequent wage growth rate was observed to be low. A similar result was found by Rothstein and Rouse (2011) in the context of the US, concluding that the debts cause graduates to choose substantially higher-salaried jobs and reduce the probability of choosing low-paid 'public interest' jobs. Likewise, exploring the career choices of law school students, Chambers (1992) finds that students with higher debts are more likely to take jobs in large private law firms than jobs in government legal services.

Third, other than the labour market, the major factor that explains loan repayment is the willingness to repay. Johnstone (1987) observed that a low default rate in some countries could indicate more willingness of borrowers to repay compared to the countries with a high default rate. In this view, the default rate could be considered a signal of society's satisfaction with the student support system. The study also concluded that a low default rate could also indicate a high ability to repay the loans. Similarly, Gross *et al.* (2009) asserted that student characteristics, as well as their attitude, willingness, and their ability to repay, significantly determine borrowers' propensity to repay. Ismail *et al.* (2012) concluded that the students' approach towards the repayment of loans mediates through the relationship between their parents and intention to repay. It concluded that the students' awareness and attitude of loan repayment disputes created by media are fully intervened by parental impact. Considering the impact of parents and media on students' loan repayment attitudes, the study anticipated that the outcomes of these two groups would find the results useful in the way in which student loans can affect repayment. McClanahan (2011) found that some students view graduate school as a way of postponing repayment of loans. Because SLs enter rescheduling while being enrolled in school, graduates who are incapable of securing a job use this tactic of pursuing further education as it permits them to put off reimbursement and form a stronger academic portfolio.

Fourth, the repayment is also determined by the source of loan, i.e., whether the loan is availed from a public or private sector bank. The New York Times (2014)[3] stated that students who pay for college using federal student loans could avoid default when falling on the hard payment or by paying a lower payment or no payment until they recover financially. Whereas those who borrowed SLs from private banks and other institutions have no such options. They are left with little choice but to default if they lose their jobs and suffer financial setbacks.

Further, loan default has a negative impact on both the debtor and the government. Woodhall (1992) argued that the loan recovery system should be improved to inspire the borrower to repay their loan within time. The failure to pay back a loan is divided into two different categories, namely, (i) not repaying the loan at all and (ii) delayed payment. If there is no loan

[3] Available at: http://www.nytimes.com/2014/11/04/opinion/driving-student-borrowers-into-default.html (Accessed on: 26th April 2018)

repayment in time, their objective will be unproductive, and it could not be continued further. Individuals defaulting on a student loan damage their credit reputation for future transactions with the banks. Whereas, for the government, a student loan default implies a loss covered by the taxpayers' money. The literature on student loans includes empirical studies focusing on the most common problem of non-repayment or loan default. Several studies by the World Bank have reported that the recovery rate of SLs in many countries was below 40% and, in some countries, it was, in fact, negative as the real interest rate was low or even negative. It was assessed that it would take approximately 14 years to recover 50% of the loan amounts in developed countries such as the UK. A similar finding was reported in a recent study by Chapman and Dearden (2018), stating that default rate was at least 40% in Brazil, Malaysia, and Thailand.

Experiences of many developing and developed countries indicate serious weaknesses associated with student loans. As observed by some studies, the major drawback of SLs is that the students do not wish to start their careers with a debt burden. Today's students are saddled with a similar burden as their parents bear (Nasser, 2011). Students nowadays, too, appear to have mortgaged their future earnings in the form of student loan debt. Moreover, it is argued that SLs would increase forthcoming pressure on the part of the students during their study and until the time of repayment. The students from low-income families availing SLs will be worst affected if they do not get a job after completing their course and are required to repay the loan. This problem worsens for female students whose participation in the formal labour market is relatively low, especially in developing countries. In this context, the next section discusses the Indian experience of loan financing of higher and professional education.

2.5 Loan Financing of Higher Education: The Indian Experience

With the increasing HE costs, student loans are considered as an important method of financing HE in India (Mukherjee, 2007; Gandhar, 2010; Puttaswamaiah, 2010; Panigrahi, 2010; Tiwari & Anjum, 2013; Varghese & Manoj, 2013; Rani, 2014, 2016, 2018; Chalil, 2021). Puttaswamaiah (2010) states that budgetary expenditure on HE has declined after introducing economic reforms, and new sources of financing are being explored in India. The study indicates that the demand for education loans in India has been increasing in the past years, notably by the public sector banks (ibid). Rani (2018) explores the linkages between privatisation and growth in

demand for SLs in India. The study concludes that increasing role and share of SLs in financing HE tends to strengthen the nexus between the expansion of HE and privatisation. Similarly, Gandhar (2010) observed that educational loan segment is becoming popular among HE students owing to increased private participation, especially in professional courses like engineering and management. The study stated that as scholarships in HE have been declining, education loans have come into focus to raise access to HE. The education loan accounts rose from a meagre 0.11 million in 2000-01 to 2.59 million in 2013-14, registering an annual average growth rate of 28.7% (Rani, 2016). Examining the economic survey of India, Jayadev (2017) reported that around 2,384 thousand students availed student loans amounting to ₹60,010 crores in 2017-2018, registering an average approximately loan amount of ₹4 lakh.

The rapid growth of education loans in India is an outcome of the influence of various factors. First, the Indian HE sector has undergone a massive expansion in terms of institutions and enrolment in the past two and a half decades (Varghese, 2015, 2022). Second, during the 1990s, the HE sector was opened up for private participation under neoliberal policies (Choudhury, 2016a; Tilak, 2018a; Muzammil, 2019; Varghese & Panigrahi, 2022; Venkatesh *et al.*, 2022). Third, the emergence of self-financing courses has raised the issue of increased tuition fees not only in private HEIs but also in public institutions like IITs & IIMs (Varghese & Sarkar, 2022). Fourth, as Rani (2016) found, the earnings premium for a graduate compared to high school passed nearly doubled in the last three decades in many countries. The recent estimates on private returns to education in India indicate an incentive to acquire higher levels of education as the return to HE is positively increasing with each level of education (ibid, p.187).

Though the education loan sector has registered significant growth, several studies have observed that the student loan market is inherently imperfect. The imperfection in the capital market of such loans in India is mainly attributed to the factors such as information asymmetry, adverse selection among different factors, complex procedures, cases of discrimination in granting loans concerning the type of course and socioeconomic background (Chattopadhyay, 2007; Panigrahi, 2022). In this context, an ASSOCHAM study[4] found that only 3% of the students seek

[4] Available at: www.banknetindia.com/banking/70614.htm (Accessed 18April 2020).

loans in India compared to 85% in the UK and 77% in the US and major reasons behind this figure are the burdensome procedure and the small amount offered. Similarly, Arora and Kaur (2016) analyse the education loan scheme of the Indian Banks Association (IBA) and state that the scheme's response has been poor so far. The challenges or the reasons pointed out by the author include high rates of interest, less awareness among students and parents, short repayment periods, and qualification of a minimum level of income.

Tilak (1992 & 1999) discussed some major problems of student loans: (a) students do not wish to start their career with a burden of debt; (b) parents perceive education as an invisible human capital whose benefits are not easily identified and therefore do not prefer to borrow for education; (c) the process of loan recovery is not a stress-free job; (d) launching student loan program in developing countries require huge initial funds; and (e) the access to loans is guided more by the ability to repay (mortgages, security and collateral) than either by educational merit or economic need of the borrower. Therefore, SLs turn out to be restricting the access of the poor to HE. Colossal loan burdens may, in fact, create some problems like mental stress and suicide. Similarly, Tilak (2007) gives an overview of problems in financing HE in India and reviews the strengths and weaknesses of the *Comprehensive Educational Loan Scheme*. This scheme was framed in 2001 by the Government of India in consultation with the Reserve Bank of India (RBI) and Indian Banks Association (IBA). The study concluded that the student loan programme in India is based on an inherently dangerous philosophy, unrealistic assumptions, and ambitious expectations. Some unrealistic assumptions of student loan programmes are (a) students from low-income families will get access to loans, (b) loan amount can be fully recovered within the repayment period, (c) strong link between education and labour market, (d) existence of developed education credit market, and (e) banks would lend to students from weaker sections (ibid, p.246). The author suggested that grants to HEIs and scholarships to students are more effective ways to promote access and equity in HE than any other method, such as fee recovery or student loans (ibid, p.247).

A few studies on student loans in India provide details of the objectives, implementation, and problems of student loan schemes (John, 2013; Jayadev, 2017; Das & Ray, 2019). For instance, Jayadev (2017) used student loan data on interest subsidy beneficiaries for 2009-10 to 2013-14 made available by Canara Bank to analyse the Indian education loan market. The study revealed

that only 10% of the total enrolled students in HE have access to education loans and the major issues related to education loans were observed to be loan default, high repayment burden, low entry norms, students ignorant about their capabilities, employment market conditions and low employability, streamlining eligible income limits and certificates, multiple funding and subsidy channels, and government as the ultimate risk manager. Further, the study by John (2013) is perhaps one of the major comprehensive studies on the implementation and impact of SLs in India. It discusses the equity issue in HE and the relevance of education loans in India. The author observed that under the Indian model of SLs, government provide a guarantee for repayment of loans to commercial banks. While the study endorses the idea of escalating SLs and recommends establishing a national body for coordinating all such efforts, it cautions against the undesirable effects of raising the issue of equity for students from socially and economically marginalised sections (ibid). Given the problems associated with the existing student loan scheme in India, along with the experiences of several countries, Das & Ray (2019) advocated a case for introducing income-contingent SLs in India. The study concluded that a well-designed ICL scheme could overcome the lack of education access among the Indian youth and enhance human capital formation (ibid: p.306).

Bandyopadhyay (2016) analysed the risk associated with education loans using cross-sectional data of 5000 borrowers from four major public sector banks in India. The study found that major factors influencing loan defaults include security, borrower margin, and repayment periods. The socioeconomic characteristics of borrowers and their regional locations influence the loan default rates. The presence of a guarantor or collateral was observed to be decreasing the default loss significantly. The study suggested that banks can adopt better risk mitigation and pricing policies to resolve borrowers' problems by segmenting borrowers by the probability of default and loss on a multidimensional scale.

Increased private sector participation has made it difficult for students belonging to disadvantaged groups to pursue further education, as discussed by Navaneetha (2013). Though the availability of education loans, to some extent, has made it possible for these students to pursue HE, it has further increased the inequality in access to HE (Debi, 2014). In this context, some studies have examined the access and determinants of student loan take-up among university

graduates in India (Mukherjee, 2007; Panigrahi, 2010; Debi, 2014; Adhikari, 2016; Rani, 2016; Tilak, 2020; Biswal & Chinara, 2020). For instance, Adhikari (2016) argues that participation of SCs in HE is far below expectations as the amount of government scholarship, selection process, and disbursement were insufficient to provide HE access. Moreover, the bankers were only doing business for the rich, as education loan facilities did not benefit poor SCs because of insufficient collateral (ibid, p.5).

Likewise, using data from the Interest Subsidy Scheme on Student Loans, Rani (2016) found that the amount of loan and interest subsidy favours the rich male and high caste groups. Also, students pursuing market-oriented courses get the highest education loans and, by default, get the highest interest subsidy, further accentuating societal inequality. Further, based on a primary survey, Mukherjee (2007) reported that the amount of SLs granted depends on the family income, academic background of the student and stream of study from 1998 to 2004 in Mumbai. Panigrahi (2010) revealed that commercial banks discriminate based on applicants' socioeconomic status and expected labour market returns. In fact, some banks unofficially ask for securities for loans that are supposed to be collateral-free as per the loan scheme (ibid). In the context of Odisha (an eastern state of India), Debi (2014) found that banks grant SLs to rich applicants. Further, banks discriminated based on the applicant's caste, as more than half of the successful loan applicants were from upper castes, and only 3% were scheduled castes. Similarly, more than three-fourths of overall loans were granted to male candidates and only one-fourth to females. The highest loan amount was sanctioned to MBBS and MTech candidates, whereas the lowest amount was reported for those pursuing diploma courses. The study concluded that SLs could not solve the inequality of access to HE as they do not fulfil the social objective of equity criteria in sanctioning (ibid). A more recent study by Biswal and Chinara (2020) also confirmed that commercial banks discriminate loan applicants based on their socioeconomic settings in Odisha. For instance, share of SC and ST in total successful loan applicants was marginal compared to their UC counterparts. Banks prefer granting student loans to those pursuing professional courses with higher labour market returns (ibid: p.61).

On similar lines, Tilak (2020) examines the factors influencing access and amount of student loans received by engineering graduates in India. Using the data collected from 7,000

students studying in 40 engineering institutions in four states in India, the study finds that a significant share of engineering graduates opts for SLs (10.3%), given the high household cost of the course. Logit estimates reveal that socioeconomic factors such as gender, caste, family income, and parental occupation influence opting for SLs from banks. Further, OLS estimates confirm that economic status, parental occupation and ownership of assets such as houses and land are significant factors that explain the student loan amount received. It is important to note that students from economically (low-income families) and socially backward groups (SC/STs), who may need loans to fund their education, are less likely to get loans than their counterparts. Perhaps, banks are more willing to give loans to students from higher economic and social categories. Given these issues, the author emphasises modifying or redesigning the student loan schemes in India to improve access to HE, especially among the deprived section of society. Further, the study highlights the importance of promoting other subsidies like scholarships and fee waivers.

A recent study by Panigrahi (2022) examined the efficacy of student loans in improving access to higher education in Odisha among the underprivileged sections of society. The study found that most students pursuing technical or professional courses (around 56.3%) finance their education by borrowing an average student loan of ₹3.51 lakh (ibid: p.88). The study highlights that though SLs aim to ensure access to HE for meritorious and needy students, practices exercised by commercial banks would deter these students' HE participation. Banks give significant weightage to the stable income of applicants' parents while sanctioning SLs, which banks perceive as their repayment capacity (ibid: p.88). Therefore, there is a need to re-examine the fee structure, grants, scholarships, and student loan schemes in the context of privatisation, which raises the question of affordability (Rani, 2016).

The study by Kanitkar (2004) discussed two suicide cases in India; one related to Rajni, a Dalit engineering student in Kerala who committed suicide as her family could not afford the cost of her education, and her SL application had reportedly been turned down by several banks. Second case is related to the financial troubles of Vaishali, a medical student in Nagpur. These tragic incidents have been remarkable in the history of HE financing in India. The study suggested enhancing the banking system to ensure such incidents are never repeated. Likewise, Gandhar (2010) concludes that student loan schemes run purely on a commercial basis and do not offer any

soft options for the meritorious and the needy. On a similar line, Varghese and Manoj (2013) also suggested that eligible students belonging to SCs, STs, and EWS categories should be provided education loans without any shortlisting from the bank side.

Further, Chalil (2021) examined the growth of education loan market and its regional spread in India. The study found that the dispersal of student loans reveals a skewed distribution among various states and regions of the country. For instance, southern states hold around 60% of the total student loan accounts in the country, whereas the north and north-eastern states lag far behind. In fact, two states, namely Tamil Nadu and Kerala, alone hold around 36% of student loan accounts in India (ibid: p.130). Similarly, Krishnan (2020) discussed some crucial inadequacies in the student loan mechanism in India. These include skewed distribution of SLs, high default rates and laxity of the private commercial banks in the provision of SLs. In this context, studies examining problems associated with SLs concluded that their uneven distribution vitiates the very objective of these loans.

What are the plausible answers to the debate on choice of credit and fiscal instruments to provide access to HE and usage of student loans as an indirect instrument of reduction in the budgetary subsidy to HE? Narayana (2005) tried to examine the role of SLs in financing the estimated budgetary subsidy to education in the Karnataka state of India. The study found that the share of fees collected to total estimated subsidy was 4.2% in government colleges and 4.7% in private aided colleges. The study suggested that both SLs (as a credit instrument) and budgetary subsidies (as a fiscal instrument) must be treated as complements, and they should be mixed with other instruments (like merit and loan scholarships and free studentships) to help the needy students to pursue HE (ibid: p.182). Rani (2014) argued that when examining who benefits from government subsidies in HE, it is central to understand the dynamic between hidden grants and student loans (p.186). This understanding would lead us to identify the threshold level of SLs that need to be converted into grants. The rationale behind converting loans into grants is to provide free access to HE for the needy and indirectly facilitating loans to the affluent and privileged for cost recovery.

Though majority of the studies have reported problems related to the student loan system in India, Patra *et al.* (2017) have pointed out the benefits of student loans. The study presents evidence of strong positive impact of availability of SLs on HE outcomes in India. Using RBI data supplemented by NSO 71st round data, the study examined the effect of increased availability of SLs on years of schooling attained by an individual and an individual's decision to pursue HE in India. The study finds that one standard deviation increase in the number of student loan accounts leads to an improvement of 6.17% in the years of schooling. Also, it was estimated that one standard deviation increase in the number of student loan accounts results in a rise of 6.87% in HE enrolment. Further, the impact of SLs was observed to be more pronounced for the relatively disadvantaged groups across gender, location, and caste. Additionally, a few studies found a direct relationship between the growth of student loan market and HE expansion in India (Dhiman, 2011; Arora & Kaur, 2016; Rani, 2018). In the context of professional education, Dhiman (2011) found a significant impact of student loans on the development of Indian education sector as the number of education institutions started increasing after the introduction of SLs. Therefore, encouraging SLs is suggested to develop the education sector (ibid). Likewise, Arora and Kaur (2016) reported a linear increase in the number of HEIs, enrolment, and the percentage of education loans borrowed at the national level and in Punjab (India).

Considering the huge population and low Gross Enrolment Ratio (GER), Tiwari and Anjum (2013) argue that availability of education loans is necessary to ensure supply of skilled workforce and economic progress in India. The move towards privatisation and poor budgetary support in HE further increase the importance of education loans. It was observed that for every 1% rise in the GDP, the demand for education loans rises by 3%. The study recommended enhancing the utility of education loan schemes to improve access and employability of the students. Similarly, Navaneetha (2013), in light of the growing significance of HE, emphasises the importance of student loans to increase enrolment and enhance human capital for sustainable economic development. The study highlights that increased private sector participation has made it difficult for marginalised students to pursue HE and how SLs are an important substance for India's social mobility and economic development.

While many studies exist on the student's perspective, bankers' perception of a student loan is less studied. In a case study of education loans in Delhi, Srinivasan and Das (2011) explored practices followed by banks in selecting the beneficiary of SLs, problems faced by the applicants, background of the problematic/unsuccessful applicants, and steps taken to overcome the difficulties. Using a probit model, the study found that banks prefer granting educational loans to students pursuing professional post-graduation courses and those attending or seeking to take admission in government institutions. However, no discrimination was observed in granting SLs between the students with or without prior work experience (ibid). The study further reveals the reluctance of private sector banks to extend loans and concludes that students with good social status and pursuing postgraduate or professional courses from a government institution are more likely to get educational loans. Additionally, a report on SLs published in The Times of India (2012)[5] conveyed that some banks view SLs as a business despite the government's good intentions. They expect the interest payment for a loan in the moratorium period, i.e., the student will start repaying the loan in college. In some cases, the parents have to take the additional burden of repaying the student loan, particularly for female students who will marry soon after graduation. Further, Bhattacharya (2011) concluded that various difficulties faced by the students to meet the loan repayment put the bankers in a confusing and conflicting situation that results in offering educational loans with caution. An interesting qualitative analysis of the bankers' perception of student loans in India is done by Pant *et al.* (2021). The study found procedural issues associated with SLs as a product for commercial banks. For instance, bankers are generally uncomfortable with collateral-free loans, especially private sector banks. Due to this, bankers give importance to the financial stability of parents, even if the child is meritorious (ibid: p.131). Similarly, credit managers are sometimes unaware of the scope of the concerned professional course and are unable to determine the future earning potential of the applicant (ibid: p.134). The study suggested providing an employability database of different HE courses to commercial banks, which can assist them in determining the job potential of the applied course.

[5] Available at: https://timesofindia.indiatimes.com/city/kozhikode/Banks-refuse-to-heed-government-plea-on-student-defaulters/articleshow/14044232.cms? (Accessed on 25th April 2018)

2.6 Research Gap & Rationale of the Study

Higher education, particularly technical and professional education in India, is in great demand due to the rapid expansion of the knowledge economy in the neoliberal era. However, the inability of the government to fulfil the demand for public education and increased privatisation have prompted concerns over the funding of HE. Policies and practices for financing HE have undergone significant changes around the globe in the last few decades, including in India. The growing pressure on private funding of HE in India, coupled with rising costs, and dwindling public funding, has burdened the households with accessing HE, especially the costly professional courses such as engineering, management, and medicine. The recommendation given by policymakers to cope with privatisation and cover the HE cost for households is availing of student loans.

The review attempted in this chapter reveals a dearth of literature in the domain of student loan financing of HE in India. Five significant limitations of the existing studies in this area have been identified. First, research on SLs in India has mainly focused on the overall expansion of the student loan market in terms of number of loan accounts and amount outstanding, as well as the major strengths and shortcomings of the loan schemes. As a result, studies examining the inequalities in access to SLs in India are sparse. Second, discipline-specific studies on loan financing of HE in India are almost absent. Scholars have paid little attention to examining the SLs market for professional courses like medicine, engineering, and management (except for Tilak, 2020), which are relatively costlier than general HE courses and in which a higher share of graduates take SLs. Third, only a handful of studies have examined the role of graduates' socioeconomic and institutional settings in access to student loans in India. Hardly any work could be found that unfolds students' experiences and difficulties while availing loans – especially for those from socially and economically backward groups. Exploring the experiences of SL borrowers is imperative to unfold the inherent complexities in the SLs market in India. Fourth, to our knowledge, there is no comparative study between student loan borrowers and non-borrowers with respect to their academic and labour market outcomes. Who among these two groups of students (borrowers or non-borrowers) is in a better position when accounting for academic and non-academic factors and also their labour market outcomes? Fifth, hardly any study in India could be found that examines the effect of student loans (expected or actual) on borrowers' life choices, such as further studies vis-à-vis job, career choices, homeownership, buying a car, when to get

married, and financial contribution to the family. Though there are good number of studies on this issue in the international context, it remains unexplored in India.

To sum up, the absence of new and updated research on loan financing of PHE in India is quite visible. As Government of India has been and continues to emphasise student loans as an alternative to increased fees, there is an urgent need to critically examine the questions related to access to SLs in India. In this context, using primary and secondary data, this study takes forward knowledge and understanding by analysing access to SLs among PHE graduates. Besides examining the household spending on PHE in Delhi and its relationship with student loan borrowings, five specific issues addressed in this study are (a) the growth of student loan market in India, (b) socioeconomic inequalities in access to SLs among PHE graduates, (c) linkage between education loans and students' participation in academic and non-academic activities, (d) exploring the information asymmetry that exists in the SL market, and the procedural difficulties faced by the students in accessing SLs, and (e) labour market outcomes or expectations of student loan borrowers and non-borrowers. The findings of this study are expected to help in evidence-based policymaking in the financing of HE in general and, specifically, the loan financing of HE.

CHAPTER 3
DATA & METHODOLOGY

3.1 Data and Sample Design

This study uses both primary and secondary data. Three major secondary sources used in the analysis include data and reports made available by the *National Statistical Office* (NSO), *Ministry of Education* (MoE)[1] and *Reserve Bank of India* (RBI). We use unit-level data from the 75th education round of NSO (2020) to examine the student distribution in various higher education courses in India and the different sources through which students finance their education.[2] The 75th round (the latest available NSO data of education), namely '*Household Social Consumption: Education',* includes a sample of 1,13,757 households (64,519 rural and 49,238 urban households) from all over India. Unlike the other 'general' NSO rounds, the focus of this round's survey was to collect information on a few important issues related to education, in addition to many other household-level characteristics in detail: (a) participation in education, (b) family expenditure, often referred to as private expenditure, incurred by households on education, (c) sources of financing education such as student loans, (d) financial incentives provided by the government and (e) the extent of educational wastage in terms of dropout and discontinuation along with causes of the same. The present analysis restricts the sample to students currently attending higher education (HE) in India, and the sample size came out to be 32,125. This restriction is done to examine the share of graduates availing student loans in various general and professional higher education (PHE) courses.

[1] Under the National Education Policy 2020 (passed on 29th July 2020), the name of Ministry of Human Resource & Development (MHRD) was changed to Ministry of Education (MoE).

[2] The unit-level data for 75th NSO round is publicly available at: https://www.mospi.gov.in/download-tables-data (accessed 25th April 2021).

The analysis of NSO data is supplemented with information compiled from other secondary sources like annual reports of *All India Survey of Higher Education*[3] (AISHE), provided by MoE, and *All India Council for Technical Education*[4] (AICTE) database. AISHE is an annual survey conducted by MHRD since 2010-11 to depict the status of higher education in the country. It covers majority of institutions in the country engaged in providing HE courses. It provides information on some important dimensions of HE, such as student enrolment, gross enrolment ratio, institution density, pupil-teacher ratio, gender parity index, examination results, and infrastructure. From 2012-13 onwards, AICTE provides data regarding PHE institutions, course-wise student intake, student enrolment, and placement. Information from these secondary sources is used to supplement the analysis of primary survey data.

Reserve Bank of India (RBI) data from *Statistical Tables relating to Banks in India*[5] is used to map the growth of student loan market in India during last one and a half decades, wherein the RBI floated a new policy of loans for the Indian students. This annual dataset provides information on major assets and liabilities of scheduled commercial banks in India. It provides information regarding the total number of active education loan accounts, amount outstanding by type of bank and different states in India. Besides, it provides information on priority sector advances and Non-Performing Assets (NPA). We use this information to examine how the student loan market in India has registered growth between 2004-05 and 2020-21 – in terms of number of active student loan accounts and outstanding amounts, considering RBI's new policy of loans for Indian students. To link the growth of student loans with the expansion of HE in India, we supplement the analysis with information from AISHE reports and *Statistics of Higher & Technical Education*,[6] provided by MoE, Government of India.

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[3] Reports available at: https://aishe.gov.in/aishe/home#

[4] Data available at: https://facilities.aicte-india.org/dashboard/pages/angulardashboard.php#!/approved (last accessed 3rd April 2022)

[5] Data Retrieved from: https://rbi.org.in/Scripts/AnnualPublications.aspx?head=Statistical%20Tables%20Relating%20to%20Banks%20in%20India (last accessed 3rd April 2022).

[6] Available at: https://www.education.gov.in/en/statistics-new (last accessed 3rd April 2022).

Primary Data

The major analysis of this study is based on the primary data collected through a survey of students pursuing professional courses such as Bachelor of Technology (BTech), Master of Business Administration (MBA) and Post Graduate Diploma in Management (PGDM) in Delhi. The survey was conducted from January to August 2021. It covers 18 professional higher education institutions in Delhi[7], wherein 1,508 students were surveyed in three different types of institutions (central government, state government and private-unaided) across different courses of study. Student survey included final year students from 2-year management courses (MBA and PGDM) and 3rd and 4th-year students from 4-year engineering courses (BTech). The choice of 2nd year MBA/PGDM students and 3rd and 4th year of BTech students are due to (a) it can be assumed that students at the later stages of their course would be more apt as they would be able to assess or evaluate their course of study and institution better than the recently admitted students; (b) as these students are about to finish their course, student loan borrowers would be able to answer the questions regarding their intentions and plan to repay their loans, and (c) the probability of entering into labour market and its variation between the borrowers and non-borrowers can be examined by taking students who have secured jobs through *'campus placement'* as employed, which is offered to the final year students only.

An initial attempt was made to conduct the survey offline, covering all 3rd and 4th year BTech students and final-year MBA/PGDM students in all institutions offering these courses in Delhi. However, due to the Covid-19 pandemic and ensuing lockdown, many institutions (mostly privately managed) did not permit us to conduct the survey, and we ended up surveying 1,508 students, including 1,192 BTech and 316 MBA/PGDM students. Moreover, we attempted to conduct the survey offline, but higher education institutions (HEIs) in Delhi were operating on a blended teaching model (both online and offline) during the survey period. Therefore, the survey was conducted online and offline as per the situation and permission granted by respective institutions. For online mode, the student questionnaire was converted into a google form, and the institutions (head of various departments such as deans, principals, chairpersons, and placement

[7] A profile of all engineering and management institutions in Delhi for the academic year 2020-21 is listed in Table A3.3 in appendix of this chapter (p.77). It includes details regarding institution name, year of establishment, type, course-wise student intake, actual enrolment, intake-enrolment gap, and placement.

offices) were requested to forward the google form link to the targeted students (i.e., last year students from MBA/PGDM courses and 3rd and 4th-year students from BTech courses). While around 64.2% of the sample students (968 students) responded to the online survey link, the rest 35.8% (540 students) were surveyed offline.

A student questionnaire and an interview schedule were used for data collection.[8] A major part of the analysis is carried out with the data/information obtained from the student questionnaire. The student questionnaire was administered to collect information concerning: (a) socioeconomic and demographic profile of the student; (b) academic background and current education profile; (c) family expenditure on education; (d) student loan status; and (e) labour market outcomes and expectations. In particular, questions pertaining to socioeconomic background of the students include information regarding individual factors (such as gender, caste, and religion) and household characteristics (such as location, family income, source of income, parental occupation, parental education, family size, family type and assets). Further, detailed information related to the academic background (information related to senior secondary such as year of passing, school type, medium of instruction, marks secured, board and pre-admission coaching) and current education profile (such as institution type, course, discipline of study, medium of instruction, placement facility, and scholarship). Similarly, questions were asked regarding participation in co-curricular activities like sports competitions, academic competitions, annual functions, student union, college picnics and other functions. A major focus was to collect information on student loans such as loan amount, bank type, rate of interest, collateral, guarantor, source of information, major problems faced in availing loan and other related aspects of student loans. Additionally, questions attempted to collect information pertaining to students' outcomes and expectations from the job market, such as placement secured, annual salary offered/expected, and the type of company where placement is secured. It is important to mention that the questionnaire consisted of a separate section for the students who applied for student loans to bring forth their academic experiences from a comparative perspective.

[8] Both the student questionnaire and interview schedule are included in the appendix of the thesis.

In addition to the student survey, interviews of 30 PHE students were conducted – including 15 borrowers and 15 non-borrowers. The primary objective behind collecting the qualitative information through interviews was to substantiate the quantitative findings from the student survey. Questions in the interviews were asked on four broad dimensions: (a) opinions and/or experiences regarding student loans, (b) participation in co-curricular activities, (c) stress levels, and (d) labour market outcomes and expectations. The qualitative analysis enables us to unfold students' opinions and experiences of loan financing of their education, difficulties they faced in accessing student loans, and stress regarding academic performance, securing a job and loan repayment. It also allows us to compare the two groups of students (borrowers and non-borrowers) to examine who is in a better position in terms of academic performance, stress, and labour market outcomes. It was quite important to investigate these issues via interviews to validate the quantitative findings and get a comprehensive understanding of students' problems.

Delhi is chosen as the site of present study on the following grounds. First, it represents a mix of public and private institutions offering professional courses, including the institutes of national importance like Indian Institute of Technology (IIT) and National Institute of Technology (NIT). Second, the national capital attracts a significant population of students from all over India, owing to the expectations of getting quality education and labour market opportunities. According to National Institutional Ranking Framework (NIRF, 2020), Delhi has several top engineering (seven in number) and management institutions (seven in number). Also, being one of India's megacities, Delhi is ranked 4th city in the country regarding youth employability and 5th in terms of a preferred place to work by youth (India Skills Report, 2020). Third, there are recent policy changes by the Government of NCT of Delhi regarding HE loan scheme to encourage students to pursue HE. The government approved the "*Higher Education and Skill Development Guarantee Scheme"* in October 2017.[9] Under the scheme, students from Delhi who wish to pursue higher education can apply for a loan up to ₹10 lakh without any collateral or third-party guarantee, with the government as guarantor.[10] Also, the students would be eligible irrespective of their family income status and will be given a moratorium period (course duration plus one year) to find a job

[9] Detailed discussion on this scheme is done in Chapter 5 (p.125).

[10] More details regarding the scheme are available at https://edistrict.delhigovt.nic.in/eDownload/FaqForm/Faq_3005.pdf (accessed 3rd April 2022).

before they start to repay. Therefore, the heterogeneity in institutions, student socioeconomic settings, and policy initiatives would help to understand the complexity of the student loan market in Delhi.

Sample Details

The survey collected data from 1,508 students in 18 professional higher education institutions in Delhi. Of the total sample students, 13.4% of students (202 in number) were from central government institutions, 47.6% were from state government institutions (718 in number), and 39% were enrolled in private institutions (588 in number). Course-wise distribution of the sample is presented in Table 3.1. It reveals that around 79% (1192 in number) were enrolled in BTech courses, and the rest 21% (316 in number) were pursuing management courses, i.e., MBA or PGDM (see Table 3.1).[11]

Table 3.1: Institution-wise Number of Students Surveyed for the Study

College Name	Type	Students Surveyed[12]		
		Engineering	Management	Total
1. Indian Institute of Technology (IIT)	Central Govt	30	15	45
2. Jamia Milia Islamia (JMI)	Central Govt	33	0[#]	33
3. Indian Institute of Foreign Trade (IIFT)	Central Govt	***	48	48
4. National Institute of Technology (NIT)	Central Govt	76	***	76
Sub-Total (Central Government)		**139**	**63**	**202**
5. Guru Gobind Singh IP University (Campus)	State Govt	79	40	119
6. Ambedkar Institute of Adv Communication Technology & Research (NSUT-East)	State Govt	86	***	86
7. Ch. Brahm Prakash Govt. Engineering College (NSUT-West)	State Govt	104	***	104

[11] The reason behind small share of management students lies in the fact that the total enrolments in Delhi in these courses are less than the engineering enrolment (see Table A3.1 in appendix). Considering the student enrolments at the time of survey, the sample of this study represents around 7.9% of the total targeted students – including 8.3% representation from engineering courses and 6.7% from management courses.

[12] While some institutions offer both BTech and MBA/PGDM courses, some only offer either BTech or MBA/PGDM courses. Zero sample in some institutions represents that these institutions do not offer that particular course.

8. Netaji Subhash University of Technology (NSUT-Main)	State Govt	172	0[#]	172
9. Delhi Technological University	State Govt	72	59	131
10. Bhai Parmanand Institute of Business Studies	State Govt	***	15	15
Sub-Total (State Government)		**596**	**122**	**718**
Total Government (State + Central)		**735**	**185**	**920**
11. Indraprastha Institute of Information Technology	Pvt-aided	42	***	42
12. Jamia Hamdard	Pvt-aided	41	8	49
Sub-Total (Private-aided)		**83**	**8**	**91**
13. Fore School of Management	Pvt-unaided	***	26	26
14. Guru Tegh Bahadur Institute of Technology	Pvt-unaided	109	***	109
15. Maharaja Agrasen Institute of Technology	Pvt-unaided	276	11	287
16. Maharaja Surajmal Institute of Technology	Pvt-unaided	72	***	72
17. Banarsidas Chandiwala Institute of Professional Studies	Pvt-unaided	***	50	50
18. FOSTIIMA Business School	Pvt-unaided	***	44	44
Sub-Total (Private-unaided)		**457**	**131**	**588**
Total Private (Aided + Unaided)		**540**	**139**	**679**
Grand Total (Government + Private)		**1192**	**316**	**1508**
Student Enrolment at the time of survey[##]		14324	4701	19025
% Share of Sample to total Student Enrolment		8.32	6.72	7.93

Source: Compiled by the research scholar based on the data collected through primary survey.
#Institution offers that course, but no students were covered in the primary survey.
***Institution does not offer that particular course.
##Compiled from AICTE database. Includes final year MBA/PGDM students and 3rd & 4th year BTech students.

Socioeconomic profile of professional graduates covered in this study shows that of the total students, 82.5% are male (1244 in number), their share being 88.3% in engineering courses and 60.4% in management courses (see Table 3.2). By social groups, a large share of students (64.3%) was from upper castes (UCs), followed by 22.2% from other backward classes (OBCs), 11.4% from scheduled castes (SCs) and 2.1% from scheduled tribes (STs). Similarly, differences exist in distribution by religious groups such as Hinduism, Islam, Christianity, Sikhism, Jainism, and others. The highest share is of Hindus (87.4%), followed by Muslims (6.4%) and other minority groups making up 6.2%. Further, more than three-fourths of the students belong to urban regions

(native place) and the rest one-fourth from rural setups (352 in number).[13] Around 22.9% of the students belong to poorest family income quintile (346 in number) and around 17.4% belong to the highest income quintile, i.e., Q5 (see Table 3.2).

Table 3.2: Sample Student Distribution by Socioeconomic Factors

	Engineering			*Management*			*Overall*			*Absolute*
	Govt	Pvt*	Total	Govt	Pvt	Total	Govt	Pvt	Total	*Number*
Gender										
Female	9.3	14.7	11.7	33.1	45.7	39.6	13.7	22.1	17.5	(264)
Male	90.7	85.3	88.3	66.9	54.3	60.4	86.3	77.9	82.5	(1244)
Caste										
ST	4.0	0.2	2.4	2.6	0.0	1.3	3.7	0.2	2.1	(32)
SC	13.9	12.4	13.3	6.5	2.5	4.4	12.5	10.0	11.4	(172)
OBC	32.0	12.8	23.7	22.1	11.7	16.8	30.1	12.5	22.2	(335)
UC	50.2	74.6	60.7	68.8	85.8	77.5	53.6	77.3	64.3	(969)
Location										
Rural	34.2	14.5	25.7	16.2	13.0	14.6	30.8	14.2	23.3	(352)
Urban	65.8	85.5	74.3	83.8	87.0	85.4	69.2	85.8	76.7	(1156)
Religion										
Hindu	87.7	87.0	87.4	86.4	88.3	87.3	87.5	87.3	87.4	(1318)
Muslim	8.7	4.7	7.0	3.9	4.9	4.4	7.8	4.7	6.4	(97)
Others	3.6	8.3	5.6	9.7	6.8	8.2	4.7	8.0	6.2	(93)
Income Quintile										
Q1 (Poorest)	30.3	21.7	26.6	9.1	9.3	9.2	26.4	18.7	22.9	(346)
Q2	20.4	25.8	22.7	24.0	27.2	25.6	21.1	26.1	23.3	(352)
Q3	13.6	13.8	13.7	18.2	16.1	17.1	14.5	14.3	14.4	(217)
Q4	20.4	24.4	22.2	21.4	21.0	21.2	20.6	23.6	22.0	(331)
Q5 (Richest)	15.2	14.3	14.9	27.3	26.5	26.9	17.5	17.3	17.4	(262)
Total	100	100	100	100	100	100	100	100	100	(1508)

Govt=Government; Pvt=Private; *Private institutions include aided and unaided institutions.
Source: Compiled by the research scholar based on the primary survey data.

The survey covered four central government professional HEIs, eight state government institutions, and six private-unaided institutions. A brief description of these institutions covering information about the courses offered, enrolments, faculty, and admission procedure is given here.

[13] Location here refers to the native location of the students from where they belong.

Central Government Institutions

IIT Delhi has 23 departments and research centres in the area of engineering, natural sciences, management, humanities, and social sciences. It offers BTech in mechanical engineering, civil engineering, electrical engineering, computer science and engineering (CSE), chemical engineering, production and industrial engineering, and textile technology. IIT Delhi offers a wide range of engineering courses, some of which are brand new and not provided by any other engineering college in Delhi. For example, 'Sensors, Instrumentation and Cyber-Physical Systems Engineering', 'Materials Science and Engineering,' and 'Textile and Fibre Engineering.' Apart from engineering, the Department of Management Studies (DMS IIT-Delhi) offers a two-year full-time MBA course. The department was set up in 1993 by an amendment of IIT Delhi statutes. It also offers a three-year on-campus evening MBA programme with a focus on Technology Management. In the academic year 2020-21, around 875 students were admitted, including 581 students in BTech courses and 112 in MBA courses, with a faculty strength of 694 (IIT Delhi Annual Report 2020-21).[14] Current survey covers 45 students from IIT Delhi – 30 BTech students and 15 MBA students.

National Institute of Technology (NIT), Delhi, was established in 2010 by an act of parliament and is declared an Institute of National importance. It is one of ten NITs established by the MoE, Government of India, during the 11th Five Year Plan. It offers courses in various disciplines of engineering, science and technology, management, social sciences, and humanities. NIT Delhi started its first academic session in 2010 with three BTech degree programmes in CSE, electrical and electronics engineering (EEE), and electronics and communication engineering (ECE). Half of the seats are reserved for students from Delhi and Chandigarh, and the remaining are based on All India ranking in entrance tests. Admissions for BTech courses are made based on Joint Entrance Examination[15] (JEE) and admissions to MTech courses are made based on the ranking in GATE (Graduate Aptitude Test in Engineering). In 2018-19, there were a total of 49 faculties in various departments in NIT-Delhi. Further, around 256 students were admitted this

[14] Available at: http://rti.iitd.ac.in/sites/default/files/inst_manuals/AR-2020-10E.pdf (Accessed 2nd April 2022).

[15] Visit www.jee.iitk.ac.in for more information on eligibility criterions (in terms of qualifying examination, age, number of attempts, etc.).

year, including 182 students at the undergraduate level (UG), 56 at the postgraduate level (PG), and 18 at the Doctor of Philosophy level, i.e., PhD (NIT Delhi Annual Report 2018-19).[16] The sample of this study includes 76 BTech students from NIT Delhi.

Jamia Millia Islamia (JMI) is a central university in New Delhi, originally established in Aligarh, Uttar Pradesh, in 1920. It was moved to its current location (Okhla, New Delhi) in 1935. While University Grants Commission (UGC) gave it a deemed status in 1962, it became a central university in 1988. With over nine faculties and twenty centres, JMI offers a range of undergraduate, diploma, certificate, postgraduate, and research programmes. One of them is the *Faculty of Engineering and Technology*, which was established in 1985 and offers BTech programs in several disciplines. Major UG courses are offered in electrical engineering, mechanical engineering, civil engineering, communication engineering, and CSE. Further, the university established *Centre of Management Studies*, which started offering a full-time MBA course in 2003-04. With a faculty count of 741 in 2020-21, around 6,617 students got admission into various courses, including 794 students in diploma courses, 2,798 students at the UG level, and 2,648 students at the PG level (JMI Annual Report 2020-21).[17] This study covers 33 BTech students from the school of engineering, JMI.

Indian Institute of Foreign Trade (IIFT) was established in 1963 by the Ministry of Commerce & Industry to contribute to the skill building for the external trade sector of India. It is an autonomous body that aims to provide professional education in modern management techniques and conduct high-quality research relevant to international business and world trade. The institute was granted 'Deemed to be University' status in 2002. It offers a wide range of certificate programmes, diplomas, MBA and PhD in management, international business, and economics. In 2020-21, IIFT awarded degrees, diplomas, and certificates to 604 students, and the

[16] Available at: https://nitdelhi.ac.in/wp-content/uploads/2021/07/Annual-Report-2018-19.pdf (Accessed 10th November 2021). This is the latest available annual report as on 2nd April 2022.

[17] Available at: https://www.jmi.ac.in/upload/menuupload/university_annual_report_english_2020_2021.pdf (Accessed 2nd April 2022).

faculty count was 74 in various departments (IIFT Annual Report 2020-21).[18] This study covers 48 MBA students from IIFT.

For engineering admissions, two of the three central government institutions (IIT and JNU) admit undergraduate engineering students based on JEE scores; JMI conducts its own entrance test. For MBA admissions, all the central government institutions included in the survey (IIT, NIT, JNU, JMI, and IIFT) admit students based on their Common Admission Test (CAT) scores. All five institutions follow the reservation policy of the Government of India in admission, wherein 15% of seats are reserved for SCs, 7.5% for STs, 27% for OBCs (non-creamy layer), 10% for Economically Weaker Sections (EWS), and 3% for persons with disabilities (PWD). In JMI, 30% of the total seats in each program are reserved for Muslim applicants, followed by 10% for Muslim women, 10% for Muslim OBCs, and 5% for PWD (JMI Admission Prospectus, 2022-23).[19]

State Government Institutions

Delhi Technological University (DTU), formerly known as Delhi College of Engineering (DCE), is an institution of the Delhi Government. It was established in 1941 as Delhi Polytechnic and started giving degrees after being affiliated to University of Delhi in 1952. The Delhi School of Management (DSM) was founded in 2009 after DCE was granted university status and officially renamed as DTU through a legislature. DTU offers UG engineering programmes in a wide range of subjects, with a mix of traditional disciplines (civil, mechanical, and electrical) and IT-related disciplines (information technology, computer science, electronics, and communication). In 2019-20, 3,595 students were admitted at different level programmes making the total student enrolment of 12,196 across 15 departments and centres (DTU Annual Report 2019-20).[20] Of the total enrolments, 8,840 students were enrolled in BTech courses and 493 were pursuing MBA courses. Total faculty count during 2019-20 was 369, with around 53 non-academic staff (ibid). Current survey covers 131 students from DTU – 72 BTech students and 59 MBA students.

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[18] Available at: https://www.iift.ac.in/iift/docs/report/15.pdf (Accessed 2nd April 2022).

[19] Available at: http://jmicoe.in/pdf22/PROSPECTUS%202022-23%20(12.04.2022).pdf (Accessed 22nd May 2022).

[20] Available at: http://www.dtu.ac.in/Web/IQAC/ar/pdf/ar19-20.pdf (Accessed 2nd April 2022). This is the latest available annual report as on 2nd April 2022.

Netaji Subhas University of Technology (NSUT), previously known as Netaji Subhas Institute of Technology (NSIT), is a state university located in Dwarka, New Delhi. The institute was established in 1983 and was given a university status under the Delhi Act 06 of 2018. NSUT was ranked 11 in Outlook India's Top 150 Engineering Colleges and 22 in The Week-Hansa Research's Best Colleges Survey 2019. It offers several UG programmes in CSE, information technology (IT), ECE, manufacturing process and automation engineering, instrumentation and control engineering, and biotechnology. Further, the university established the Department of Management Studies (DMS) in 2006. The department offers elective courses in diverse domains of management to students at NSUT. From 2019 onwards, DMS started offering undergraduate (BBA), postgraduate (MBA), and PhD programmes in management. After upgradation to university, the total student intake is 1,254 students at the UG level, 113 at the PG level, and 63 at the PhD level. Further, there are 253 faculties in various departments (NSUT Annual Report 2019-20).[21] The present survey covers 172 BTech students from NSUT main campus.

In 2020, Government of NCT of Delhi expanded NSUT into two more campuses, namely East Campus and West Campus. The East Campus, formerly '*Ambedkar Institute of Advanced Communication Technologies & Research*,' was a public engineering college located in Geeta Colony, which took possession in 2005 and started operating in 2008. Its vision is to become an Institute of Excellence in the field of postgraduate engineering. It currently offers four MTech courses: information security, digital communication, signal processing, and RF and microwave engineering. Similarly, the West Campus, formerly '*Ch. Brahm Prakash Government Engineering College'* was established in 2007 by Department of Training and Technical Education, Government of NCT of Delhi. The government also approved the creation of a Centre of Advanced Studies and Research for Disaster Mitigation Management, Environmental Monitoring, and Forecasting on the college campus. It currently offers BTech in four departments – civil engineering, IT, mechanical engineering, and applied sciences and humanities. Current survey covers 104 BTech students from NSUT west campus and 86 BTech students from NSUT east campus.

[21] Available at: https://drive.google.com/file/d/1QT5E--cA9tjP6i1eFuQWbqjsz7nY6Vrt/view (Accessed 2nd April 2022). This is the latest available annual report as on 2nd April 2022.

In all the state government institutions in Delhi (including NSUT and DTU), 85% of the total seats are reserved for candidates belonging to Delhi region – students passing the qualifying examination from recognised boards/colleges/institutions located within the NCT of Delhi. And the rest 15% for those from outside Delhi region – students passing the qualifying examination from recognised boards/ colleges/institutions located outside the NCT of Delhi. The reservation of seats for SCs and STs in both universities is as per the guidelines of Government of India, i.e., 15% of the total seats are reserved for SCs and 7.5% for STs. The reservation to OBCs is provided as per the policy of the Government of NCT of Delhi.[22] While the admissions to BTech programs in NSUT and DTU are based on JEE exam scores, CAT scores are considered for admitting students to MBA courses.

Jamia Hamdard is a private-aided university in Delhi, established in 1989. It was founded by Hakeem Abdul Hameed, a visionary and eminent Unani physician whose life aim was to encourage professional education among Indian Muslims and spread the Unani system of medicine to treat human illnesses. He established several teaching and research institutions, which were later merged into Jamia Hamdard and given the status of 'deemed to be university' by MHRD, Government of India, in 1989. The university was awarded the Institute of Eminence status by MHRD in 2019. It offers a wide range of courses in different disciplines (medicine, physical sciences, engineering & technology, humanities & social sciences, legal studies, commerce, psychology, and management) ranging from diploma to PhD level. Some of these courses are exclusive and not provided by any other professional institutions in Delhi. We covered 49 students from Jamia Hamdard University in the primary survey – including 41 BTech students and 8 MBA students.

Indraprastha Institute of Information Technology (IIIT Delhi) was founded in 2008 as an autonomous state university by an act of Delhi legislature (IIIT Delhi Act, 2007). Initially, it started operating at NSUT campus and moved to its present permanent campus in August 2012. It is a

[22] Reservation of seats for OBCs varies between state and central government professional institutions in Delhi. While centrally funded institutes follow the central government reservation policy (27% of the total intake), institutions under Delhi government follow the reservation policy of the government of NCT of Delhi (15% of the total intake). Details available at http://tte.delhigovt.nic.in/seats-reservations (accessed 2nd April 2022).

research-oriented institute with a focus on Computer Science and allied areas. It offers BTech, MTech, and PhD programs in various fields, including ECE, CSE, computational biology, mathematics, social sciences and humanities, and human-centred design. Admissions to BTech programs are based on performance in JEE exam for Indian nationals and through Direct Admission of Students Abroad (DASA) for foreign nationals. Similarly, MTech admissions are made based on GATE score and BTech percentage. In 2020-21, there were 104 faculty and 875 students were admitted – including 581 students in BTech, 228 students in MTech, and 66 students in PhD (IIIT Annual Report, 2020-21).[23] This study covers 42 BTech students from IIIT-Delhi.

Fore School of Management (FSM) is a private-unaided business school established by Foundation for Organizational Research and Education (FORE) in 1981. It was initially founded as a research centre but started offering postgraduate education programmes in management from 1994-95 onwards. FSM is recognised by Association of Indian Universities, AICTE, and Association of Management Development Institutes of South Asia. It offers PGDM courses, declared equivalent to MBA by AICTE, in various fields such as general management, human resource, finance, marketing, operations, information technology, economics, and international business. Admissions are made based on performance in the CAT, graduate management admission test (GMAT) or Xavier aptitude test (XAT). In the recent NIRF ranking 2021, FSM was ranked 43 among management schools in India. In 2020-21, there were 36 faculties, and 397 students were admitted to PGDM courses (AICTE, 2021). The primary survey of this study covers 26 PGDM students from FSM.

FOSTIIMA Business School (FBS) is a private-unaided business school established in 2007. It is an initiative of the alumni of IIM Ahmedabad that aims to deliver excellence in management education. FOSTIIMA stands for 'Friends of Seventy-Three (Nineteen) of Indian Institute of Management, Ahmedabad.' FBS is approved by AICTE and MoE, and offers PGDM in marketing, finance, human capital management, operations, and international business. Some other cutting-edge subjects include business analytics, digital marketing, latest trends in marketing,

[23] Available at: https://www.iiitd.ac.in/sites/default/files/docs/about/Annual%20Report%202020-2021.pdf (accessed 2nd April 2022).

and emerging technologies. In 2020-21, there were 32 faculties, and 208 students were admitted to PGDM courses (AICTE, 2021). This study includes 44 PGDM students from FBS.

Sample Institutions Affiliated to GGSIPU

The remaining five institutions offering engineering and/or management courses (one state government and four private) covered in the survey are affiliated with Guru Gobind Singh Indraprastha University (GGSIPU). It was established in 1998 by the government of NCT of Delhi and recognised by the UGC. Formerly known as Indraprastha University (IPU), it was officially renamed in 2001 as GGSIPU after the tenth Sikh Guru Gobind Singh. The university was founded as a teaching and affiliating university in the emerging areas of professional and technical education. It offers almost 50 courses of study in diverse disciplines such as engineering & technology, medicine, business management, nursing, pharmacy, education, and law – in more than 120 affiliated colleges. It is important to mention that besides covering the five affiliated institutions, students enrolled in main university campus departments (both BTech and MBA) were also surveyed. These include two schools, namely (i) university school of information, communication & technology, wherein 79 BTech students were surveyed; and (ii) university school of management studies, wherein 40 MBA students were surveyed. GGSIPU offers admission in BTech courses based on JEE score, except for BTech in Biotechnology discipline, for which admission is through IPU Common Entrance Test (CET). Similarly, MBA admissions are made based on CAT/CMAT score.

Bhai Parmanand Institute of Business Studies (BPIBS) was set up by the Government of NCT of Delhi in 1965. It was recognised as a polytechnic of technical education department and was given independent institute status in 1972, and was renamed as Institute of Commercial Practice. Further, it was named after Sikh Martyr Bhai Parmanand, in 1986. It is approved by AICTE and Directorate of Training and Technical Education. The institute is affiliated to GGSIPU and offers various UG and PG level courses in business and management. Admissions to PG courses are made based on the CET conducted by GGSIPU every academic year. Total student intake of BPIBS in MBA programmes is 40 for academic year 2021-22 (AICTE, 2021). The primary survey covers 15 MBA students from this institute.

Guru Tegh Bahadur Institute of Technology (GTBIT) is a private engineering college approved by AICTE and affiliated to GGSIPU. It was established by the Delhi Sikh Gurdwara Management Committee in 1999 and named after the 9th Sikh Guru, Guru Tegh Bahadur. It offers degree-level engineering courses in CSE, EEE, ECE, and IT. In academic year 2021-22, there are 96 faculties, and the total student intake is 600 in BTech programmes (AICTE, 2021). Current survey covers 109 BTech students from GTBIT.

Banarsidas Chandiwala Institute of Professional Studies was set up in 2008 under the aegis of Shri Banarsidas Chandiwala Sewa Smarak Trust Society working in the field of health and education since 1952. The institute is affiliated with GGSIPU and offers UG and PG-level programmes in management. While the admissions to BBA courses are made through CET of GGSIPU, it takes MBA admission based on the performance in CAT conducted by Indian Institute of Management. In academic year 2021-22, there are 20 faculties, and the total student intake is 120 for MBA programmes (AICTE, 2021). The sample of this study includes 50 MBA students from this institute.

Maharaja Agrasen Institute of Technology (MAIT) was established by the Maharaja Agrasen Technical Education Society in 1999. A group of well-known industrialists, merchants, professionals, and philanthropists formed the society with the aim of fostering quality education in the field of technology. The institute is approved by AICTE and affiliated to GGSIPU. It has six engineering departments: CSE, EEE, ECE, mechanical, mechanical and automation, and IT. In 2004, the institute established the Department of Management Studies to offer a full-time MBA programme in finance, marketing, and human resource management. In academic year 2021-22, there are 264 faculties, and the total student intake is 1,140 in BTech programmes and 180 in MBA programmes (AICTE, 2021). Primary survey of this study covers a substantial portion of sample students from MAIT, i.e., 287 students – 276 BTech students and 11 MBA students.

Maharaja Surajmal Institute of Technology (MSIT) is a private self-financing institution that was set up by Surajmal Memorial Education Society in the year 2001. It is approved by AICTE and affiliated to GGSIPU. MSIT offers BTech in EEE, ECE, CSE and IT. It runs in two shifts, i.e., morning and evening. In academic year 2021-22, there are 160 faculties, and the total student

intake is 660 in BTech programmes (AICTE, 2021). Current survey covers 72 BTech students from MSIT.

3.2 Methodology

The data was processed using STATA-14 software. We used descriptive statistics and econometric models for the analysis. Descriptive statistics helped in examining the pattern of socioeconomic and institutional inequalities in household spending on education, student loan access and labour market outcomes of PHE graduates. Further, econometric models are used to analyse the determinants of household spending, student loan access, employment, and earnings of PHE graduates. The econometric models used in specific chapters are discussed in this section.

Determinants of Household Spending on PHE in Delhi (Chapter 4)

We examine the potential determinants of household spending on PHE in Delhi using *Ordinary Least Square (OLS) regression* model.[24] The major equation used to estimate the household expenditure function is as follows:

$$lnhhexp\_PHE = \alpha + \beta_i X_i + \varepsilon \qquad \ldots(3.1)$$

where,

lnhhexp_PHE = Natural logarithm of annual average household expenditure on PHE in Delhi

α is the intercept term

β_i = regression coefficients that measure the influence of explanatory variables on household expenditure on PHE

X_i = explanatory variables include socioeconomic (gender, caste, religion, family income, house ownership, father education, and part-time job) and institutional factors (institution type, course, place of stay, scholarship, student loan, co-curricular activities, and private tuition)

ε is the error term

[24] The choice of explanatory variables in this study are made based on the extensive literature reviewed on the issue.

We estimate *five OLS regression equations* to examine the heterogeneity in the determinants of household spending on PHE in Delhi. Besides the overall equation, separate regression equations are estimated by type of institution (government and private) and course (engineering and management). Further, we run a stepwise *OLS regression* to check the robustness of the results in all five equations. For this, we include only socioeconomic variables in *Model 1*, only institutional variables in *Model 2,* and all the explanatory variables in *Model 3*. Additionally, we have estimated the *heteroscedasticity-consistent OLS model* to validate the robustness.

Determinants of Demand & Cost of Pre-admission Coaching among PHE graduates in Delhi (Chapter 4)

We use a two-step *Heckman selection model* (Heckman, 1979) to estimate the determinants of demand and cost of pre-admission coaching (PAC) among PHE graduates in Delhi.[25] This econometric model considers a two-part process in decision-making. We generate two dependent variables. First, the decision to access PAC *(stage 1, selection model)* and second, the household expenditure on PAC in logarithmic form *(stage 2)*. The rationale behind using Heckman selection model is to overcome the issue of sample selection bias while examining the determinants of household spending on PAC. For instance, students who did not attend any PAC spent zero on it, and therefore using whole sample for executing OLS regression is not appropriate.

Further, to identify the selection model, it is essential to include at least one instrument variable in the selection equation, which is not included in the expenditure equation. If the explanatory variables are same in both equations, there is usually collinearity between the predicted inverse Mills ratio and the determinant variable of the expenditure equation. Thus, we construct one instrumental variable (marks secured by the student in senior secondary) that is assumed to affect only the decision of whether to attend PAC and not the decision of how much to spend on it. The instrumental variable *(xii_marks)* is a binary variable that takes the value '1' if the student has secured more than 80% marks in the senior secondary exam and '0' otherwise.

[25] This method is used by several scholars the area of economics of education (Kingdon 2005; Himaz 2009; Azam and Kingdon 2013; Azam, 2016; Datta & Kingdon 2019; Mandikiana 2021; Choudhury & Kumar, 2021).

The econometric specification of the two-step Heckman selection model is as follows, as used by Azam (2016):

$$P(z = 0|x_1) = 1 - \emptyset\,(x_1\gamma) \qquad \ldots(3.2)$$

$$\log(z) \mid x_2, z > 0 \sim Normal\,(x_2\beta, \sigma^2) \qquad \ldots(3.3)$$

where,

z is the household expenditure on pre-admission coaching

x is a vector of explanatory variables that include socioeconomic (gender, caste, religion, family income, sibling, homeownership, and father education) and institutional factor (course)

$\gamma\ and\ \beta$ are the parameters to be estimated

σ is the standard deviation of *z*

Equation 3.2 shows the probability that the household spending on PAC (z) is positive or zero and Equation 3.3 specifies that conditional on $z > 0,\ z|x_2$ follows a lognormal distribution. An estimate of γ is obtained from a *probit* using *z* = 0 versus *z* > 0 as the binary response. Due to the assumption that conditional on *z* > 0, log(*z*) follows a classical linear model, the OLS estimator β is consistent, and the consistent estimator of σ is just the usual standard error from the OLS regression. We estimate separate equations for graduates enrolled in government and private institutions to examine the heterogeneity in the predicted probabilities of attending PAC and spending thereon.

Determinants of Access to Student Loans among PHE Graduates in Delhi (Chapter 5)

We use the *logit regression model* to analyse the determinants of access/demand for student loans among PHE graduates in Delhi. We generate a binary variable *(applied_loan)* which takes the value '1' if the student applied for a student loan for the current course and '0' otherwise. The information on several individual and household factors collected in this survey enabled us to examine the heterogeneity in access/demand for student loans among PHE graduates. The econometric specification of the model is as follows:

$$Y = \alpha + \beta gender + \gamma caste + \rho lnfamily\_income + \delta course + \lambda inst\_type + \theta \boldsymbol{X} + \varepsilon \quad \ldots (3.4)$$

where,

α is the intercept

$\beta, \gamma, \delta, \rho \; and \; \lambda$ are the coefficients of the main explanatory variables

$\boldsymbol{\theta}$ is the coefficient vector of the other control variables.

$\boldsymbol{X}$ is the vector of other control explanatory variables that affects access/demand for student loans. These include the number of siblings, homeownership, father occupation, marks in senior secondary, part-time job, and college-bank tie-up.[26]

ε is the error term.

The main variables of interest in our analysis are gender of the student (*gender*), caste of the student (*caste*), family income (*lnfamily_income*), course (*course*) and type of institution *(inst_type)*. We estimate three logit regression equations to examine the heterogeneity in the determinants of demand for student loans. We start by considering all explanatory variables in the logit model *(Equation 1)*. Second, we analyse how the gender and institutional gap manifestation in student loan access vary with family's economic status. To do this, we incorporate additional interaction terms between *gender* and family income *(Equation 2)* and between *inst_type* and family income *(Equation 3)*. Additionally, we run a *probit regression model* to check the robustness of logit estimates.

Determinants of Student Loan Amount Received by Beneficiaries (Chapter 5)

We examine the potential determinants of student loan amount received by PHE applicants in Delhi using the *Ordinary Least Square (OLS) regression* model. The major equation used to estimate the loan amount function is as follows:

[26] Notation and definitions of the variables used in econometrics models are given in Table A3.2 in appendix of this chapter (p.75).

$$lnSL\_amt\_sanctioned = \alpha + \beta_1 gender + \beta_2 caste + \beta_3 lnfamily\_income + \beta_4 personal\_loan + \beta_5 course + \beta_6 inst\_type + \beta_7 xii\_marks + \beta_8 application\_mode + \varepsilon \quad \ldots (3.5)$$

where,

lnSL_amt_sanctioned = Natural logarithm of the average loan amount sanctioned by the commercial banks

α is the intercept term

β_i = regression coefficients that measure the influence of explanatory variables on loan amount sanctioned by the commercial banks

ε is the error term

We estimate *three OLS regression equations* to examine the heterogeneity in the determinants of student loan amount sanctioned by commercial banks to PHE applicants in Delhi. Besides the overall equation *(Equation 1)*, separate regression equations are estimated for engineering *(Equation 2)* and management students *(Equation 3)*. Further, we run the *heteroscedasticity-consistent OLS model* to check the robustness of the results in all three equations.

Student Loans & Labour Market Outcomes of PHE Graduates in Delhi (Chapter 6)

We analyse the determinants of employment and earnings of PHE Graduates in Delhi using Heckman selection model. This addresses the question of who all get jobs through campus recruitment drives and how much salary they get. We examine this by considering student loan borrowing as a cross-cutting point. For example, we examine difference in the employment probabilities and salaries offered between student loan borrowers and non-borrowers. We also incorporate an additional interaction term between marks secured by the student in the last semester and student loan take-up. This is done to explore how the effect of SL borrowing on employment probabilities of graduates varies by marks secured. For the analysis, those who have received job offers are considered employed in the present analysis, and those who did not get any job offer (at the time of survey) are taken as unemployed. Similarly, the annual package offered to them is taken as their actual earnings from the job. The Heckman model considers two dependent

variables. First, ‘whether the student was offered a job or not’ *(placement)* as the dependent variable in the first step *(Stage 1, selection model)* and ‘salary offered’ (*lnSalary_offered*) in logarithmic form in the second step *(Stage 2)*.

The econometric specification of this model is similar to Equations 3.2 and 3.3, though there is difference in the choice of explanatory and instrumental variables.

In the model,

z is the salary offered to the student in campus placement

x is a vector of explanatory variables that include socioeconomic (gender, caste, religion, native location, and family income), financial (student loan, other personal loans, and part-time job) and institution factors (institution type, course and marks secured in the previous semester)

$\gamma \; and \; \beta$ are the parameters to be estimated

σ is the standard deviation of z

To identify the selection model, we construct an instrumental variable (*future_plan*) that is assumed to affect only the employment probability of PHE graduates and the salary offered to them. The instrumental variable *future_plan* is a binary variable that takes the value ‘1’ if the student plans to do a job after completing the current course and ‘0’ if he/she plans for further studies. We estimate *three Heckman equations*, i.e., for the overall sample, engineering students, and management students. We use several predictors to explain the determinants of employment and earnings of PHE Graduates in Delhi.

It is important to mention that an attempt is also made to see the relationship between different explanatory variables using the simple correlation coefficient. The rationale is to supplement the estimates of different regression models in this study. The inter-correlation matrix is given in Table A3.4 in the appendix of this chapter, which shows the value and significance level of the correlation coefficients.

Appendix to Chapter 3

Table A3.1: Growth of Engineering & Management Institutions in Delhi (2012-13 to 2020-21)

Year	*Engineering*			*Management*			*Total*		
	Institution	Intake	Enrolment	Institution	Intake	Enrolment	Institution	Intake	Enrolment
2012-13	18	7532	7252	39	10193	6237	57	17725	13489
2013-14	18	9007	7116	42	10464	6318	60	19471	13434
2014-15	16	8965	7795	42	10799	6078	58	19764	13873
2015-16	18	9265	8701	42	10109	6351	60	19374	15052
2016-17	16	8455	8093	41	10076	6418	57	18531	14511
2017-18	18	9195	7798	41	9956	6684	59	19151	14482
2018-19	17	9098	6972	41	10166	5743	58	19264	12715
2019-20	17	9698	7625	41	8167	4469	58	17865	12094
2020-21	17	10209	6699	44	8587	4701	61	18796	11400

Source: AICTE Database https://facilities.aicte-india.org/dashboard/pages/dashboardaicte.php (accessed on 2nd April 2022)

Table A3.2: Notation and Definition of the Variables used in the analysis

Name	Definition
Dependent Variables (for different econometric models)	
lnhhexp_PHE	Log of Household spending on PHE
PAC	0, if the student did not take pre-admission coaching 1, if the student took pre-admission coaching
lnPAC_exp	Log of Household spending on entrance coaching
loan_applied	0, if the graduate did not apply for a student loan 1, if the graduate applied for a student loan
lnloan_amt_sanction	Log of Student Loan Amount Sanctioned by the Bank
placement	0, if the student did not secure campus placement 1, if the student secured campus placement
lnsalary_offered	Log of Salary offered to the student
Explanatory Variables	
gender	0, if the student is Female 1, if the student is Male
caste	1, if the student is Scheduled Tribe (ST) (Ref.) 2, if the student is Scheduled Caste (SC) 3, if the student is Other Backward Caste (OBC) 4, if the student is Upper Caste (UC)
religion	1, if the student is Hindu (Ref.) 2, if the student is Muslim 3, if the student belongs to other religions
location_native	0, if the student belongs to a rural area 1, if the student belongs to an urban area
place_stay	1, if the student stays at home 2, if the student stays in a hostel 3, if the student stays at any other accommodation
lnfamily_income	Log of Annual Family Income
sibling	Number of Siblings
scholarship	0, if the student is not receiving any scholarship 1, if the student is receiving a scholarship
father_education	Years of schooling of student's father
father_occup	1, if the student's father does a government job 2, if the student's father does a private job 3, if the student's father is self-employed

	4, if the student's father is engaged in other employment
own_house	0, if the student's family does not own a house 1, if the student's family owns a house
own_land	0, if the student's family do not own land 1, if the student's family own land
pvt_tution	0, if the student attends private tuition 1, if the student does not attend private tuition
inst_type	0, if the student is enrolled in a govt institution 1, if the student is enrolled in a private institution
course	0, if the student is pursuing an engineering course 1, if the student is pursuing a management course
xii_marks	0, if the student secured less than 80% 1, if the student secured more than 80%
marks_ prev_sem	0, if the student secured less than 80% in previous semester 1, if the student secured more than 80% in previous semester
part_time_job	0, if the student is not doing a part-time job 1, if the student is doing a part-time job
student_loan	0, if the graduate did not take a student loan 1, if the graduate took a student loan
personal_loans	0, if the student/family did not take any other personal loan 1, if the student/family took any other personal loan
sl_awareness	0, if the student was not aware of student loan schemes 1, if the student was aware of student loan schemes
clg_tieup_loan	0, if student's institution does not have bank tie-ups for loan 1, if student's institution has bank tie-ups for loan
cc_activities	0, if the student does not participate in co-curricular activities 1, if the student participates in co-curricular activities
aftercourse_plan	0, if the student plans to pursue further studies after current course 1, if the student plans to do a job after the current course

Table A3.3: Profile of Engineering & Management Institutions in Delhi (2020-21)

Institution Name	Establish Year	Type	Courses Offered	Intake	Enrolment
Central Government					
1. University of Delhi (FMS + Commerce Department**)**	1954	Government	MBA	431	-
2. Indian Institute of Technology*	1961	Government	BTech	1209	1197
			MBA	148	148
3. Indian Institute of Foreign Trade (IIFT)*	1963	Government	MBA	60	-
4. Jawaharlal Nehru University	1969	Government	BTech	126	126
			MBA	40	40
5. Jamia Milia Islamia*	1983	Government	BTech	700	341
			MBA	60	60
6. National Institute of Technology (NIT)*	2010	Government	BTech	182	182
Government of NCT of Delhi					
7. Delhi Technological University*	1942	Delhi Govt.	BTech	1246	1202
8. G.B. Pant Govt. Engineering College	1961	Delhi Govt.	BTech	180	-
9. Bhai Parmanand Institute of Business Studies*	1965	Delhi Govt.	MBA	40	43
10. Netaji Subhas University of Technology*	1983	Delhi Govt.	BTech	1140	-
11. Jamia Hamdard University*	1989	Govt.-Aided	BTech	300	259
			MBA	360	279
12. Indira Gandhi Delhi Technical University	1998	Govt. Aided	BTech	553	-
			MBA	75	-
13. GGSIPU*	1998	Govt. Aided	BTech	180	180
			MBA	160	160
14. Ambedkar Institute of Advanced Communication Technologies & Research (NSUT East)*	2001	Delhi Govt.	BTech	180	180

15. Ch. Brahm Prakash Govt. Engineering College (NSUT West)*	2007	Delhi Govt.	BTech	240	240
16. Delhi Institute of Tool Engineering	2007	Delhi Govt.	BTech	150	79
17. Indraprastha Institute of Information Technology*	2008	Govt. Aided	BTech	420	430
Private Unaided					
18. Institute of Marketing & Management (B-School)	1969	Pvt-Unaided	PGDM	240	83
19. Fore School of Management*	1981	Pvt-Unaided	PGDM	450	397
20. International Management Institute	1981	Pvt-Unaided	PGDM	420	361
21. Bharati Vidyapeeth University Institute	1992	Deemed Pvt	MBA	180	176
22. of Management & Research					
23. New Delhi Institute of Management	1992	Pvt-Unaided	PGDM	600	479
24. IILM Institute for Higher Education	1993	Pvt-Unaided	PGDM	180	81
25. Apeejay School of Management	1993	Pvt-Unaided	PGDM	240	122
26. Jagan Institute of Management Studies (Rohini)	1993	Pvt-Unaided	PGDM	360	327
27. Management Education & Research Institute	1994	Pvt-Unaided	MBA	300	-
28. Fortune Institute of International Business	1994	Pvt-Unaided	PGDM	240	117
29. Lal Bahadur Shastri Institute of Management	1995	Pvt-Unaided	PGDM	450	247
30. Bhartiya Vidya Bhavan's Usha & Lakhmi Mittal Institute of Management	1995	Pvt-Unaided	PGDM	180	46
31. Entrepreneurship & Management Processes International	1995	Pvt-Unaided	PGDM	240	20
32. Asia Pacific Institute of Management	1996	Pvt-Unaided	PGDM	450	121
33. Guru Nanak Institute of Management	1996	Pvt-Unaided	PGDM	90	7
34. Rukmini Devi Institute of Advanced Studies	1996	Pvt-Unaided	MBA	240	205
35. Madhubala Institute of Communication & Electronic Media	1996	Pvt-Unaided	MBA	60	0
36. International Management Centre	1996	Pvt-Unaided	PGDM	31	-
37. Vivekananda Institute of Professional Studies	1997	Pvt-Unaided	PGDM	180	107
38. Jagan Institute of Management Studies (Kalkaji)	1997	Pvt-Unaided	PGDM	180	126
39. Tecnia Institute of Advanced Studies	1998	Pvt-Unaided	MBA	270	30

40. Teri University	1998	Deemed Pvt	MBA	60	19
41. Sri Sharada Institute of Indian Management Research	1998	Pvt-Unaided	PGDM	90	7
42. Bharati Vidyapeeth's College of Engineering	1999	Pvt-Unaided	BTech	540	483
43. Institute of Information Technology & Management	1999	Pvt-Unaided	MBA	60	60
44. Maharaja Surajmal Institute of Technology*	1999	Pvt-Unaided	BTech	660	640
45. Maharaja Agrasen Institute of Technology*	1999	Pvt-Unaided	BTech	1140	963
			MBA	180	180
46. Guru Tegh Bahadur Institute of Technology*	1999	Pvt-Unaided	BTech	600	489
47. New Delhi Institute of IT & Management	2001	Pvt-Unaided	PGDM	120	65
48. HMR Institute of Technology & Management	2002	Pvt-Unaided	BTech	660	168
			MBA	30	0
49. Dr. Akhilesh Das Gupta Institute of Technology	2003	Pvt-Unaided	BTech	960	723
& Management			MBA	120	40
50. Gitarattan International Business School	2004	Pvt-Unaided	MBA	360	106
51. Fostiima Business School*	2007	Pvt-Unaided	PGDM	300	208
52. Bhagwan Parshuram Institute of Technology	2007	Pvt-Unaided	BTech	540	502
			MBA	60	37
53. Banarsidas Chandiwala Institute of Professional Studies*	2008	Pvt-Unaided	MBA	120	107
54. Sri Sukhmani Institute of Management	2009	Pvt-Unaided	PGDM	60	22
55. Delhi Institute of Advanced Studies	NA	Pvt-Unaided	MBA	240	157
56. Periyar Management & Computer College	NA	Pvt-Unaided	MBA	120	29

* Institution covered in the primary survey
Note: Information for NIT Delhi is for 2018-19, as the latest data is unavailable.
Source: AICTE database & Latest Annual Reports of respective institutions.

Table A3.4: Inter-Correlation Matrix of the Variables used in the Analysis

	lnExp_PHE	lnExp_ent_coaching	entrance_coaching	applied_loan	lnSL_amt_applied	lnSalary_offered	secured_placement	gender	caste	religion	location_native	lnfamily_income	own_house	sibling	father_education	father_occupation	part_time_job	scholarship	student_loan	bank_tieup	personal_loans	inst_type	course	place_stay	cc_activities	pvt_tuition	xii_marks	how_applied_loan	loan_accepted	last_sem_marks	aftercourse_plan
lnExp_PHE	1.00																													
lnExp_ent_coaching	.03	1.00																												
entrance_coaching	.14***	0.00	1.00																											
applied_loan	.24***	-.15***	.07***	1.00																										
lnSL_amt_applied	.48***	-.07	.21***	0.00	1.00																									
lnSalary_offered	.05	-.08	.19***	.05	.56***	1.00																								
secured_placement	.07***	-.10***	.04*	.15***	-.11*	0.00	1.00																							
gender	-.07***	.11***	.02***	.02	.09	.08	-.05*	1.00																						
caste	.10***	.03	.11***	-.05**	.05	.14*	-.01	-.09***	1.00																					
religion	-.01	-.17***	.02	-.01	.06	.02	.03	-.04*	.05*	1.00																				
location_native	.01	-.02	-.01	-.05**	-.02	.05	-.02	-.15***	.15***	.03	1.00																			

place_stay	course	inst_type	personal_loans	bank_tieup	student_loan	scholarship	part_time_job	father_occupation	father_education	sibling	own_house	lnfamily_income
.13***	.24***	.15***	.05*	.20***	.25***	-.10***	.05*	-.02	.10***	-.03	.06**	.13***
.04	-.45***	-.02	.04	.11***	-.16***	-.02	-.07*	-.16***	.13***	-.13***	.13***	.08**
.06**	-.03	-.10***	.00	.14***	.13***	-.02	-.01	-.05**	.13***	-.08***	.06**	.12***
.06**	.16***	-.09***	.11***	.15***	.82***	-.01	.15***	.09***	-.14***	.08***	-.15***	-.09***
.14**	.12*	-.04	-.16**	.24***	0.00	-.18***	-.06	-.07	.20***	-.18***	.07	.13*
.11	-.01	-.14*	-.07	.09	.14*	.05	.06	-.20***	.19**	-.01	-.05	.24***
.02	.17***	-.07***	.06**	.09***	.15***	.06**	.13***	-.02	-.04*	.03	.01	.03
-.03	-.30***	-.11***	-.01	.05**	-.02	.09***	.02	.03	-.12***	.04	-.08***	-.11***
.00	.15***	.21***	-.09***	-.06***	-.03	-.09***	.05*	.05**	.23***	-.16***	.02	.13***
.01	.02	.03	-.05	-.04	-.01	.06**	.06**	.05**	-.05**	.05**	.06**	-.01
-.15***	.11***	.20***	-.09***	-.02	-.04*	-.08***	-.07***	-.09***	.15***	-.13***	.02	.17***
.02	.16***	.05**	-.06**	.08***	-.03	-.09***	-.04	-.28***	.32***	-.13***	.17***	1.00
-.04	.11***	.04	-.02	.03	-.08***	-.05*	-.12***	-.04*	.12***	.04	1.00	
.07***	-.06**	-.09***	.14***	-.01	.03	.09***	.07*	.15***	-.22***	1.00		
.02	.10***	.09***	-.12***	-.01	-.06**	-.12***	-.06**	-.31***	1.00			
.04	-.05*	.03	.02	-.02	.06**	.07***	.03	1.00				
.02	-.02	-.05**	.08**	.02	.08***	.03	1.00					
.10***	-.11***	-.16***	-.04	.01	.00	1.00						
.04	.20***	-.10***	.09***	.12***	1.00							
-.02	.03	-.11***	.01	1.00								
.04*	.03	-.05*	1.00									
-.13***	.07***	1.00										
.07***	1.00											
1.00												

cc_activities	.12***	.08**	.16***	.05**	.00	.12	.12***	-.02	.02	.00	.00	.13***	.08***	-.04	.08***	-.03	.05**	.02	.09***	.15***	.02	-.10***	.08***	.17***	1.00						
pvt_tuition	.20***	-.03	.03	-.03	-.07	-.08	-.02	.00	-.03	.00	-.03	-.03	.01	.08***	-.02	.01	.02	.01	-.05*	-.01	.03	.05*	-.05*	-.02	-.03	1.00					
xii_marks	.06**	.22***	.18***	-.01	.28***	.27***	.00	-.03	.17***	.02	.04	.12***	.05*	-.08***	.14***	-.01	.01	.06**	.02	.12***	-.09***	-.07***	-.17***	.05**	.09***	-.02	1.00				
how_applied _loan	-.04	.12	.06	0.00	.17**	.28**	-.04	.08	-.15***	-.13**	-.05	.04	.01	-.08	.05	-.19***	-.03	-.02	.20***	.07	-.05	-.12**	-.10*	.00	.00	-.03	-.02***	1.00			
loan_accepte d	.25***	-.16***	.13***	.82***	.00	.14*	.15***	-.02	-.03	-.01	-.04*	-.03	-.08***	.03	-.06**	.06**	.08***	.00	1.00***	.12***	.09***	-.10***	.20***	.04	.09***	-.05*	.02	.20***	1.00		
last_sem_ma rks	.01	.17***	.06**	.01	.13*	.11	.04	.00	.14***	.00	.05*	.13***	.06**	-.07**	.05*	-.03	.01	.04	.03	.05	-.07**	.04	-.07**	-.02	.03	-.05	.26***	-.04	.03	1.00	
aftercourse_ plan	.05*	-.07*	-.01	.13***	.10	.23***	.10***	-.06**	-.03	-.06**	-.03	-.06**	-.05*	.03	-.11***	.02	-.01	.02	.12***	.07***	.03	-.05*	.21***	-.04	.04*	-.03	-.03	-.02	.12***	-.03	1.00

Note: ***significant at 1% significance level, **significant at 5% significance level, * significant at 10% significance level.

CHAPTER 4

HOUSEHOLD EXPENDITURE ON PROFESSIONAL HIGHER EDUCATION IN DELHI

4.1 Introduction

Increasing presence of the private sector in higher education (HE) has led to substantial out-of-pocket spending by households in India (Tilak, 2002, 2007; Chakrabarti & Joglekar, 2006; Kambhampati, 2008; Duraisamy & Duraisamy, 2016; Kumar, 2017; Choudhury, 2019; Chandrasekhar *et al.*, 2019; Tilak & Choudhury, 2019; Kumar & Naincy, 2020; Rani, 2021). The large bulk of the current literature in this domain (as discussed in Chapter 2) has focused on examining the pattern and determinants of household spending on HE in India. But intriguingly, we find very little evidence of household investment in professional higher education (PHE), which has seen the highest private sector participation in the last two decades (except for a few studies like Ghuman *et al.*, 2008; Choudhury, 2012, 2019; Chandrasekhar & Ghosh, 2020; Tilak, 2021; Choudhury & Kumar, 2021, 2022; Tilak & Choudhury, 2021, 2022). The increasing presence of private sector in provisioning of PHE in India calls for a detailed analysis of the financial burden felt by the households due to the escalating course fee and other related expenses (Panigrahi, 2020). Examining this issue has become increasingly relevant as the public budget for HE in India is shrinking and the household's contribution is being looked at as a potential substitute to it in recent years. The recommendations given by the policymakers to cover HE costs for households, particularly PHE, is to avail student loans (Punnaya Committee, 1993; Swaminathan Committee, 1994; Ambani-Birla Committee, 2000). In this context, this chapter examines the pattern and determinants of household spending on PHE in Delhi. More importantly, we examine how student loan borrowings affect household spending on PHE. We provide additional evidence on the variability in PHE spending by different components (fee and non-fee items) and student loan borrowings, which is missing in the existing literature.

How much do households spend on professional higher education in Delhi? What factors decide the extent of investment by the households in these costly courses? How expensive are the professional courses in private institutions vis-à-vis public? Using the primary survey data, this chapter addresses these important concerns by examining the variability of household expenditure on PHE in Delhi and its relationship with socioeconomic and institutional factors. It analyses the pattern of household spending separately for fees (tuition fees and other fees) and non-fee items (food, accommodation, textbooks, stationery, transport, private tuition, mobile, internet and other educational spending). Further, using the *Ordinary Least Square* (OLS) regression model, it also examines the determinants of household spending on PHE in Delhi. The major equation used to estimate the household expenditure function is as follows:

$$lnhhexp\_PHE = \alpha + \beta_i X_i + \varepsilon \qquad \ldots(4.1)$$

A detailed discussion of the econometric specification of the OLS model is given in Chapter 3 (p.68). Separate household expenditure functions are estimated by course (engineering and management) and institution type (government and private) to understand the heterogeneity in the impact of different factors on PHE spending. While the summary statistics of the variables used for OLS analysis are given in Table A4.3 in the appendix of this chapter (p.116), their notations are given in Table A3.2 in the appendix of Chapter 3 (p.75).

While examining the household cost of PHE in Delhi, it is important to consider the financial assistance received by students and spending on pre-admission coaching (PAC). Considering financial assistance in terms of scholarship enables us to compute the net household cost of PHE in Delhi. Similarly, examining the cost of PAC gives an idea of the additional spending that students incur to get admission to professional courses in Delhi.

Providing financial assistance to students enhances their likelihood of enrolling and continuing in HE, with the impact being larger for socially and economically disadvantaged groups (Monks, 2009; Glocker, 2011; Delpiano *et al.*, 2018; Bartik *et al.*, 2021). In the context of India, Tilak (2004) has argued for the public subsidisation of education (in terms of scholarships and fee waivers) to minimise educational inequality. These studies collectively demonstrate that financial

assistance for education is essential as it increases access to education, which is itself an important tool for achieving social equity (Tilak, 2004b) and facilitating individuals' upward social mobility (Prakash, 2007). The receipt of financial aid may affect students' persistence (Klein & Perry-Sizemore, 2017; Lichtenstein, 2002), level of academic (Thorat & Newman, 2007) and non-academic involvement (Boatman & Long, 2016), academic performance (Boatman & Long, 2016; Lichtenstein, 2002), and even the extent to which they engage in community service (Boatman & Long, 2016). The differing impact of financial aid on students' academic and non-academic experiences results from the different forms of financial aid (e.g., grants, loans, and merit-based aid) and the amount of financial assistance they receive. To improve equity in access to education, several scholars in India have outlined the need to consider recipients' social background when determining the amount and type of financial aid that should be provided to them (Tilak, 1992; Rani, 2002, 2014). In this chapter, we examine who receives financial assistance and how much.

Pre-admission coaching or preparatory coaching is an important and widespread phenomenon in many developing countries, including India. There is substantial scholarly work that recognises that household spending on PAC in certain forms increases the probability of their wards attending HE and eventually securing lucrative standings in the labour market (Katsillis & Rubinson, 1990; Stevenson & Baker, 1992; Powers & Rock, 1999; Banerjee *et al.*, 2007; Dang, 2007; Gurun & Millimet, 2008; Prakhov, 2014; Berberoglu & Tansel, 2014; Punjabi, 2019). In fact, intense competition for prestigious universities and higher educational institutions (HEIs) also worsens the situation, creating a massive demand for private tutoring (Kim & Lee, 2010). However, parents' demand for PAC mainly depends upon their ability to pay (Tansel & Bircan, 2006; Azam, 2016; Pallegedara & Mottaleb, 2018; Mitra & Sarkar, 2019) and could lead to the issues of unaffordability and exclusionary trends. Several studies have corroborated that this apprehension is true by establishing that the existence of private tuition leads to moving the socioeconomic advantages in favour of richer households, violating educational equity (Stevenson & Baker, 1992; Tansel & Bircan, 2006; Dang & Rogers, 2008; Kim & Lee, 2010). This chapter examines the pattern and determinants of demand and household cost for PAC in Delhi using descriptive statistics and a *Heckman selection model.*[1]

[1] Detailed discussion on econometric model and variables used in the model in done in Chapter 3 (p.69).

The rest of this chapter is organised as follows. Section 4.2 examines the pattern and determinants of household spending on PHE in Delhi using descriptive statistics and the *OLS regression model*. Section 4.3, using descriptive statistics and a *Heckman selection model*, analyses the pattern and determinants of demand and household cost for pre-admission coaching in Delhi. Section 4.4 summarises the major findings that emerge from the chapter. Additionally, the appendix addresses two important questions: (i) who receives financial assistance and how much? and (ii) how much is the net household spending on PHE in Delhi?

4.2 Household Spending on Professional Higher Education in Delhi: Pattern & Determinants

The per-pupil annual household spending on professional higher education in Delhi is around ₹3 lakh, which accounts for 16.2% of the total annual family income (see Table 4.1). Further, the table shows various components of household spending on PHE. A careful read-through of the data signals that, out of the total household spending on PHE, around ₹1.61 lakh is incurred on fees (including admission fees, tuition fees, exam fees, library fees and other fees) and ₹1.54 lakh on non-fee items such as expenditure on food, accommodation, textbooks, stationery, transport, private tuition, mobile, internet and others. Fees accounted for 8.7% and non-fee spending constituted 8.3% of the annual family income. Share of spending on fees to total household spending on PHE is 42.6%, while it is 57.4% on non-fee items. Interestingly, even though PHE institutions charge high fees, households sending their offspring to PHE courses spend a significant amount on non-fee items. For instance, spending on 'food & accommodation' (₹99 thousand) and 'private tuitions' (₹60 thousand) take a major share of 61.2% in total non-fee spending, followed by 11.2% on 'transportation' (₹29 thousand), 7.8% on 'books & stationery' (₹20 thousand) and the rest 19.8% on 'mobile and internet' and other items.[2] However, given the heterogeneity in professional courses, examining the variations in household costs by course (engineering and management) and institutions (government and private) is important.

[2] In the interviews, it came to notice that other educational spending includes expenses related to projects works. Both engineering and management graduates are required to submit project works in the last semester, that require considerable amount of expenditure.

Table 4.1: Item-wise Annual Per-Student Household Spending on PHE in Delhi by Course

	Spending (₹ in lakh)			*% of Total Spending**			*% of Annual Family Income*		
	Engineering	Management	Total	Engineering	Management	Total	Engineering	Management	Total
Tuition Fee	1.14	2.73	1.48	27.89	44.75	32.71	6.16	14.73	7.97
Other Fee	0.35	0.42	0.36	8.44	6.90	7.91	1.86	2.27	1.93
Caution Deposit	0.09	0.10	0.09	2.11	1.68	1.98	0.47	0.55	0.48
Fee Total	1.28	2.84	1.61	38.45	53.32	42.60	6.92	15.33	8.69
Food & Accommodation	0.94	1.19	0.99	22.83	19.42	21.87	5.04	6.39	5.33
Books & Stationery	0.20	0.19	0.20	498	3.18	4.47	1.10	1.05	1.09
Transport	0.26	0.38	0.29	6.45	6.20	6.42	1.43	2.04	1.56
Private Tuition[3]	0.61	0.57	0.60	14.81	9.26	13.28	3.27	3.05	3.24
Mobile & Internet	0.07	0.07	0.07	1.73	1.12	1.56	0.38	0.37	0.38
Other items	0.44	0.46	0.44	10.75	7.49	9.81	2.37	2.47	2.39
Non-Fee Total	1.49	1.72	1.54	61.55	46.68	57.40	8.03	9.27	8.30
Grand Total	2.63	4.40	3.00	100	100	100	14.15	23.73	16.18

Note: *Share of each item is calculated based on the sum of all items.
Source: Compiled by the research scholar from the primary survey data.[4]

We notice stark differences in household spending on PHE in Delhi by type of courses. Students pursuing management courses spent remarkably higher on their education (1.7 times more) than those studying engineering courses (see Table 4.1). Further disaggregation of management courses reveals that the highest cost is incurred by students pursuing Post Graduate Diploma in Management (PGDM) courses (₹5.81 lakh), making PGDM the costliest professional discipline among the three courses. To cover the cost of education, households spend around 23.7% and 14.2% of their annual family income if their child is pursuing an MBA/PGDM course or BTech degree, respectively. A further examination of data suggests that this spending gap is

[3] Private tuitions are taken by students to supplement their studies during course work. It is different from spending on pre-admission coaching, which is taken to prepare for entrance exams. More discussion on household spending on pre-admission coaching is done in the later part of this chapter (p.102).

[4] The source for all the tables and figures in this chapter is same, unless otherwise mentioned.

largely due to higher fees charged in MBA and PGDM courses, not only in private institutions but also in some reputed government institutions. Fee charged by *Indian Institute of Foreign Trade* (a central government institution) for a two-year MBA course was ₹18.25 lakh for the 2021-23 batch, which is quite more than the fee charged by *Fore School of Management* (a private institution) for a two-year PGDM course, i.e., ₹16.98 lakh. Our estimates reveal that fee charged in management courses is reported to be around 2.2 times more than in engineering courses. The annual course fee ranges from ₹1.16 to ₹2.53 lakh in government institutions and ₹1.43 to ₹3.14 lakh in private institutions – between engineering and management courses, respectively. Though the yearly cost of management courses is higher, it is important to note that engineering courses are costlier when considering the course duration. Total cost of a four-year UG-engineering degree in Delhi adds up to ₹10.51 lakh, significantly higher than a two-year MBA/PGDM course costs, i.e., ₹8.81 lakh.

In terms of spending share, course fee constitutes the highest share of total PHE spending (32.7%), followed by food and accommodation (21.9%), private tuition (13.3%), and the rest 32.1% share in other items like other fees, caution fee, books & stationary, transport, mobile & internet, and other items (see Table 4.1). However, we note huge course-wise variations in spending share of different items. For instance, course fee alone constitutes 44.1% of total spending on management courses, which is only 27.4% for engineering courses. This indicates that professional graduates in Delhi spend a considerable amount on non-fee items, which is quite high in BTech courses (72.6%) compared to MBA/PGDM courses (55.9%).

By discipline of study, the average annual household spending was noted ₹2.47 lakh for those pursuing traditional engineering courses, which is relatively less than the spending of those pursuing IT/modern engineering courses, i.e., ₹2.69 lakh (see Table 4.2).[5] Similar findings have been reported by a few studies which report that IT or modern engineering courses are costlier than traditional engineering courses in India (Choudhury & Kumar, 2021; Tilak, 2021). Further, within MBA/ PGDM courses, the highest spending is reported for those studying marketing discipline (₹4.89 lakh), followed by other disciplines taken together (₹4.45 lakh), and least among those enrolled in finance discipline (₹3.97 lakh).

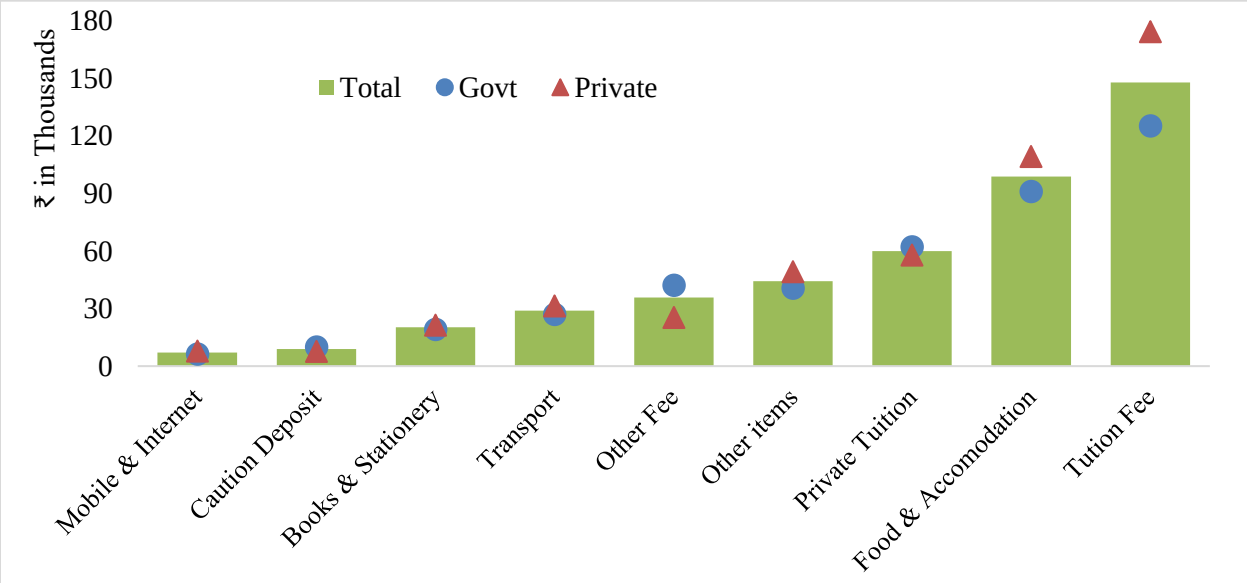
[5] Traditional engineering courses include civil, mechanical, and electrical engineering; whereas IT-related or modern engineering courses include computer science, electronics and communication, and information technology.

Table 4.2: Per-Student Household Spending on PHE in Delhi by Discipline (₹ in lakh)

		Fee	Non-Fee	Total	% to Family Income
Engineering	Traditional	1.11	1.54	2.47	13.32
	IT/Modern	1.36	1.47	2.69	14.51
	Total	1.28	1.49	2.63	14.15
Management	Finance	2.40	1.71	3.97	21.38
	Marketing	3.42	1.65	4.89	26.37
	Others	2.83	1.80	4.45	23.99
	Total	2.84	1.72	4.40	23.73
Grand Total		1.61	1.54	3.00	16.18

While we do not find significant variations in PHE spending on non-fee items, a stark gap in tuition fees is visible across type of institutions. The annual tuition fee charged in private institutions (₹1.74 lakh) was considerably higher than in government institutions (₹1.25 lakh), marking a difference of around 1.4 times (see Figure 4.1). Among the non-fee items, spending on items like 'food and accommodation,' 'books & stationery,' 'transportation,' 'mobile & internet,' and 'other educational expenses' was reported more by the students attending private institutions. In contrast, spending on 'private tuition' was more for those enrolled in government institutions. In this context, Choudhury, Kumar & Gill (2021) found that students attending private higher education institutions in India have 6.5% less likeliness of attending private supplementary tutoring (p.13) and, therefore, they may spend less on it.

Figure 4.1: Item-wise Annual Per-Student Household Spending on PHE by Institution



Socioeconomic & Institutional Inequalities in Family Spending on PHE

Do family spending on PHE in Delhi varies by socioeconomic and institutional factors? Before examining the effect of various factors[6] on household spending on PHE in Delhi, we attempt to see the correlation coefficients of these variables with household spending (see Table A3.4 in Chapter 3, p.80). Among the statistically significant factors, caste, family income, house ownership, father education, part-time job, student loan borrowing, institution type, course and private tuition are positively related to household spending on PHE in Delhi. In contrast, the gender of students and receiving a scholarship are negatively related.

Gender: Findings reveal that households spend ₹3.48 lakh on professional education of daughters, considerably more than sons, i.e., ₹2.90 lakh (see Table 4.3). They spend around 18.8% and 15.6% of their annual family on their daughters and sons, respectively. Similar findings were reported by Wongmonta and Glewwe (2017) in the context of Thailand. The study found that Thai families are more likely to allocate their financial resources for daughters' education than sons'. The explanation given by the authors is a combination of cultural preference and economic motives (ibid: p.201). In old age, females are expected to be the primary caregivers for their parents, and daughters provide a significant share of their income to their parents than boys. Therefore, parents are likely to allocate more household resources to their daughter's education than sons' (ibid: p.201). In our case, more spending on daughters' education may be attributed to awareness among parents regarding returns to girls' education. Further, course-wise disaggregation shows a pro-male bias among those studying management courses. Annual household spending in management courses for males is ₹4.50 lakh, slightly more than their female counterparts (₹4.25 lakh). This goes with the findings of many studies reporting a pro-male bias in household spending on education in India (Panchamukhi, 1990; Tilak, 2002; Kingdon, 2005; Aslam & Kingdon, 2008; Kambhampati, 2008; Saha, 2013; Kaul, 2018; Iddrisu *et al.*, 2018; Datta & Kingdon, 2019; Kumar & Naincy, 2020; Rani, 2021; Beg & Bhatt, 2021; Tilak, 2021; Choudhury & Kumar, 2021, 2022). A possible explanation for this can be that the households might prefer sons' education over daughters' at the post-graduate level. This can be explained by the fact that households in a

[6] The explanatory factor included in the analysis are socioeconomic (gender, caste, religion, family income, house ownership and father education), institutional (type of institution, course, place of stay, private tuition, and co-curricular activities) and funding factors (scholarship, part-time job, and student loan).

patriarchal society such as India tend to optimise their resources by disproportionately allocating to their sons vis-à-vis their daughters. The regression estimate for the *gender* variable is not statistically significant.

Caste: Wide-ranging theoretical and empirical studies clearly exhibit that caste-based inequalities continue to exist in all spheres of Indian society and economy, including in terms of educational accomplishments and household educational expenditures (Gupta, 2000; Tilak, 2002, 2015; Chaudhuri & Roy, 2006; Pradhan, 2011; Thorat & Newman, 2012; Choudhury, 2012; Jodhka, 2015; Kumar, 2017; Sarkar, 2017; Choudhury, 2019; Choudhury & Kumar, 2021a, 2021b; Tilak, 2021). Our analysis notes that variations in PHE spending are significant across social groups. Upper caste (UC) students incurred the highest expenditure (₹3.20 lakh), followed by ₹2.73 lakh among other backward classes (OBCs), and as expected, scheduled castes (SCs) and scheduled tribes (STs) spent the lowest, i.e., ₹2.55 lakh and ₹2.32 lakh respectively (see Table 4.3). We report that UC students in PHE spend around 37% and 25% more on education than their SC and ST counterparts, respectively. These social groups usually belong to the lower spectrum of the caste hierarchy, are considerably over-represented amongst India's poor (Jodhka, 2015), and cannot afford to spend much on education. It is important to examine how the caste-based stratified and segmented Indian society incurs expenditures on different educational items, i.e., fee and non-fee. We note that caste gap in spending is largely due to the difference in course fees paid by students from different social groups, as we do not find a huge gap in non-fee spending. Still, UC students spend relatively higher on non-fee items (₹1.62 lakh) than ST (₹1.41 lakh) and SC students, i.e., ₹1.43 lakh (see Table 4.3). Clearly, the course fee paid by ST and SC students is 1.7 and 1.5 times less than what their UC counterparts are paying. This might be because students from marginalised sections (including SCs and STs) are given fee waivers in professional HEIs, particularly by public HEIs. The extent of caste disparity in household spending is considerably more in MBA/PGDM courses than in BTech courses. In management courses, UC students are incurring ₹4.72 lakh annually, around 2.7 times and 1.8 times more than their ST and SC counterparts. This is mainly an outcome of the spending gap on non-fee items, ranging from the lowest ₹0.81 lakh for STs to ₹1.83 lakh for UCs. Apparently, most SC/ST students come from lower or middle-class families and cannot afford to spend much on non-fee educational expenses, especially when they incur huge tuition fees in professional courses.

Religion: Inequality in household spending on PHE in Delhi is manifested among the households segregated by different religions. Students from other religious groups[7] taken together spent the highest amount of PHE in Delhi (₹3.53 lakh annually), followed by Hindus (₹3.02 lakh), and as anticipated, Muslims spent the lowest amount of ₹2.35 lakh (see Table 4.3). This reports that students from other religions spend 1.5 times more on education than their Muslim counterparts, escalating to 2.3 times if they pursue management courses. Regression estimates also confirm this spending pattern among religious groups. Coefficient reports 18.1% less expenditure on PHE by Muslims compared to Hindus and this escalates in case of those pursuing management courses (42.3% less spending) and government institutions, i.e., 31.3% less spending (see Table 4.4). Further, the students belonging to 'Other Religions' taken together spent a bit more than Hindus, but the overall coefficient is not statistically significant. These findings align with the established literature concluding relatively less investment by Muslim households in their offspring's education (Gangopadhyay & Sarkar, 2014; Kumar, 2017; Choudhury, 2019). Apparently, families from other religions are economically better off in India and thus can afford to spend more on their children's education. Another contributing factor might include the minority scholarships[8] provided by the Government to Muslim students, which might supplement their spending on education and decrease the overall spending.

Family Income: Several studies around the globe have documented that economic status of the family plays a major role in educational investment in India (Tilak, 2002; Choudhury, 2012; Kumar, 2017; Gill, 2019; Choudhury, 2019; Chandrasekhar *et al.*, 2019; Dhanaraj *et al.*, 2019; Choudhury & Kumar, 2021, 2022) and elsewhere (Acevedo and Salinas, 2000; Urwick, 2002; Tansel & Bircan, 2006; Omori, 2010; Shafiq, 2011; Acar *et al.*, 2016; Acerenza & Gandelman, 2019; Song & Zhou, 2019; Pallegedara & Kumara, 2020; Demiroglari & Gürler, 2020). For

[7] Other religious groups include Christian, Sikh, Jain, Buddhist, Zoroastrian, and other religions. We clubbed these religions together because they only constitute 6.2% of the total sample. Another rationale for clubbing these religions is that families in these religious groups usually belong to the higher ladder in the socio-economic strata in India.

[8] Majority of the Muslim students covered in the survey are enrolled in two universities: (i) Jamia Milia Islamia (funded by central government) and Jamia Hamdard (funded by Government of NCT of Delhi). These universities provide various scholarships to Muslim students such as Jamia Merit Scholarships, Merit Scholarship of the Centre for Management Studies, Means Scholarship of the Centre for Management Studies, and Hakeem Abdul Hameed Scholarship.

instance, Kanellopoulos and Psacharopoulos (1997) found that Greece households belonging to the bottom 20% expenditure quintile spent 6.5% of their annual income on education, whereas it is 55.8% for households belonging to the upper 20% expenditure quintile. Some studies also argue that quality of PHE accessed by students from diverse family backgrounds varies substantially due to the differences in their paying capacity. Even if some poor households send their wards to professional courses like engineering, medicine, and management, they spend significantly less on it than rich families, which might affect quality, continuation, and academic performance of students. Therefore, it is quite important to look at the variations in household spending on PHE in Delhi.

We note that average household spending on professional education in Delhi increases with an upward shift in the income quintile[9] (see Table 4.3). Specifically, spending is lowest for the poorest quintile (₹2.48 lakh) and highest for the richest quintile (₹3.50 lakh). Top quintile households (Q5) spend around 1.4 times more on PHE than the bottom quintile (Q1). A similar expenditure pattern is observed for fee and non-fee items, but the income-based gap is found more in case of fee spending. Course fee ranges from ₹1.27 lakh (Q1 households) to ₹2.08 lakh (Q5 households), reporting a gap of 1.6 times between the two groups. Further, OLS estimates also report a positive relationship between family income and family spending on PHE. Since we use the natural logarithm of household spending on PHE and family income, the coefficient of household spending enables us to derive the income elasticity of education spending. A unit increase in income level increases the total household spending on PHE by 3.4%, with a larger effect among those families where the child is attending an engineering course (4.4% increase in spending) or government institution, i.e., 5.3% increase in spending (see Table 4.4). Surprisingly, households in the bottom quintile spend more than their annual family income on PHE of their children, i.e., 139%. They spend around 132.8% on an engineering degree and 204.8% on an MBA/PGDM course. This indicates their willingness to pay as they aspire to ensure good quality

[9] The sample is divided into five quintiles based on family income. The first quintile includes bottom 20% of the sample, the second quintile includes next 20% of the sample and so on. Income inequality among sample students' family is reported to be significantly high. Annual family income ranges from ₹36 thousand to ₹1 crore, wherein about 23% the households fall below the range of ₹3 lakh annual family income – which is the annual per-student expenditure on PHE in Delhi. If accounted for the annual spending of management courses (₹4.4 lakh), the corresponding share increases to around 31.3% households, who earn less than this annually.

education for their offspring. To access costly professional courses, poor households may rely on other financing sources such as scholarships, student loans, and other loans or borrowings. Given the costly nature of PHE in Delhi, it is imperative to examine other sources of household financing for PHE. For instance, what share of students from these low-middle-income families access scholarships? What share of these graduates applies for student loans and how many are granted a loan? We examine the access to scholarships among PHE graduates in the appendix of this chapter and socioeconomic inequalities in access to student loans in the next chapter (p.136).

Table 4.3: Per-Student Household Spending on PHE in Delhi by Socioeconomic and Institutional Factors (₹ in lakh)

	Engineering				*Management*				*Total*			
	Fee	Non-Fee	Total	% to Income	Fee	Non-Fee	Total	% to Income	Fee	Non-Fee	Total	% to Income
Gender												
Female	1.16	1.80	2.80	15.06	2.66	1.74	4.25	22.90	1.87	1.77	3.48	18.77
Male	1.30	1.45	2.60	14.03	2.97	1.71	4.50	24.27	1.56	1.49	2.90	15.61
Caste												
ST	1.06	1.51	2.41	11.26	0.94	0.81	1.75	8.17	1.05	1.41	2.32	10.85
SC	1.20	1.43	2.54	15.63	1.18	1.47	2.65	16.30	1.20	1.43	2.55	15.68
OBC	1.31	1.37	2.56	18.21	2.52	1.37	3.64	25.91	1.50	1.37	2.73	19.44
UC	1.30	1.55	2.68	13.11	3.04	1.83	4.72	23.08	1.74	1.62	3.20	15.65
Religion												
Hindu	1.31	1.50	2.66	13.98	2.78	1.73	4.34	22.82	1.62	1.55	3.02	15.85
Muslim	0.98	1.38	2.29	19.64	1.38	1.37	2.66	22.75	1.04	1.38	2.35	20.09
Others	1.26	1.43	2.52	13.12	4.30	1.76	5.99	31.25	2.16	1.53	3.53	18.41
Income Category												
Q1	1.16	1.32	2.37	132.82	2.40	1.39	3.66	204.79	1.27	1.33	2.48	138.97
Q5	1.43	1.54	2.76	3.87	3.41	1.80	5.02	7.03	2.08	1.63	3.50	4.90
Institution												
Govt	1.16	1.43	2.46	13.26	2.54	1.64	4.05	21.83	1.42	1.47	2.76	14.89
Private	1.44	1.57	2.84	15.29	3.14	1.80	4.75	25.57	1.84	1.62	3.29	17.72
Student Loan												
No	1.36	1.46	2.66	14.32	3.22	1.78	4.99	26.91	1.69	1.52	3.08	16.58
Yes	1.75	1.46	3.16	17.00	4.47	1.93	6.31	33.99	2.87	1.65	4.44	23.93
Scholarship												
No	1.31	1.54	2.69	14.48	2.83	1.71	4.38	23.57	1.66	1.58	3.07	16.55
Yes	1.11	1.21	2.24	12.05	3.08	1.85	4.93	26.54	1.29	1.28	2.48	13.38
Total	1.28	1.49	2.63	14.15	2.84	1.72	4.40	23.73	1.61	1.54	3.00	16.18

House Ownership: Besides family income, other indicators of household economic status include family wealth. In this survey, we ask the students regarding ownership of a few assets by the households, including houses, land, or vehicles. Majority of the students (81.3%) reported that their family owns a home, followed by 45.8% who reported owning land, 46% cited owning a car, and around 3/4th of them cited owning a two-wheeler. We include house ownership as an independent variable in OLS model and find that households owning a house end up spending 8.2% more on PHE of their child (see Table 4.4). Such a tendency is significantly higher if the child attends a government institution, i.e., 15.8% more spending.

Parental Education: A growing number of papers in the field of economics of education establish a positive relationship between parental education and household spending on education (Tan, 1985; Kanellopoulos & Psacharopoulos, 1997; Tilak, 2002; Chaudhuri & Roy, 2006; Dang, 2007; Qian & Smyth, 2011; Saha 2013; Elbadawy, 2015; Rizk & Abou-Ali, 2016; Minello & Blossfeld, 2017; Demiroglari & Gurler 2020; Yan *et al.*, 2021). For instance, Psacharopoulos and Mattson (2000) concluded that one year increase in households' head education results in an increase in education spending at the primary level by 8% in Bolivia. A similar finding was put forth by Schroeder *et al.* (2015) in the context of Germany. Does parental education level have any effect on the level of household expenditure on PHE in Delhi? We find that education expenditure tends to increase with the levels of father's education.[10] More clearly, with an increase in each year of father's education, household spending on PHE in Delhi increases by around one per cent (see Table 4.4). This is apparently in conformity with the view that the significance of education and spending thereon is more recognised in better-educated households. Interestingly, the effect of father's education on household spending is found to be more in case when the child is attending a management course (2.9% increase in spending with one year increase in father's education) or a private institution (1.9% increase).

[10] Level of parental education in the present survey is quite satisfactory. Majority of the fathers (65.5%) holds a graduation or higher-level degree, followed by 32.7% with up to secondary level education and only a meagre share (1.8%) was reported illiterate. Similarly, share of mothers holding graduation or higher-level education was 52.7%, followed by 41% with up to secondary level education and only 6.2% were illiterate.

Table 4.4: Determinants of Household Spending on PHE in Delhi: OLS Estimates (Model 3)

	Eqn. 1 Overall	*Eqn. 2* Engineering	*Eqn. 3* Management	*Eqn. 4* Government	*Eqn. 5* Private
gender	.061	.086	.072	.072	.046
	(.054)	(.070)	(.085)	(.077)	(.077)
caste (Ref. – ST)					
SC	.116	.068	.379	.125	.068
	(.141)	(.139)	(.471)	(.148)	(.164)
OBC	.167	.113	.697	.170	.188
	(.138)	(.136)	(.433)	(.144)	(.152)
UC	.176	.063	.897	.249	.091
	(.135)	(.134)	(.421)	(.140)	(.147)
religion (Ref. – Hindu)					
Muslim	-.181***	-.131*	-.423*	-.313***	.053
	(.073)	(.075)	(.230)	(.098)	(.101)
Others	.021	-.106	.289**	.038	.014
	(.072)	(.078)	(.135)	(.125)	(.087)
lnfamily_income	.034***	.044***	.004	.053***	.009
	(.013)	(.014)	(.039)	(.017)	(.022)
own_house	.082**	.072*	.126	.158***	-.024
	(.042)	(.041)	(.155)	(.060)	(.056)
father_edu	.009*	.008*	.029*	.001	.019***
	(.005)	(.005)	(.017)	(.007)	(.008)
part_time_job	.072**	.078**	.116	.082*	.061
	(.038)	(.041)	(.103)	(.052)	(.053)
inst_type	.216***	.203***	.257***	-	-
	(.036)	(.040)	(.084)	-	-
course	.280***	-	-	.205***	.347***
	(.053)	-	-	(.076)	(.076)
place_stay (Ref. – Home)					
Hostel	.223***	.228***	.194*	.196***	.393***
	(.052)	(.057)	(.118)	(.061)	(.095)
Other	.259***	.204***	.357***	.277***	.220***
	(.045)	(.047)	(.108)	(.064)	(.060)
scholarship	-.126***	-.156***	.074	-.196***	.044
	(.054)	(.055)	(.176)	(.064)	(.094)
student_loan	.486***	.383***	.606***	.532***	.346***
	(.041)	(.046)	(.078)	(.054)	(.068)
cc_activities	.088**	.070*	.112	.014	.161***
	(.044)	(.049)	(.102)	(.054)	(.076)
pvt_tuition	.507***	.559***	.200	.558***	.501***
	(.047)	(.046)	(.168)	(.073)	(.059)

Constant	11.057***	10.973***	10.882***	10.802***	11.703***
	(.235)	(.245)	(.711)	(.288)	(.305)
F Value	23.70	14.33	8.94	13.87	10.67
R square	.223	.175	.277	.230	.219
Observation	1,475	1,163	312	806	669

Notes: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Scholarship: Theoretically, the availability of scholarships may increase or reduce household expenditure per student. If the scholarship money is spent in addition to their cost of living, it will increase the household spending on education. Conversely, if it substitutes the expenditure, it will reduce household expenditure on education. Also, if scholarships are awarded to students from low-income families, as in the present case, it will be associated with low household spending. However, if these are given to meritorious students (rewarding them for their performance), it will add to the household expenditure on education. Hence, receiving scholarships may affect family spending on education either positively or negatively. The present analysis shows a negative relationship between the two, which aligns with the findings of some studies (Choudhury, 2012; Kumar, 2017; Choudhury & Kumar, 2021). Students receiving any scholarship[11] spend an annual amount of ₹2.48 lakh on their education, considerably less than their counterparts, i.e., ₹3.07 lakh, indicating a substitution effect (see Table 4.3). Regression estimates also confirm this negative relationship. Students availing any scholarship spend 12.6% less on PHE than those who do not receive scholarships (see Table 4.4). Hence, scholarships received by students worked as a substitute for household expenditure on PHE in Delhi. The extent of substitution is greater in government institutions, i.e., 19.6%. Obviously, government HEIs provide a range of scholarships, which are limited in private institutions. We examine access to scholarship in the appendix of this chapter (p.110). It enables us to estimate the net household spending on PHE in Delhi, i.e., after accounting for the scholarship amount.

[11] Around 11.8% of the total sample students reported receiving any of the four types of scholarships: (i) Central government scholarship, (ii) State government scholarship, (iii) institutional scholarship, or (iv) any other educational scholarship. Most of them (around 42.7%) are receiving scholarships provided by Government of NCT of Delhi, followed by those receiving central government scholarships (28.6%), institutional scholarships (22.5%) and 6.2% receiving any other educational scholarship.

Student Loan: Of the total students covered in the survey, around 13.8% are granted student loans, and this figure is 10.3% for those in BTech courses and 26.9% for MBA/PGDM courses. How do student loans affect household investment in PHE in Delhi? We find that student loan supplements the family spending on professional education in Delhi. Student loan borrowers spend an annual amount of ₹4.44 lakh on their education, which is remarkably high than their non-borrower counterparts, i.e., ₹3.08 lakh (see Table 4.3). Regression estimates also reveal that student loan borrowers end up spending 48.6% more on their education than non-borrowers (see Table 4.4). A similar finding was put forth by Tilak (2021), concluding that engineering students in India who have taken loans spend 9% more than their counterparts who have not taken student loans. Likewise, Choudhury (2011) found that a unit increase in student loan amount increases the household spending on non-fee items by 37% among engineering graduates in Delhi, India (p.24). Though the effect of student loan take-up is positive irrespective of course of study, its effect is considerably higher among those pursuing management courses, wherein those who got loans spend 60.6% more than those financing their education from other sources (see Table 4.4). As discussed earlier, the annual household spending on management courses is higher than on engineering courses, and the SL borrowers might spend more on it after receiving the loan amount from commercial banks.

Type of Institution: Annual average family spending on PHE varies widely by type of institution, i.e., government and private. The annual average per-student spending is ₹2.76 lakh for students attending government institutions and ₹3.29 lakh for those enrolled in private institutions, marking a significant difference between the two types of institutions (see Table 4.3). This difference is higher for fees as compared to non-fee expenditure. Annual average household spending in private professional HEIs is 1.3 times the spending in government institutions, and the corresponding figure is 1.1 times in the case of non-fee. It is apparent that private institutions' tuition fees are higher than government institutions, which has been increasing over the years. These findings are similar to that of several studies around the globe (McMahon, 1974; Salim, 1994; Sarkar, 2017; Kumar, 2017; Choudhury, 2019; Tilak & Choudhury, 2021; Tilak, 2021; Choudhury & Kumar, 2021, 2022). For instance, McMahon (1974) reports that all the income elasticities of real investment expenditure on education are much higher in public institutions than in private institutions in the US. Further, regression results show a positive relationship between

the private institution and per-student annual family spending on PHE in Delhi, irrespective of the course type. Students enrolled in private institutions spent around 21.6% more on their education than students studying in government institutions (see Table 4.4). The degree of this positive relationship between enrolment in private institutions and household spending on PHE is relatively high in management courses than in engineering courses. Those pursuing BTech courses in private institutions spend 20.3% more than their counterparts in government institutions, and the corresponding figure for MBA/PGDM students is 25.7%. This difference is mainly due to the high fees charged by private HEIs in Delhi, especially in MBA/PGDM courses. This reveals that growth of PHE by the private sector in India is exploitive in nature, as the students from poor households aspiring to access these courses bear the financial hardship.

Course: We find limited studies that examine household spending on a specific discipline or a set of disciplines in higher education in India (Choudhury, 2012; Choudhury, 2019; Choudhury & Kumar, 2021; Tilak, 2021; Tilak & Choudhury, 2021). We examine the investment level in engineering and management courses in Delhi. We find that annual per-student household spending was 28% more for students enrolled in management courses than those studying engineering courses, and the result is significant at a one per cent significance level (see Table 4.4). This makes management courses costlier among the two. Though there are inter-institutional differences in spending, the disparity widens further for those attending private institutions. More specifically, of all the PHE students attending government institutions, those attending MBA/PGDM courses spent 20.5% more than engineering students, and the corresponding figure escalates to 34.7% in case of private institutions. Apparently, these courses' fees vary widely, especially in private institutions in Delhi. The course-wise variation in household investment in HE is an interesting domain for further enquiry, particularly in the context of declining demand for engineering courses in India.

Place of Stay: Educational expenditure of students availing hostel facilities was 22.3% more than those staying at home,[12] a figure that further increases to 39.3% for those enrolled in private institutions (see Table 4.4). In a similar study by Kumar (2017), university hostellers spent

[12] Of the total students surveyed, more than three-fourth (79%) of them were staying at home, followed by 11% hostellers and 10% staying in other settings like rented accommodation, private mess, paying guests, etc.

53% more than non-hostellers (ibid, p.74). This reflects the additional cost of living in a hostel, which differs by institution type. Generally, the hostel fee in government HEIs is lower than in private HEIs. Further, those who stay in other settings (such as rented accommodation, private mess or paying guests) spend 25.9% more on their education than those staying at home. Perhaps, these students incur a higher amount on non-fee items such as food, accommodation, transport, and other related expenses. Interestingly, though students staying in rented accommodation spend the highest, the degree of spending is relatively less among those enrolled in private institutions (vis-à-vis government institutions). Given the costly nature of PHE in private institutions, these students might spend less on other non-fee items.

Private Tuition: We find that students attending private tuition[13] spend remarkably more (50.7%) than those not attending (see Table 4.4). This corroborates with the findings of Kumar (2017), who finds that university students in India who avail private coaching spend around 40% more than those not availing (ibid, p.73). Of course, attending supplementary tuition adds up to the non-fee education spending. As discussed earlier, PHE students spend ₹60,051 per annum (around ₹5,004 monthly) on private tuition, constituting 13.3% of their total educational spending. Further, students enrolled in engineering courses tend to incur 55.9% higher vis-à-vis their counterparts who do not attend private coaching. Similarly, this proportionate figure is higher among government institutions (55.8%) than private institutions (50.1%). In the former case, more spending on private tuition perhaps reflects the poorer quality of education delivered in these institutions, necessitating the students to spend more on private tuition.

Part-time Jobs: About 21.3% of the sample students were involved in part-time jobs and internships at the time of the survey. Such engagement was slightly higher among engineering graduates (21.7%) than management graduates (19.6%). OLS results indicate that students' engagement in part-time work has a positive effect on household spending on PHE in Delhi. Those doing part-time jobs spent 7.2% more on education than their counterparts without such engagements (see Table 4.4). Such tendency is noted higher among engineering graduates (7.8%

[13] In the present survey, around 11.7% students attend private tuitions to supplement their learning in the course work. This share is 12.2% among engineering graduates, relatively higher than management graduates (only 8.5% attending tuitions).

more spending) and those enrolled in government institutions (8.2% more spending). Thus, additional earnings made by the students from part-time jobs seem to work as a supplement to their educational spending. Similar findings were noted by Tilak (2021) in the context of engineering graduates in India, wherein those engaged in part-time jobs spend around 10% more than those not involved in such engagements.

Co-curricular Activities (CCA): In the survey, students were asked about their participation in co-curricular activities like sports competitions, annual functions, group picnics, trips, hostel nights, and other functions. We include an explanatory variable (*cc_activities*) that takes the value '1' if the student participates in any of these activities and '0' if otherwise. The share of students participating in CCA was reported to be 23.9% – including 27.8% in government institutions and 19% in private institutions. Regression coefficient reveals that those participating in CCA spend 8.8% more on education than those not participating (see Table 4.4). Though students in government institutions participate more in such activities, students in private institutions spend more to engage in CCA (16.1% more spending than those not participating). Perhaps, private institutions charge more fees for conducting these activities. Another contributing factor may be the paying capacity of the households, as those who can afford to study in costly private institutions might also spend more on CCA.

It is important to mention here that the OLS coefficients of the main models (Model 1, 2 and 3) are found to be precisely the same in direction (positive or negative) and almost similar in magnitude (the numeric values of the coefficients) to the heteroscedasticity-consistent OLS model (see Table A4.4 in the appendix). The effect of explanatory variables included in the heteroscedasticity-consistent OLS models remained consistent and statistically significant. Further, the results in the overall model *(Model 3)* are similar to the results in *Model 1* (with only socioeconomic variables) and *Model 2* with only institutional variables (see Table A4.5 in the appendix). The estimates of Model 1 indicate a significant caste gap in household spending on PHE in Delhi. Compared to ST students, OBCs spend 25.8% more on their education, and the corresponding figure increases to 29.6% for UC students. Though the caste variable in the overall model is statistically insignificant, the hierarchy of spending across different castes is noted to be similar. Likewise, Muslim students spend significantly less (24.1%) than Hindu students. Further,

the economic status of a household is positively associated with PHE spending. With a unit increase in the family income, PHE spending increases by five per cent. Those who own a house spend 7.9% more on PHE than those belonging to families with no house ownership. Coefficients in Model 2 reveal that students pursuing management courses spend substantially higher on education (30.5% more) than engineering students. Similarly, those enrolled in private institutions incur more education expenditure. Further, students staying in hostels and accommodation other than home spend relatively more than those staying at home, i.e., 22.5% and 24.6% higher. Students involved in part-time jobs, private tuition, and extra co-curricular activities spend more on education than their counterparts. While receiving a scholarship substitute for the PHE spending, borrowing a student loan works as a supplement to it. These results corroborate with the overall OLS model *(Model 3)*.

4.3 Household Expenditure on Pre-Admission Coaching by PHE Graduates in Delhi

This section uses the primary survey data to examine the patterns and determinants in the demand and cost of pre-admission coaching in PHE in Delhi. Particularly, we address three important questions about PAC: (i) what share of PHE students in Delhi took PAC? (ii) how much did they spend on it? and (iii) what are the determinants of demand and cost of PAC among PHE students? While the first two questions are addressed based on descriptive statistics, we use a two-step Heckman selection model (Heckman, 1979) to address the third question. The econometric specification of the two-step Heckman selection model is as follows:

$$P(z = 0|x_1) = 1 - \emptyset\,(x_1\gamma) \qquad \ldots(4.2)$$

$$\log(z) \mid x_2, z > 0 \sim Normal\,(x_2\beta, \sigma^2) \qquad \ldots(4.3)$$

A detailed discussion on the econometric specification of the Heckman model is done in Chapter 3 (p.69). The summary statistics of the variables used in the model are given in Table A4.3 in the appendix of this chapter, and their notations are shown in Table A3.2 in the appendix of chapter 3 (p.75).

About 43.3% of the sample students took PAC to prepare for the entrance exam[14] for admission in the present course (see Table 4.5). The average household spending on PAC was reported to be ₹135 thousand, constituting around 7.3% of annual family income and 45% of their annual education spending for the current course. However, we note a stark difference in access to PAC by course. For instance, around 44% of engineering students took PAC, relatively higher than management students (40.8%). PAC spending ranges from ₹48 thousand for MBA students to ₹156 thousand for engineering graduates. Regression coefficient also reveals that those who attended PAC to prepare for BTech entrance spent 109% more than those preparing for MBA/PGDM entrances (see Table 4.6). This is mainly because preparation for IIT-JEE takes relatively more time than CAT or other management entrance exam preparation.[15] As shown in the data, engineering students spent an average of 17 months on coaching classes, more than twice the time spent by management students.

We note that access to PAC varies widely depending on various socioeconomic factors. For instance, a slightly higher share of male students attended PAC (43.7%) and spent considerably more on it (around 33% more) than their female counterparts (see Table 4.5). The spending on PAC among male students constitutes more share of family income and total PHE spending than in case of females. This corroborates with several studies concluding that households mostly prefer to invest in sons' education than daughters (Chaudhuri & Roy, 2006; Azam & Kingdon, 2013; Saha, 2013; Kaul, 2018; Kumar & Naincy, 2020; Rani, 2021). However, it is interesting to note that females pursuing management courses incurred a higher PAC expenditure than their male counterparts.

[14] Of the total BTech students covered in the survey, about 83.6% appeared for IIT-JEE and rest took institutional-level and other entrance exams for admission into present course. Similarly, more than half of the management graduates i.e., around 63.7% took Common Admission Test (CAT), whereas remaining 37.3% appeared for other entrance exams such as Xavier Aptitude Test (XAT), Common Management Admission Test (CMAT), Graduate Management Admission Test (GMAT) and other entrance exams.

[15] Top institutes for preparing IIT-JEE such as Resonance, FIT-JEE, Akash institute provide courses for a duration ranging from 1-3 years. Similarly, top institutes for CAT preparation such as PT Education, TIME, Career Launcher provide course for a duration of 6-12 months.

Table 4.5: Pre-Admission Coaching status of PHE Graduates by Socioeconomic Factors

	Share of Students Attended			*Duration (months)*			*Total Spending (₹ in thousand)*			*Share of PAC Spending*	
	Engineering	Management	Overall	Engineering	Management	Overall	Engineering	Management	Overall	% of Annual Family Income	% of Education Spending
Gender											
Female	41.01	41.60	41.29	17	7	12	148	58	106	5.71	30.40
Male	44.35	40.31	43.73	17	8	16	157	42	141	7.60	48.67
Caste											
ST*	25.00	0.0	21.88	13	0	13	103	0	103	4.83	44.51
SC	28.48	35.71	29.07	12	4	11	108	40	102	6.31	40.21
OBC	46.81	32.08	44.48	15	7	14	145	37	133	9.49	48.81
General	46.96	43.67	46.13	18	8	16	166	50	138	6.75	43.16
Income Quintile											
Q1(Poorest)	31.86	24.14	31.21	12	7	12	121	48	117	65.33	47.01
Q5(Richest)	52.54	48.24	51.15	20	7	16	194	52	150	2.11	42.99
Total	43.96	40.82	43.30	17	8	15	156	48	135	7.28	45.01

*In the current survey, no ST students in MBA/PGDM courses were covered who took pre-admission coaching.

Being from a lower caste limits the access to PAC in Delhi, as only 21.9% and 29.1% of the ST and SC students took PAC, compared to 46.1% of UC students (see Table 4.5). Regression estimates also confirm this, as OBCs and UCs are 15.6% and 11.5% more likely to attend PAC than ST students (see Table 4.6). Though results hold true across the whole sample, caste identity plays a greater role among those enrolled in government institutions. UC students enrolled in government institutions are 19.1% more likely to attend PAC than their SC/ST counterparts. Further, caste identity limits not only the access to PAC but also its investment level. We note a clear hierarchy in spending wherein UCs reported spending ₹138 thousand on PAC, around 1.35 times more than ST/SC students (see Table 4.5). Choudhury, Kumar & Gill (2021) also found that being from a lower caste limits the access to shadow education among university students in India. The study noted that only 11.8% of the SC students access private coaching compared to 18.7% of upper caste students (ibid: p.9). Not only a less share of lower caste students is attending private coaching, but they also spend significantly less on PAC than UC students, i.e., ₹2,052 against

₹4,106 (ibid: p.9). We find that such inequalities tend to be higher among engineering graduates when contrasted with MBA students. This difference may be due to the free remedial coaching (or at nominal prices) given to SC and ST students in several coaching institutions or Non-Government Organisations (NGOs) in India. Also, the University Grants Commission (UGC), the apex regulatory body for higher education in India, provides financial assistance to these students for taking private coaching.

It is argued that households' economic status determines their demand for private coaching and could lead to unaffordability issues (Tansel & Bircan, 2006; Azam, 2016; Pallegedara & Mottaleb, 2018; Mitra & Sarkar, 2019; Jansen, Elffers & Jak, 2021). Our findings reveal that the share of students from low-income families (Q1) who have attended PAC is 31.2%, quite less than 51.1% in case of wealthy families, i.e., Q5 (see Table 4.5). Regression coefficient also confirms a positive relationship between family income and spending on PAC in Delhi. A unit increase in household income increases the probability of a child attending PAC by three percentage points; relatively higher among those attending private institutions, i.e., 5.7% more likeliness with a unit increase in family income (see Table 4.6). This hierarchy is also reflected in household spending on PAC, which ranges from ₹117 thousand for poorest households (Q1) to ₹150 thousand for richest households (Q5) – indicating a rich-poor gap of 1.3 times (see Table 4.5). This aligns with the findings of Tansel and Bircan (2006) conducted in Turkey, revealing a strong positive relationship between household income and private tutoring spending. It is important to note that low-income families allocate a significant share of their annual family income towards PAC. This share was reported to be 65.3% for Q1 households, which tends to decrease for each successive quintile and becomes a meagre 2.1% for Q5 households (see Table 4.5). Further, house ownership is also an indicator of household wealth and is statistically significant in determining household investment in PAC. Family owning a house spend 29.1% more on PAC of their offspring than families with no house of their own (see Table 4.6).

Table 4.6: Determinants of Demand and Household Spending on Pre-admission Coaching among PHE graduates in Delhi: Heckman Selection Model

	Stage 1: Decision to Attend Pre-admission Coaching			*Stage 2: How Much to Spend on Pre-admission Coaching*		
	Overall (AME)	Govt. (AME)	Private (AME)	Overall (Coeff)	Govt. (Coeff)	Private (Coeff)
gender	.049	.016	.053	-.091	-.055	-.118
	(.035)	(.051)	(.047)	(.096)	(.134)	(.132)
caste (Ref. SC/STs)						
OBC	.156***	.158***	.163**	.050	.131	-.117
	(.043)	(.052)	(.078)	(.163)	(.228)	(.274)
UC	.115***	.191***	.060	.155	.224	.063
	(.038)	(.049)	(.062)	(.148)	(.255)	(.217)
religion (Ref. Hindus)						
Muslim	-.017	.028	-.133*	-.539***	-.586***	-.516*
	(.052)	(.065)	(.080)	(.143)	(.174)	(.309)
Others	.056	.194***	-.014	-.448***	-.537**	-.381**
	(.052)	(.073)	(.066)	(.136)	(.241)	(.189)
lnfamily_income	.030***	.012	.057***	.022	.047	-.011
	(.010)	(.014)	(.015)	(.033)	(.039)	(.062)
sibling	-.017*	-.035***	.003	-.051*	-.013	-.100**
	(.009)	(.016)	(.018)	(.029)	(.054)	(.045)
own_house	.039	.054	.037	.291***	.349***	.194
	(.033)	(.043)	(.050)	(.097)	(.132)	(.152)
father_edu	.011***	.008	.020***	.008	.010	.006
	(.004)	(.006)	(.006)	(.014)	(.017)	(.026)
course	-.028	-.052	-.015	-1.090***	-1.135***	-1.027***
	(.033)	(.046)	(.048)	(.098)	(.143)	(.139)
xii_marks	.147***	.115***	.152***	---	---	---
	(.026)	(.036)	(.038)			
Mills ratio/lambda	-.582**	-.520*	-.627*	---	---	---
	(.277)	(.300)	(.358)			
Constant	---	---	---	11.596***	10.986***	12.365***
				(.766)	(1.009)	(1.393)
Prob.>Chi^2	0.000	0.000	0.000	0.000	0.000	0.000
Observations	1,488	818	670	1,488	818	670

Notes: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1
AME=Average Marginal Effect

A further question, viz, 'do households with more children spend less on PAC?' is also an imperative interrogation and needs to be examined. This is due to the existence of considerable

literature that has established a negative relationship between family size and investment in human capital (Kugler & Kumar 2017; Psacharopoulos & Mattson 2000; Downey 1995). Our analysis also establishes a similar link whereby an addition to family members reduces the probability of attending PAC by 1.7% - further declines if attending government institutions, i.e., 3.5% less likeliness (see Table 4.6). A possible explanation for this relationship may be that the households with more siblings need to spend a large share of their income on food and other household needs like educating the other children. Several studies in India and elsewhere have found a negative relationship between family size and demand for higher education (Galper & Dunn 1969; Chakraborty 2006; Tansel & Bircan, 2006).

Besides, father's education levels also matter in terms of demand and spending on PAC (Tansel & Bircan, 2006; Lakshmanasamy, 2017). We find a statistically significant positive effect of father education on the probability of their child attending PAC, indicating an increased likeliness of 1.1% with a unit increase in the years of education completed by the father (see Table 4.6). This effect is noted to be higher (two percentage points increase with a unit increase in fathers' education) in case the student is currently attending a private institution. This might be since the households with intermediate educational accomplishments tend to be more apprehensive (vis-à-vis both the illiterates) about the future of their wards and hence allocate more resources towards private supplementary education.

To sum, the section presents an alarming picture of the socioeconomic and course-wise disparity in household demand and investment in pre-admission coaching among PHE graduates in Delhi. Students pursuing engineering courses have higher chances of attending PAC vis-à-vis those pursuing management courses. Further, the phenomenon of PAC is reproducing newer forms of caste-based inequalities whereby the students belonging to UCs populace are not only more likely to attend private supplementary coaching (vis-à-vis SC/STs), but they incur a higher quantum of household expenditures too. Findings also suggest pro-male gender discrimination in access to PAC, though the gap is found to be marginal. More importantly, results suggest that the students from economically better-off families are more likely to take PAC and tend to spend more on it. The precise estimation shows that a unit increase in family income increases the probability of a child attending PAC by 0.3 percentage points. To conclude, the shadow education market, by

its very nature, is highly selective and delivers the service only to those student-clienteles who have the ability to pay. Therefore, this section provides a rationale to address these inequalities, especially among the most vulnerable and marginalised.

4.4 Summary of Findings

This chapter provides an empirical account of (a) socioeconomic and institutional inequalities in household expenditure on professional higher education in Delhi along with its determinants and (b) demand and household spending on pre-admission coaching. Major findings of the chapter are as follows:

- The per-student annual household spending on PHE in Delhi is around ₹3 lakh. Of the total spending, ₹1.61 lakh is incurred on fees (admission fee, tuition fee, exam fee, library fee and other fees) and ₹1.54 lakh on non-fee items such as expenditure on food, accommodation, textbooks, stationery, transport, private tuition, mobile, internet and others. Households spend around 16.2% of their annual family income per child to access PHE.

- Family spending on PHE varies widely by type of institution. Annual per-student spending was reported to be ₹2.76 lakh for students attending government institutions and ₹3.29 lakh for those enrolled in private institutions – marking a significant difference. OLS estimates confirm that students enrolled in private institutions spent around 21.6% more on their education than students studying in government institutions.

- Household spending on PHE varies widely by students' socioeconomic factors. A pro-male bias in spending is noted for MBA/PGDM students, whereas female students spend more on engineering education. Further, UC students incur the highest expenditure (₹3.19 lakh), followed by OBCs (₹2.73 lakh), and as expected, SCs and STs spent the lowest, i.e., ₹2.54 lakh and ₹2.32 lakh, respectively. OLS estimates reveal that a unit increase in family income increases household spending on PHE by 3.4%. Likewise, education expenditure tends to increase with the levels of father’s education. With an increase in each year of father’s education, household spending on PHE in Delhi increases by around one per cent.

- While scholarships worked as a substitute for household spending on PHE in Delhi, availing a student loan complements it. Students receiving scholarships spend 12.6% less on PHE than students who did not receive it. On the other hand, SL borrowers spend 48.6% more on education than their non-borrower counterparts.

- About 43.3% of the students took pre-admission coaching for an average of 15 months to prepare for entrance exams for admission in the present course. Per-student total amount spent on coaching was ₹135 thousand, which accounts for around 7.3% of their annual family income and 45% of their annual education spending in the current course. Not only more share of engineering students (44%) took PAC than management students (40.8%), but they also spent a significantly higher amount on it than their counterparts, i.e., a total of ₹156 thousand against ₹48 thousand. Gender, caste and family income are statistically significant in determining the access and household spending on PAC. Being a male or belonging to upper caste or wealthy families not only increases the chances of attending coaching but also increases the tendency to spend more on it.

Appendix to Chapter 4

APPENDIX 4.1
FINANCIAL ASSISTANCE RECEIVED BY PHE STUDENTS IN DELHI

Of the total PHE students covered in the survey, around 11.7% reported receiving financial assistance in the form of scholarships (see Table A4.1).[16] We note a stark difference in the share of students receiving scholarships by type of course, as around 13.5% of the total engineering students received scholarships, compared to only 5.1% of management graduates. The differences are not only limited to the share of students receiving the assistance but also to the annual amount per student allocated. Overall, a PHE student receives ₹42.8 thousand per annum as scholarship, which covers about 14.2% of their annual education spending. The corresponding figure was reported to be ₹38.3 thousand in management courses and ₹43.2 thousand in engineering courses, covering around 8.7% and 16.4% of annual education spending in the respective courses.

Access and amount of scholarships for PHE students in Delhi vary by socioeconomic and institutional factors. Findings reveal that the share of male students receiving a scholarship is 13%, which is quite low among female students, i.e., only 5.7% (see Table A4.1). However, the annual per-student amount allocated as scholarship is noted to be relatively higher in case of female students (₹54 thousand) than males (₹41.8 thousand). This gender gap in scholarship amount further increases in management courses (₹61.7 thousand against ₹22.8 thousand), which might result from specific policies to assist and motivate females to participate in higher education.

We observe a clear hierarchy in access and amount of scholarship received by students from different social groups. The highest share of students receiving scholarship was reported for OBC community (17%), followed by ST/SCs students taken together (14.7%), and lastly, UC students, i.e., 9.3% (see Table A4.1). Though less share of ST/SC students receives scholarship, their scholarship amount is the highest among all caste groups. The annual per-student amount for

[16] Students reported receiving any of the four types of scholarships: (i) Central government scholarship, (ii) State government scholarship, (iii) institutional scholarship, or (iv) any other educational scholarship.

scholarship ranged from ₹38.1 thousand (UCs) to ₹61.8 thousand (ST/SCs), reporting a stark difference of 1.6 times. This amount covers around 24.6% of the annual education spending of ST/SC students, and the corresponding figure is 14.6% for OBCs and 11.9% for UCs. Hence, caste identity plays a crucial role in accessing scholarships among PHE graduates in Delhi. This is apparent as most of the students from marginalised sections (including SCs and STs) come from lower-middle-income families with limited resources, and they might find it challenging to pursue costly education without any scholarship. The government of India provides several scholarship schemes to help ST and SC students pursue higher education in India. One such scheme was approved in 2007, namely '*Central Sector Scholarship Scheme of Top Class Education for SC Students'*,[17] which aims at recognising and promoting quality education amongst students belonging to SCs, by providing full financial support. Similarly, another scheme, namely '*National Fellowship and Scholarship for Higher Education of ST students,* '[18] aims to encourage meritorious ST students to pursue courses at UG and PG levels in professional fields such as Management, Medicine, Engineering, Information Technology and Law.

Highest share of students receiving scholarships was reported among Muslims (18.6%), followed by other religions taken together (16.1%) and the least among Hindus, i.e., 10.9% (see Table A4.1). A major reason behind the higher share/chance of non-Hindu students receiving scholarship is the minority scholarships provided by the Government to Muslim students, which might supplement their spending on education and decrease the overall spending. One such scheme is *Merit Cum Means Based Scholarship for Students Belonging to Minority Communities*,[19] which aims to provide financial assistance to the poor and meritorious students belonging to minority communities to enable them to pursue professional and technical courses. Muslims, Sikhs, Christians, Buddhists, Jain, and Zoroastrians (Parsis) have been notified as minority communities under Section 2 (c) of the National Commission for Minorities Act, 1992. A total of 60,000

[17] Retrieved from: https://scholarships.gov.in/public/schemeGuidelines/Top_Class_Education_Scheme_2018.pdf (Accessed 20th November 2021).

[18] Retrieved from: https://scholarships.gov.in/public/schemeGuidelines/tribalfellowshipguideline.pdf (Accessed 20th November 2021).

[19] Guidelines available at: https://scholarships.gov.in/public/schemeGuidelines/MoMA_MCM_2018-20.pdf (Accessed 20th November 2021).

scholarships are targeted to be distributed as 'Fresh' scholarships, besides renewal scholarships.

Table A4.1: Status of Financial Assistance Received by PHE Students in Delhi

	Share of Students Receiving			*Annual Amount (₹ in thousand)*			*Share to Total Education Spending*		
	Engineering	Management	Overall	Engineering	Management	Overall	Engineering	Management	Overall
Gender									
Female	6.47	4.80	5.68	48.18	61.67	53.96	17.23	14.51	15.49
Male	14.43	5.24	13.02	42.93	22.78	41.77	16.49	5.06	14.41
Caste									
ST/SC*	16.13	0.0	14.71	61.82	0.0	61.82	24.52	0.0	24.58
OBC	19.15	5.66	17.01	40.47	31.67	40.01	15.82	8.70	14.65
UC	10.64	5.31	9.29	37.81	40.00	38.12	14.11	8.48	11.92
Religion									
Hindu	12.76	3.99	10.93	46.08	43.80	45.92	17.32	10.09	15.23
Muslim	20.48	7.14	18.56	20.32	31.00	20.92	8.86	11.67	8.91
Others	16.42	15.38	16.13	44.72	26.50	39.12	17.77	4.42	11.07
Income Quintile									
Q1 (Poorest)	20.19	6.90	19.08	52.26	21.00	51.30	22.01	5.74	20.65
Q5 (Richest)	14.12	2.35	10.31	32.58	17.50	31.46	11.79	3.49	8.99
Institution									
Govt	18.79	5.19	16.27	38.02	40.25	38.15	15.45	9.93	13.80
Private	6.59	4.94	6.19	63.27	36.14	58.40	22.29	7.61	17.76
12^{th} Marks									
<80%	12.06	2.81	9.36	37.90	41.25	38.14	14.43	9.37	12.70
>80%	14.32	7.97	13.35	45.77	37.27	44.96	17.43	8.46	14.98
Total	13.51	5.06	11.74	43.20	38.33	42.77	16.44	8.70	14.25

*In the current survey, no SC/ST students in MBA/PGDM courses were covered who received any scholarship.

We expected that households' economic status significantly impacts the likeliness of their ward receiving scholarship for education. Due to continuous increases in education costs, poor students often face difficulty accessing it, particularly costly professional courses. It is argued that even if some poor households send their wards to pursue education, they spend significantly less on it than rich households, which might affect the quality, continuation, and performance of students in their studies. Therefore, it is quite important to look at the income-based variations in

access to scholarships in Delhi. We observe a clear impact of family's economic status on access to scholarships. Share of students receiving scholarships decreases for the rich income quintile. Only about 10.3% of students from the richest income quintile (Q5) receive scholarships, compared to 19.1% of students from the lowest quintile, i.e., Q5 (see Table A4.1). Though a similar pattern is observed for the amount of scholarship, it covers a significant share of 20.6% of annual education spending in the current course among the poorest households, whereas it covers only 8.9% of education spending of rich households. This indicates that scholarship schemes, as by its very objective, are targeted toward financially supporting students from low-middle-income families to cover their educational expenses.

Apart from individual and household factors, factors relating to students' academic background also influence the likeliness of receiving scholarship. One such factor is the type of institution in which the student is enrolled (government or private). We note that access to scholarships varies widely by institution type. Estimates suggest that the share of PHE students receiving scholarships is remarkably higher in government institutions (16.3%) than in private ones, i.e., 6.2% (see Table A4.1). Contrarily, the average amount of scholarship received by students in private institutions (₹58.4 thousand) is remarkably higher than that in government institutions (₹38.2 thousand). This is why scholarship covers 17.8% of annual education spending in private institutions, which is relatively less in government institutions (13.8%). Scholarships are largely provided by government institutions – though a few eminent private institutions also provide some forms of scholarship (such as merit scholarship and fee waiver), mostly to the students from economically weaker sections. It would be interesting to probe the issue further because it is argued that students from socially deprived sections face entry barriers, even in government institutions, and drop out after admission.

Relatively more students who secured more than 80% marks in senior secondary examination receive scholarship (13.3%) than those securing less, i.e., 9.4% (see Table A4.1). Further, the amount received as scholarship by the former category students (₹44.9 thousand) is higher than the latter category students (₹38.1 thousand). This might be an outcome of the scholarships provided to meritorious students by the Government of India. For instance, the

'*Central Sector Scheme of Scholarship for College and University Students*'[20] aims to provide financial assistance to meritorious students from low-income families to meet a part of their day-to-day expenses while pursuing higher studies. Students who secured above 80% in senior secondary and are pursuing regular courses in Colleges/Institutions recognised by All India Council of Technical Education, UGC Act, 1956, Medical Council of India, Dental Council of India, and respective regulatory authorities are eligible for the scheme.

Net Household Spending in PHE in Delhi: Accounting for Scholarship Amount

We also estimate the net household spending on PHE in Delhi, considering the annual per-student scholarship amount received by PHE graduates. The net household spending on PHE is ₹2.57 lakh per annum, which is around 85.7% of the gross household spending on PHE (see Table A4.2). This reports that financial assistance in terms of scholarships covers approximately 14% of the total household cost of PHE in Delhi, as discussed in the previous section. However, we find a huge inter-course gap in net PHE spending. Those pursuing management courses spent ₹4.02 lakh per annum compared to ₹2.19 lakh spending among engineering graduates, reporting a gap of around 1.83 times between the two courses. Similarly, the among varies from ₹2.38 lakh to ₹2.70 lakh between government and private institutions. Apart from institutional factors, we also examine variations in net PHE spending based on the socioeconomic settings of students.

Like gross household spending, we note stark differences in net PHE spending by gender, caste, and family economic status. We find that female students spend more on PHE than their male counterparts. Students from backward castes spend considerably less on PHE than their UC counterparts. Similarly, a clear hierarchy in spending is seen across the income quintile, wherein the spending increases with an upward shift in the quintiles, ranging from ₹1.97 lakh to ₹3.18 lakh between Q1 and Q5. To conclude, the household cost for PHE in Delhi is quite high even after controlling for the scholarship amount received by students. Therefore, PHE in Delhi is highly selective and delivers education only to those who have the ability to pay.

[20] Guidelines available at: https://scholarships.gov.in/public/schemeGuidelines/Guidelines_DOHE_CSSS.pdf (Accessed 20th November 2021).

Table A4.2: Net Per-Student Household Spending on PHE in Delhi by Socioeconomic Factors

		Net Annual Spending (₹ in lakh)			*Share to Gross Spending (%)*		
		Engineering	Management	Overall	Engineering	Management	Overall
Gender	Female	2.31	3.63	2.94	82.77	85.49	84.51
	Male	2.17	4.28	2.48	83.51	94.94	85.59
Caste	ST	1.68	1.75	1.59	69.59	100.0	68.44
	SC	1.97	2.65	1.98	77.70	100.0	77.78
	OBC	2.15	3.32	2.33	84.18	91.30	85.35
	General	2.30	4.32	2.82	85.89	91.52	88.08
Income Quintile	Q1 (Poorest)	1.85	3.45	1.97	77.99	94.26	79.35
	Q5 (Richest)	2.44	4.85	3.19	88.21	96.51	91.01
Institution	Government	2.08	3.65	2.38	84.55	90.07	86.20
	Private	2.21	4.39	2.70	77.71	92.39	82.24
Total		2.19	4.02	2.57	83.55	91.30	85.75

APPENDIX 4.2

Table A4.3: Summary statistics of the variables used in the Analysis

Variables	NOB	Mean	SD	Min	Max
Dependent Variables					
lnhhexp_PHE	1,475	12.392	0.716	8.19	14.23
PAC	1,508	0.433	0.496	0	1
lnPAC_exp	633	11.435	0.935	8.29	13.12
Independent Variables					
gender	1,508	0.825	0.380	0	1
caste	1,508	3.486	0.778	1	4
religion	1,508	1.188	0.525	1	3
lnfamily_income	1,508	13.603	1.273	10.49	16.30
sibling	1,508	1.588	1.123	0	8
own_house	1,508	0.813	0.390	0	1
father_edu	1,508	13.805	3.311	0	21
part_time_job	1,508	0.213	0.409	0	1
inst_type	1,508	0.450	0.498	0	1
course	1,508	0.210	0.407	0	1
place_stay	1,508	1.310	0.644	1	3
scholarship	1,508	0.118	0.323	0	1
student loan	1,508	0.138	0.345	0	1
cc_activities	1,508	0.239	0.426	0	1
pvt_tuition	1,508	0.115	0.319	0	1
xii_marks	1,508	0.596	0.491	0	1

NOB=Number of Observations; SD=Standard Deviation

Table A4.4: Determinants of Household Spending on PHE in Delhi: Heteroscedasticity-consistent OLS Results

	Eqn. 1 Overall	*Eqn. 2* Engineering	*Eqn. 3* Management	*Eqn. 4* Government	*Eqn. 5* Private
gender	.061	.086	.073	.072	.046
	(.054)	(.071)	(.088)	(.078)	(.077)
caste (Ref. – ST)					
SC	.117	.068	.372	.125	.125
	(.145)	(.144)	(.603)	(.153)	(15.526)
OBC	.168	.113	.679	.170	.241
	(.142)	(.141)	(.567)	(.150)	(15.526)
UC	.178	.063	.880	.249*	.148
	(.140)	(.140)	(.558)	(.146)	(15.526)
religion (Ref. – Hindu)					
Muslim	-.182***	-.131*	-.424*	-.313***	.055
	(.074)	(.076)	(.245)	(.100)	(.104)
Others	.020	-.106	.274*	.038	.012
	(.073)	(.079)	(.148)	(.130)	(.088)
lnfamily_income	.034***	.044***	.007	.053***	.010
	(.014)	(.014)	(.040)	(.018)	(.022)
own_house	.082**	.072*	.116	.158***	-.024
	(.043)	(.044)	(.163)	(.061)	(.057)
father_edu	.009*	.008	.029*	.001	.020***
	(.005)	(.005)	(.015)	(.007)	(.008)
place_stay (Ref. – Home)					
Hostel	.222***	.228***	.187	.196***	.392***
	(.053)	(.058)	(.126)	(.062)	(.097)
Other	.258***	.204***	.352***	.277***	.219***
	(.046)	(.047)	(.114)	(.065)	(.062)
part_time_job	.072**	.078*	.119	.082*	.061
	(.039)	(.042)	(.106)	(.050)	(.054)
inst_type	.217***	.203***	.259***	---	---
	(.036)	(.040)	(.087)		
course	.280***	---	---	.205***	.349***
	(.053)			(.077)	(.077)
scholarship	-.112**	-.156***	.191	-.196***	.105
	(.053)	(.056)	(.162)	(.065)	(.082)
student_loan	.487***	.383***	.609***	.532***	.344***
	(.042)	(.047)	(.081)	(.054)	(.069)
cc_activities	.088**	.070	.107	.014	.161**
	(.044)	(.049)	(.106)	(.055)	(.077)

pvt_tuition	.507***	.559***	.193	.558***	.503***
	(.047)	(.047)	(.178)	(.074)	(.060)
Constant	11.051***	10.973***	10.868***	10.802***	11.623
	(.238)	(.250)	(.809)	(.294)	(15.528)
Prob > F Value	0.000	0.000	0.000	0.000	0.000
R square	0.223	0.175	0.278	0.230	0.220
Observations	1,475	1,163	312	806	669

Notes: Robust standard errors (heteroscedasticity-consistent) in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A4.5: Determinants of Household Spending on PHE in Delhi: Stepwise OLS Estimates

	Eqn. 1 Overall	*Eqn. 2* Engineering	*Eqn. 3* Management	*Eqn. 4* Government	*Eqn. 5* Private
			Model 1		
gender	-.078	.041	.043	-.029	-.103
	(.056)	(.074)	(.095)	(.078)	(.077)
caste (Ref. – ST)					
SC	.169	.112	.537	.147	-.564***
	(.142)	(.145)	(.509)	(.147)	(.105)
OBC	.258*	.133	1.022**	.224	-.324***
	(.138)	(.143)	(.452)	(.144)	(.089)
UC	.296**	.113	1.195***	.282**	-.475***
	(.134)	(.139)	(.442)	(.140)	(.071)
religion (Ref. – Hindu)					
Muslim	-.241***	-.161**	-.538**	-.348***	.011
	(.078)	(.081)	(.255)	(.100)	(.096)
Others	.069	-.054	.383**	.120	-.011
	(.084)	(.082)	(.151)	(.152)	(.095)
lnfamily_income	.050***	.042***	.028	.061***	.035
	(.015)	(.015)	(.040)	(.019)	(.024)
own_house	.079*	.055	.057	.118***	.003
	(.047)	(.047)	(.157)	(.066)	(.062)
father_edu	.009*	.010*	.017	.004	.012
	(.004)	(.005)	(.020)	(.007)	(.008)
Constant	11.333***	11.424***	10.881***	11.129***	12.396***
	(.250)	(.260)	(.751)	(.312)	(.278)
Prob > F Value	0.000	0.000	0.000	0.000	0.000
R square	0.034	0.019	0.092	0.051	0.021
Observations	1,475	1,163	312	806	669

			Model 2		
place_stay (Ref. – Home)					
Hostel	.225***	.226***	.183	.188***	.413***
	(.053)	(.056)	(.130)	(.063)	(.088)
Other	.246***	.197***	.326***	.254***	.235***
	(.045)	(.046)	(.113)	(.063)	(.060)
part_time_job	.059*	.055	.127	.065	.054
	(.037)	(.041)	(.094)	(.052)	(.051)
inst_type	.236***	.204***	.293***	---	---
	(.035)	(.039)	(.085)		
course	.305***	---	---	.274***	.333***
	(.048)			(.070)	(.070)
scholarship	-.154***	-.177***	.095	-.217***	.023
	(.053)	(.054)	(.205)	(.063)	(.094)
student_loan	.472***	.370***	.636***	.510***	.338***
	(.042)	(.046)	(.082)	(.054)	(.066)
ca_activities	.117***	.100**	.142	.064	.178**
	(.043)	(.048)	(.100)	(.055)	(.072)
pvt_tuition	.500***	.547***	.195	.538***	.486***
	(.046)	(.046)	(.156)	(.074)	(.057)
Constant	11.897***	11.871***	12.343***	11.882***	12.214***
	(.056)	(.060)	(.135)	(.070)	(.086)
Prob > F Value	0.000	0.000	0.000	0.000	0.000
R square	0.208	0.157	0.212	0.191	0.209
Observations	1,475	1,163	312	806	669

Notes: Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1

CHAPTER 5
LOAN FINANCING OF PROFESSIONAL HIGHER EDUCATION IN DELHI

5.1 Introduction

Several studies in India have argued that students from low-income families have been persistently underrepresented in higher education (Basant & Sen, 2010, 2014; Thorat & Khan, 2018; Tilak & Choudhury, 2019; Choudhury & Kumar, 2021). The inequality in access to professional higher education (PHE) between poor and rich is found to be significant (Tilak & Choudhury, 2019). In fact, some eligible students from disadvantaged groups cannot pursue higher education (HE) due to financial constraints.[1] With the increasing HE costs, student loans are considered as an important method of financing HE in India (Mukherjee, 2007; Gandhar, 2010; Puttaswamaiah, 2010; Panigrahi, 2010; Tiwari & Anjum, 2013; Varghese & Manoj, 2013; Rani, 2014, 2016, 2018; Chalil, 2021). Student loan is considered an important cost-sharing method (between the recipient and supplier of education) and cost-shifting method in HE, as the financial burden is shifted from the parents to the students (Ziderman, 2002; Narayana, 2005). They shift the burden of funding HE from the government to the students and/or their parents. The primary objective of SLs is to bridge the gap between eligibility to attend education and the ability to pay for it. The need for SLs to meet the direct and indirect cost of education (tuition fees, books, stationery, and living expenses) of students belonging to low-income families is widely recognized. Student loans encourage eligible students belonging to a low socioeconomic category to cover their costs of education and repay in the future after securing a job. Beneficiaries of SLs may defer payment for HE until they are gainfully employed after graduation (Ziderman, 2013).

[1] According to the NSO survey, around 21.2% (2007-08) and 19.5% (2017-18) of the respondents cited financial constraints as a reason for never enrolling for education, discontinuing, or dropping out (NSO, 2010, 2020).

They are considered investment loans since borrowers acquire knowledge as well as social and personal qualities that might enhance their future earnings (Li, 2013). Therefore, with a central objective of cost recovery, student loans attempt to ensure the equality of opportunities, equity, and social justice to some extent (Ziderman, 2009).

Loan financing of HE is not a new phenomenon in India. The *National Loan Scholarship Scheme* (NLSS) was introduced in 1963 to improve access to HE among students from Economically Weaker Sections (EWS) and other disadvantaged groups without the government bearing much financial burden in the long run. This scheme was launched with four important objectives: (a) to set up a revolving fund within a period of five to ten years, which would become a self-funding scheme, (b) to prevent wasteful expenditure, enhance allocation of resources, and make students more serious regarding educational and career choices, (c) to enhance the value of education for students, as anything provided free tends to be less valued than anything sold at a price and (d) to make students more cost-conscious and to make them know how much society is investing in their education, which will result in enhancing the internal efficiency in HE (Tilak, 1992). Under the scheme, interest-free loan scholarships were made available to the needy and eligible students to help them finance full-time HE in India, starting from post-matriculation to completion of their desired level of HE. Loans were renewable on an annual basis and ranged from ₹720 per annum (for pre-university and undergraduate courses) to ₹1,750 per annum (for doctoral and postgraduation in professional courses such as medicine, engineering, and technology) depending upon nature and type of education (ibid: p.393). The eligible students include those securing 50% marks in the qualifying exam, whose parental income does not exceed ₹ 25,000, and who do not receive any other scholarship. However, parental income was not taken into consideration in the case of postgraduation, for which merit was the only criterion (ibid: p.393). However, this scheme was abandoned in the late 1980s because of low recovery rates.

Starting from the early 1990s, various committees set up by the Government of India to address the issue of financing education have given due emphasis to the revival of student loans to mobilize resources for HE in India (Punnaya Committee – UGC, 1993; Swaminathan Committee – AICTE, 1994; Ambani-Birla Committee – GOI, 2000). For instance, the *K. Punnaya*

Committee Report[2] (UGC, 1993) recommended increasing the tuition fee in universities and higher education institutions (HEIs). At the same time, it apprehended that such upward revision in the fee structure of the universities may result in denial of access to weaker sections, particularly those who belong to socially and economically backward sections. The committee suggested introducing student loans by the UGC in collaboration with nationalized banks for students aspiring to pursue HE in central universities and expanding its scope to other universities. On a similar ground, the *D. Swaminathan Committee Report*[3] (AICTE, 1994) examined the financing pattern of technical education in India and highlighted that the expenditure is far less in proportion than developed countries. It emphasised the urgent need for HEIs and government to make long-term resource planning for developing technical education in the country. The committee recommended setting up an *'Educational Development Bank of India'* (EDBI) to provide SLs to needy students and institutions. Further, it suggested establishing a *'National Loan Scholarship Scheme'* under the agencies of EDBI to ensure equal access to technical education among the financially weak. Similarly, *Ambani-Birla Committee*[4] (GOI, 2000) redefined the role of government in HE from a regulator to a facilitator by advocating for a gradual transition to complete cost recovery from students. The committee advised user-pay principles and suggested creating a credit market for education to support students from economically and socially disadvantaged groups through student loans and grants. The UGC committee for *Promotion of Indian Higher Education Abroad* (PIHEAD) also recommended establishing a financing mechanism for international education. It suggested providing SLs to Indian students going abroad and international students coming to India for higher studies (AIU, 2001). Similarly, the Tenth (Mid-term appraisal document) and Eleventh five-year plan also stressed on attracting students from disadvantaged sections of society to HE by providing financial support through student loans (NUEPA, 2008).

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[2] Report retrieved from: https://www.ugc.ac.in/oldpdf/pub/report/9.pdf (Accessed 2nd April 2022).

[3]Committee report is available at: http://14.139.60.153/bitstream/123456789/412/1/Report-Report%20of%20the%20High%20Power%20Committee%20for%20mobilization%20of%20Additional%20Resources%20for%20Technical%20Education_D12052%20.pdf (Accessed 2nd April 2022).

[4] The report titled 'A Policy Framework for Reforms in Education' was submitted prime minister's Council on Trade and Industry on 24th April 2000.

Likewise, the *CABE Committee Report* (2005) reviewed trends in financing higher and technical education since the 1990s. It discussed the profound crisis of higher education in India with increasing costs and needs of the system on the one hand and shrinking provisions for budgetary resources on the other. The committee suggested increasing the fees to ensure financial autonomy and, at the same time, ensuring the availability of education loans for eligible students who cannot afford to pursue HE due to financial constraints. However, a substantial number of private HEIs with unregulated fee structures have made higher education costly, which deters students from low-income families from pursuing HE. Further, recognizing the increased private participation in HE, the *National Knowledge Commission* (2008) and *Yashpal Committee* (2009) suggested that the primary focus should be on making education affordable through scholarships or loans. It was argued that SLs should be provided to ensure access to private HEIs.

In the mid-1990s, the Government of India announced a restructured student loan scheme as an alternative method of financing higher education. A new program operated by the commercial banks came into existence, which was later modified by the *Reserve Bank of India* (RBI) and *Indian Banks' Association* (IBA) by framing a *Comprehensive Educational Loan Scheme*[5] in 2001 with a view to ensure that no deserving student is deprived of HE due to financial constraints. The scheme was announced in the Union Budget 2001-02 on 7th April 2001 and was discussed at a meeting of the finance minister and CEOs of banks. Subsequently, almost all public sector banks were required to float education loans, and they came up with various educational loan schemes. The scheme was revised in 2012[6] and 2015 and further amended in 2016. Guidelines of the latest *Model Education Loan Scheme (2015)* are briefly presented in Table A5.1 in the appendix. According to this scheme, commercial banks provide SLs that cover the expenses of tuition fees and other fees payable to the institution, including travel expenses, books, stationery,

[5] This scheme was launched with the recommendation of Swaminathan Committee (or Higher Education Finance Corporation), set up in 1990s by the Government of India. Prior to this, National Loan Scholarship Scheme was in operation since 1963.

[6] RBI constituted the Nair Committee in 2012 to re-examine the existing classification and revise the guidelines for priority sector lending. The committee suggested that limit under education loans may be increased to ₹15 lakh for studies in India and ₹25 lakh in case of studies abroad, from the existing limits of ₹10 lakh ₹20 lakh, respectively. However, we note that this suggestion is not considered in the latest Model Education Loan Scheme of IBA (see Table A5.1). For details see: https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=25990 (accessed 16th April 2021)

and other equipment. An upper limit of ₹10 lakh was fixed for the students studying within India and ₹20 lakh for those studying abroad. Many commercial banks operate this scheme with a standard set of conditions within the broader framework of IBA and RBI. For example, the State Bank of India (SBI) provides student loans to Indian nationals for pursuing higher education in India or abroad. The repayment commences one year after completion of the course or six months after securing a job, whichever is earlier, and the loan amount is to be repaid within ten years of repayment commencement (Rani, 2018).

To provide access to student loans, the Government of India introduced an interest subsidy scheme known as the *Central Scheme of Interest Subsidy*[7] (CSIS) in 2009, which is linked to the *IBA Model Education Loan Scheme*. Under the scheme, a full interest subsidy is provided for SLs taken for professional education during the study and moratorium period. Students whose annual parental income was below ₹4.5 lakh were eligible for the scheme, and the loans were disbursed without any collateral security and third-party guarantee. To date, an amount of ₹9,408 crores has been disbursed towards interest subsidy, and around 2.5 million students have benefitted from the scheme.[8] On 28th March 2018, the *Cabinet Committee on Economic Affairs* (CCEA) approved continuing the *'Credit Guarantee Fund Scheme'* for education loans. The CCEA also approved continuation and modification of the CSIS scheme with a financial outlay of ₹6,600 crores from 2017-18 to 2019-20. It is anticipated that it will benefit around 10 lakh students during the period. It ensures education loan disbursement by commercial banks up to ₹7.5 lakh per student without seeking any collateral security and third-party guarantee.

The then honourable Finance Minister, in his Budget speech 2015-16, proposed to set up an entirely IT-enabled based Student Financial Aid Authority to monitor both scholarships and student loans together through *Pradhan Mantri Vidya Lakshmi Karyakram*. Later on, the government also introduced the *Skill Loan Scheme* in July 2015 for students pursuing technical and vocational courses. Further, on Independence Day (15th August 2015), the Government of

[7] Guidelines regarding the scheme are briefly discussed in Table A5.2 in the appendix (p.167).

[8] For details see: https://timesofindia.indiatimes.com/business/india-business/ccea-approves-continuation-of-credit-guarantee-fund-scheme-for-education-loans/articleshow/63523073.cms (Accessed on: 12th April 2018).

India launched a website called *Vidya Lakshmi Portal* (*www.vidyalakshmi.co.in*) for students seeking education loans. It is the first-of-its-kind portal for students seeking education loans. The primary aim of this was to ensure that no student misses out on higher education due to a lack of funds. Five major banks, including SBI, IDBI, and Bank of India, initially integrated their system with the portal, which has increased to 37 banks and 118 loan schemes at present.[9] A student seeking an education loan can apply for multiple banks by filling up a *'Common Education Loan Application Form'* at the portal. Students can view, apply, and track their education loan applications anytime and anywhere by accessing this portal. However, a student can apply for a maximum of three banks through this portal. All the banks accept this form as prescribed by IBA.

Like the central government scheme, the government of NCT of Delhi, as a part of its 70 Action Points, envisaged the *'Higher Education and Skill Development Guarantee Scheme'* (HESDG)[10] in September 2015. It included creating a corpus of ₹30 crores called the *Higher Education and Skill Development Credit Guarantee Fund*. The scheme aims to provide financial support to meritorious students pursuing HE in Delhi and those pursuing HE from central and state government universities or institutions in other states of India. According to this scheme, eligible students can avail collateral-free loans of up to ₹10 lakh from approved commercial banks (a total of 14 commercial banks), with the Delhi government acting as a guarantor of loan repayment. Further details of the scheme, such as eligibility, interest rate, collateral, and repayment, are given in Table A5.3 in the appendix (p.168). As per the official data, a total loan amount of ₹12.3 crores has been sanctioned to 348 students during 2015-16 to 2021-22.[11] The average loan amount sanctioned was reported to be ₹3.49 lakh during the same period. However, the acceptance rate is relatively less.

Overall, there is a clear policy focus on financing higher education through student loans in India. In this context, four major questions dealt in this chapter are: How has the student loans market in India expanded during the last one and a half decades? Who are the students in PHE in

[9] For details visit: https://www.vidyalakshmi.co.in/Students/ (Accessed on: 13th April 2018).

[10] Available at: https://edistrict.delhigovt.nic.in/eDownload/FaqForm/Faq_3005.pdf (accessed 3rd April 2022).

[11] Available at: https://news.careers360.com/rs-1213-cr-sanctioned-student-loan-from-2015-2021-under-delhi-govt-scheme (Accessed 10th April 2022).

Delhi availing SLs, and how much? What major difficulties do graduates face while accessing SLs, and how do students' experiences vary by their socioeconomic and institutional settings? How does the participation in academic and non-academic activities vary between student loan borrowers and non-borrowers?

The rest of the chapter proceeds as follows: Section 5.2 maps the growth of student loan market in India during the last one and a half decades (using the RBI data) and examines the all-India picture of loan financing of higher education (using NSO 75th education round data). Section 5.3 examines the pattern of socioeconomic and institutional inequalities in access to SLs among PHE students in Delhi, along with its determinants. Using qualitative information from interviews, section 5.4 explores the complexities in the SLs market in Delhi and discusses students' experiences regarding loan financing of education. The last section concludes by providing a summary of major findings.

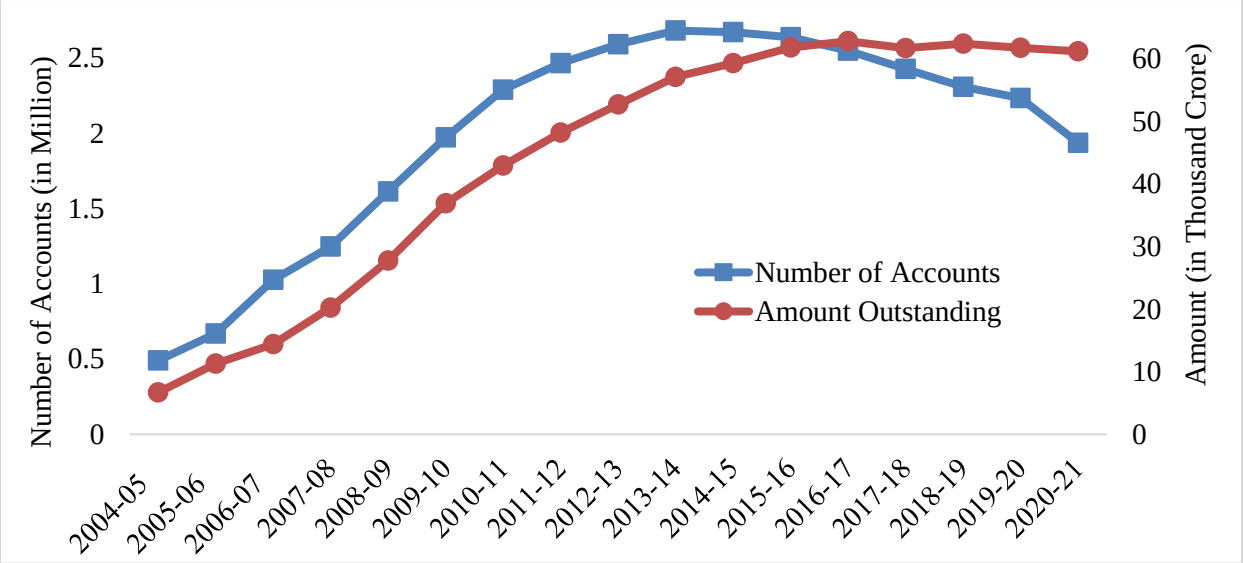
5.2 Growth of Student Loans Market in India

This section maps the growth of the student loans market in India, using the data made available by Reserve Bank of India (RBI) in *'Statistical Tables relating to Banks in India'* annually from 2004-05 to 2020-21 - wherein the RBI floated a new policy of loans for the Indian students. The dataset provides information regarding the total number of active education loan accounts, amount outstanding by type of bank and different states. Further, this data is supplemented by the information provided by '*All India Survey of Higher Education'* (AISHE) and '*Statistics of Higher & Technical Education,'* provided by the Ministry of Education (MoE).

Student loans in India have experienced substantial growth in terms of number of accounts and amounts sanctioned during the last one and a half decades. The number of SL accounts increased from 4.9 lakh in 2004-05 to 19.4 lakh in 2020-21, registering an increase of about four times during this period (see Figure 5.1). Keeping pace with accounts, the outstanding loan amount marked a significant increase of about nine times during the same period, i.e., from ₹6,694 crore to ₹61,213 crores. However, the initial momentum of SL growth has been lost in recent years. Annual growth rate of SL accounts was 53.7% during 2006-07, from where it started declining

(though positive) and gradually became negative from 2014-15 onwards. In 2020-21, there was a sharp fall of 13% in SL accounts, highest in 15 years. Perhaps, risk-averse students may be unwilling to borrow, given their gloomy career prospects. Further, the last five-year data reveals that the number of SL accounts decreased at a higher rate than the amount outstanding. This indicates that commercial banks prefer lending high-amount loans over collateral-free small loans. The increased Non-Performing Assets (NPA) in education loans might be an explaining factor here, which is mainly driven by unregulated expansion of private institutions, poor employment opportunities, and uneven demand-supply mismatch in the labour market (Chitra, 2019).

Figure 5.1: Growth of Student Loan Accounts and Amount Outstanding in India



Source: Compiled by the Research Scholar from Statistical Tables relating to Banks in India, RBI[12]

While SL accounts increased at a Compounded Annual Growth Rate (CAGR) of 10.6% between 2004-05 to 2020-21, growth of outstanding loan amount is observed to be steeper with a CAGR of 15.9% during the same period (see Table 5.1). The growing demand for higher education, particularly professional courses, may be the primary explanation for this growth. It is important to note that the number of beneficiaries has increased at a higher pace than student enrolment in HE. The average annual growth rate of student enrolment was 7.5%, whereas the corresponding figure was 15.9% in the case of outstanding loan amount. As a result, the per-student

[12] In section 5.2, the source for all the tables and figures is same, until otherwise mentioned.

amount sanctioned as loans grew from ₹5,137 to ₹16,037 between 2004-05 to 2019-20, registering a CAGR of 7.9%. Further, what percentage of university or college students are taking SLs? Results reveal that the share of students in HE accessing SLs increased from 3.8% in 2004-05 to 5.8% in 2019-20, which reached a peak of 9.5% during 2009-10. This raises some important questions: why has there been a decline in student loan take-up in India in recent years? Are students getting enough financial support from their families? Is it because Indian graduates are losing their sheen due to poor employability? Or are they scared of taking loans due to inherent complexities involved in the process? Exploring these questions becomes imperative from the public policy point of view. We explore these issues in section 5.4, using the data collected from interviews.

Table 5.1: Growth of Student Loans Market in India

Year	Number of Accounts	Growth Rate (Accounts)	Amount Outstanding	Growth Rate (Amount)	Higher Education Enrolment	Per-Student Amount	A/c Share to Enrolment
2020-21	19.36	-13.33	61213	-0.95	---	---	---
2019-20	22.34	-3.20	61802	-1.05	385.4	16037	5.80
2018-19	23.08	-4.93	62456	1.11	374	16700	6.17
2017-18	24.28	-4.70	61773	-1.72	366.4	16858	6.62
2016-17	25.47	-3.39	62854	1.65	357.1	17603	7.13
2015-16	26.27	-1.30	61831	4.20	345.8	17878	7.62
2014-15	26.71	-0.37	59336	3.80	342.1	17344	7.81
2013-14	26.81	3.53	57164	8.39	323.4	17678	8.29
2012-13	25.90	5.11	52739	9.37	301.5	17491	8.59
2011-12	24.64	7.71	48220	12.16	291.8	16523	8.44
2010-11	22.88	16.01	42993	16.44	275	15634	8.32
2009-10	19.72	22.23	36924	33.07	207.4	17803	9.51
2008-09	16.13	29.38	27747	36.96	185	14998	8.72
2007-08	12.47	21.52	20258	40.77	172.1	11771	7.25
2006-07	10.26	53.54	14391	27.39	155.5	9253	6.60
2005-06	6.68	36.55	11296	68.75	143.2	7887	4.67
2004-05	4.89	---	6694	---	130.3	5137	3.76
CAGR	10.65	---	15.97	---	7.50	7.89	---

Note: Number of Accounts and Enrolment in Lakh; Amount in crores
Source: Compiled by the Research Scholar from RBI Data; All India Survey of Higher Education and Statistics of Higher & Technical Education, MHRD.

Are there any regional variations in the growth of student loan market in India? This question is imperative as regional imbalances in higher education expansion (in terms of institutions and student enrolment) continue to be a major concern in India.[13] Our analysis reveals that southern region (Andhra Pradesh, Telangana, Karnataka, Kerala, Tamil Nadu, and Puducherry), with 21% of India's total population, alone has about 60% of total SL accounts in India (see Figure 5.2). This is mainly because this region held around 40% of the total professional HEIs[14] in 2018-19 (Choudhury & Kumar, 2021). A similar finding is put forth by Care Ratings (2018) and Chalil (2021), stating that student loans are skewed towards south India regions because of the preference given to technical and professional education. Southern region is followed by Western region holding around 11% of SL accounts in the country. In contrast, ten states and two union territories from eastern and northern regions, accounting for 45.3% of India's population, have only about 18% of country's total SL accounts. The least share of SL accounts was reported for North-eastern region (only 1%). It is surprising to note that nothing has changed in terms of regional share of SL accounts in India since 2004-05. Why has the regional share of SL accounts remained almost constant over the previous one and a half decades? Is it the case that growth of SL accounts is uniform in all regions of the country? We address this by examining regional growth of SL accounts in the country.

The steeper curve of southern region reveals that growth pace in SL accounts was quite considerable in the initial years but gradually came down and started declining after 2013-14 (see Figure 5.3). Specifically, the number of SL accounts in southern region rose from 2.94 lakh in 2004-05 to 11.5 lakh in 2020-21, reporting a CAGR of 8.9%. It is interesting to note that north-eastern region recorded the highest CAGR of 15.5% in SL accounts during 2004-05 to 2020-21, followed by Eastern region (11.2%), Southern (8.9%), Western (8.6%), Central (8.4%) and lastly,

[13] In 2019-20, southern region (including Andhra Pradesh, Telangana, Karnataka, Kerala, Tamil Nadu, and Puducherry), alone holds almost 40% of India's total professional higher education institutions offering courses four major courses, i.e., Medicine, Engineering, Law & Management (AISHE, 2020). In contrast, ten states and two union territories from the eastern and northern regions (Bihar, Jharkhand, Odisha, West Bengal, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Uttarakhand, Uttar Pradesh, Delhi, and Chandigarh) have only about 27% of the total professional HEIs. Similarly, only about 2% of the professional institutions (84 in number) are situated in the eight north-eastern states – including Assam, Manipur, Meghalaya, Sikkim, and Tripura (AISHE, 2020).

[14] Includes institutions providing four major professional courses - Medicine, Engineering, Law, & Management.

Northern region (7.8%). However, to get a detailed picture of the regional spread of SL market in India, it is imperative to explore the state dynamics, which are discussed in this section.

Figure 5.2: Region-wise Share of Student Loan Accounts in India

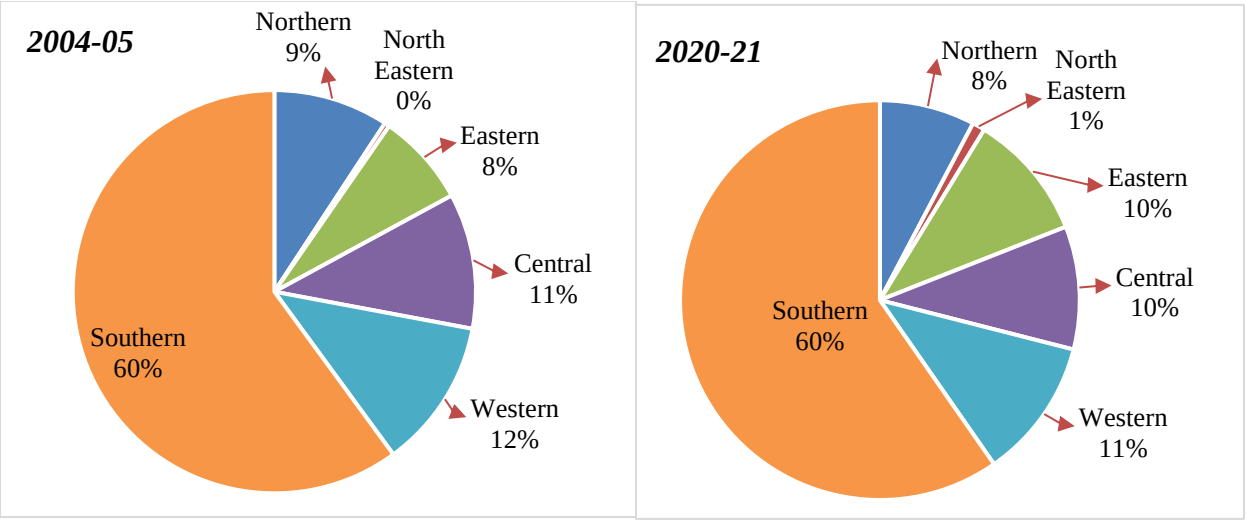
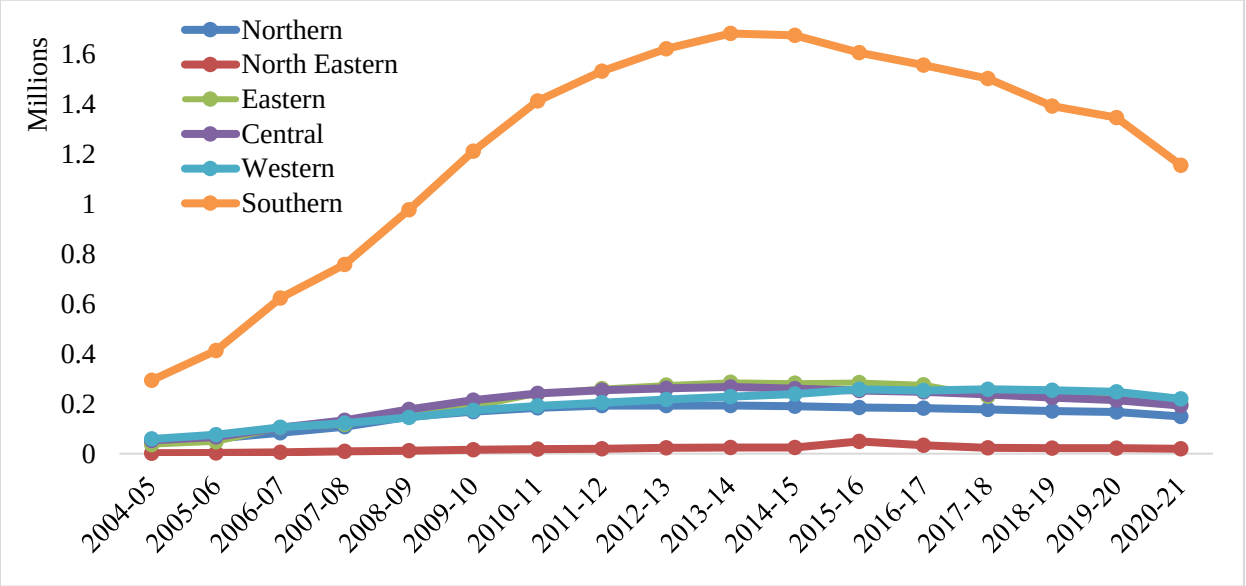


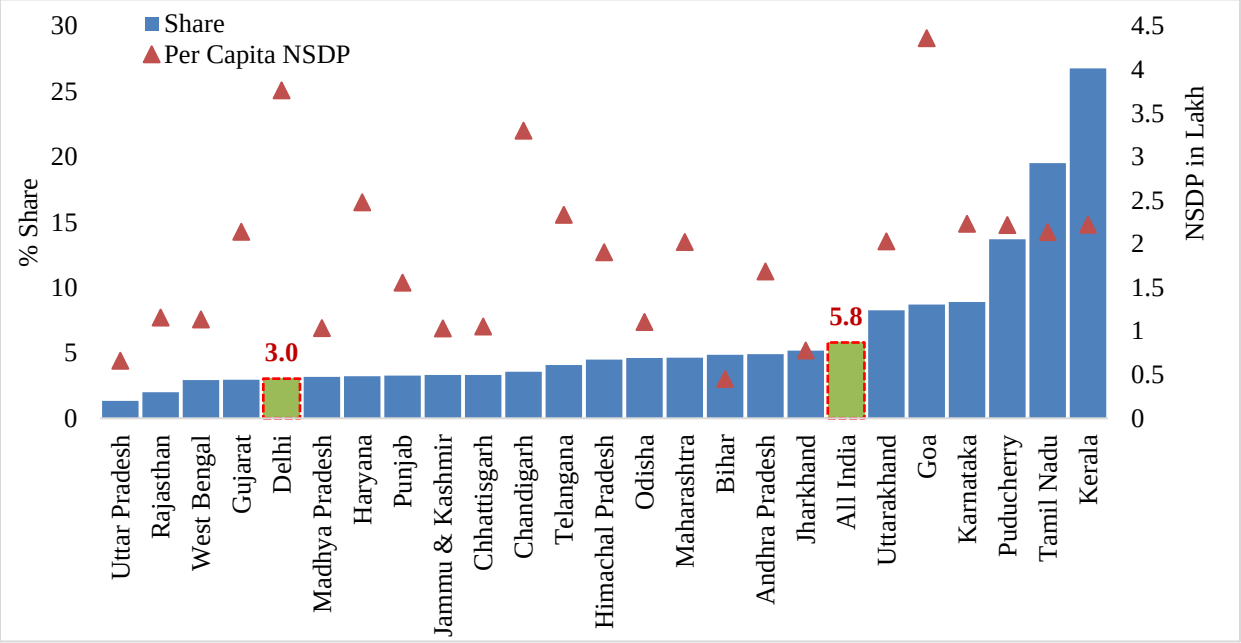
Figure 5.3: Growth of Student Loan Accounts by Region in India



The prevalence of student loans in India varies widely across different states. For instance, in some states/union territories like Kerala, Tamil Nadu, Puducherry, Karnataka, Goa and Uttarakhand, the share of university students availing SLs is higher than the national average of 5.8% (see Figure 5.4). However, this share is below the all-India average in several other major

states/UTS like Uttar Pradesh, Rajasthan, West Bengal, Gujrat, and Delhi. Though students in these states do not take up SLs, they cater to a significant share in enrolment in HE in India. Kerala tops the list with the share being 26.8%, whereas Uttar Pradesh is at the bottom as only 1.3% of college-going students availed SLs in 2019–20. It can be noted that states/UTs where more students borrow for studies are educationally developed (Kerala, Tamil Nadu, Puducherry, and Karnataka). We use per-capita Net State Domestic Product (NSDP) to examine whether economic status is linked with student borrowings or not. We do not find any significant linkage between per-capita NSDP and the share of students borrowing loans for studies. For instance, only around three per cent of the university students in Delhi avail SLs, even though the per-capita NSDP is recorded as relatively high compared to other states.

Figure 5.4: Share of Students Availing Loans by States and their Per-capita NSDP (2019-20)

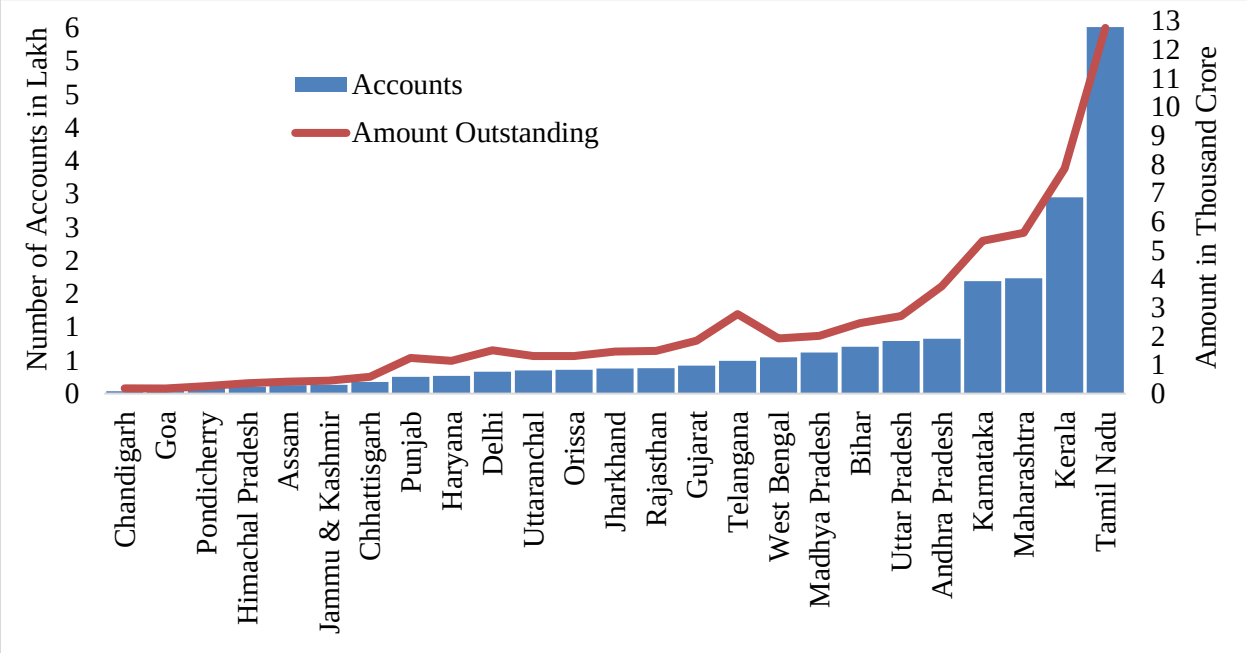


Source: Compiled by the Research Scholar from Statistical Tables relating to Banks in India, RBI (2019-20); All India Survey of Higher Education, MoE (2019-20).

In 2020-21, Tamil Nadu registered the highest number of SL accounts (5.5 lakh) and amount outstanding (₹12,757 crores) in the country (see Figure 5.5). It is followed by states like Kerela, Maharashtra, Karnataka, and Andhra Pradesh, whereas states/UTs such as Chandigarh, Goa, Puducherry, and Himachal Pradesh are at the bottom. Perhaps, states on the lower side could not use education loan schemes effectively. In terms of growth, Arunachal Pradesh registered a

CAGR of 18.1% in number of SL accounts during 2004-05 to 2020-21, followed by Bihar (16.4%), Jammu & Kashmir (15.2%), Uttaranchal (14.8), and Jharkhand, i.e., 13.2% (see Table A5.4 in the appendix for more details). On the other hand, states/UTs like Chandigarh (CAGR of 3%), Delhi (5.6%), Gujarat (6.1%), Punjab (6.5%) and Uttar Pradesh (7.3%) registered the lowest growth in SL accounts during the same period. The only state that registered a negative growth was Andhra Pradesh, and the reason lies in the separation of Telangana in 2014. Nevertheless, to unravel the state-specific dynamics in growth of SL market in India, there is a need to examine the policy interventions of the states on financing of higher education, which is beyond the scope of this chapter.

Figure 5.5: Student Loan Account and Amount Outstanding by Major States (2020-21)

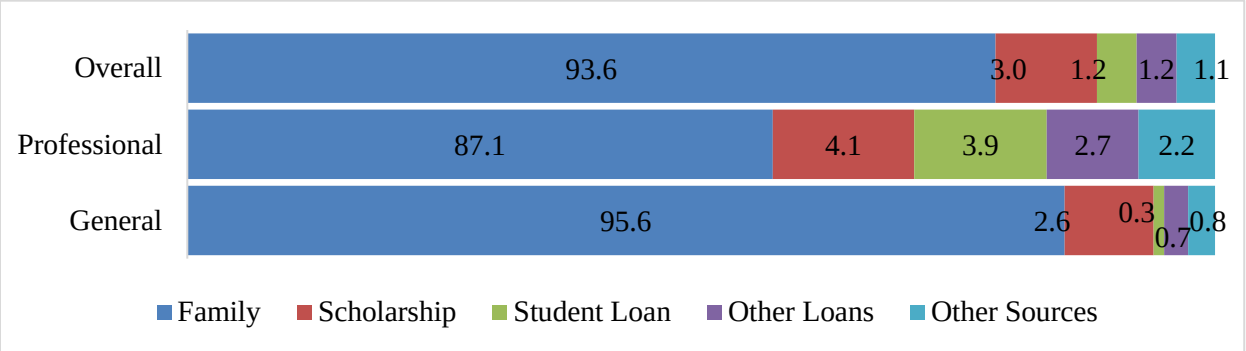


To summarise, although the student loans industry in India has grown significantly (in terms of accounts and amount outstanding), it has witnessed some downturn in recent years. Region-wise and state-wise distribution of SL accounts demonstrate the existence of glaring inequality in access to SLs. High demand for SL in a few states (mostly in southern region) could result from states' proactive welfare-oriented education policies, which, in comparison to other states, may play a more significant role in providing better access to HE among economically disadvantaged students.

Loan Financing of Higher Education in India: An Update from NSO Data

In the NSO 75th education round (2020), respondents were asked to cite their sources of financing education, both primary and secondary. We find that a significant share of students pursuing higher education in India finances their education through family means[15] (cited by 93.6% of respondents), followed by other sources such as scholarships[16] (3%), student loans (1.2%), other loans (1.2%) and other sources, i.e., 1.1% (see Figure 5.6). These sources of funding vary between those pursuing general and professional courses. For instance, a relatively higher share of graduates pursuing professional courses[17] (3.9%) relies on student loans to finance their education than those attending general courses[18] (only 0.3%).

Figure 5.6: Sources of Household Financing of Higher Education in India



Source: Compiled by the research scholar from NSO 75th round unit-level data (2017-18)
Note: Only first major source of funding.[19]

Further disaggregation of courses reveals some interesting insights about loan financing of higher education in India. In 2017-18, the highest share of students availing SL was reported in engineering courses (8.1%), followed by medicine courses (7.3%) and management courses, i.e.,

[15] Family sources of financing education include: (i) earning of student, (ii) other household members, (iii) erstwhile household members and (iv) received as gifts from friends/relatives.

[16] Includes scholarships from educational institution, government, and charitable and other organisations.

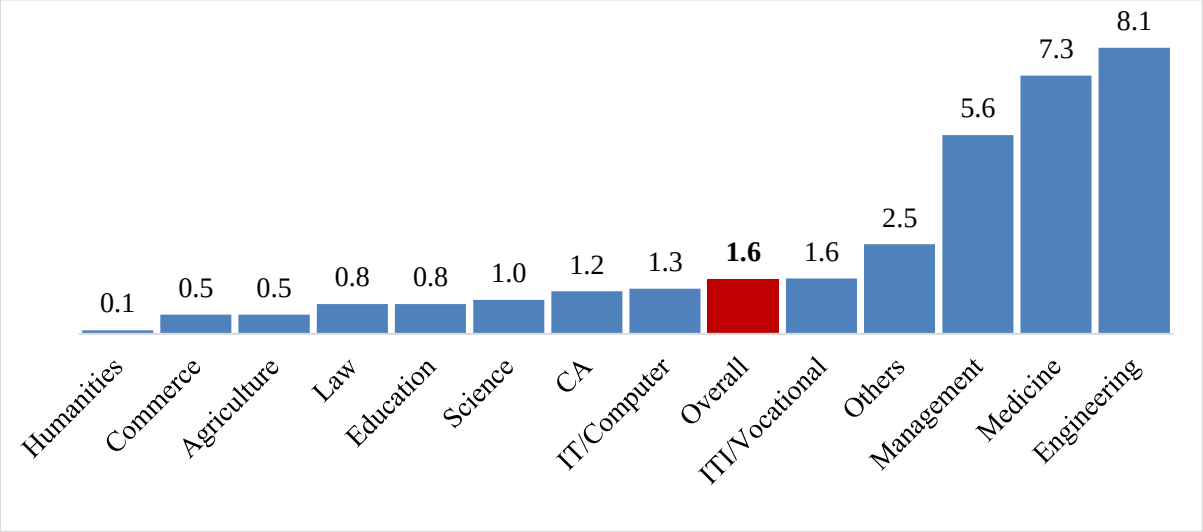
[17] Include courses in medicine, engineering, agriculture, law, management, education, chartered accountancy, IT/computer courses, and courses from Industrial Training Institute (ITI) and recognised vocational training institutes.

[18] Include courses in science, commerce, humanities and social sciences.

[19] NSO 75th round (2017-18) asked the respondents about their two major sources of financing education. While 1.2% cited student loan as first major source of funding education, 0.4% cited it as second major source.

5.6% (see Figure 5.7).[20] On the other hand, the share of graduates availing SLs in general higher education courses is negligible. For instance, only 0.1% and 0.5% of the students pursuing humanities and commerce courses availed SLs, respectively. Therefore, it can rightly be said that loan financing of higher education in India is positively associated with the cost of education, which is relatively high in professional courses.

Figure 5.7: Share of Students availing Student Loans in Higher Education in India by Course



Source: Compiled by the research scholar from NSO 75th round unit-level data (2017-18)
Note: Combined first & second major sources of funding; CA=Chartered Accountancy

Within professional courses, more male students avail SL (5.5%) compared to their female counterparts, i.e., 4.8% (see Table 5.2). Further, share of youth belonging to historically disadvantaged social groups (STs and SCs) is considerably less while accessing SL than students from OBCs. Surprisingly, the share of UC students accessing SLs (4.2%) is less than their SC counterparts (4.8%). Likewise, fewer Muslim students avail SLs (3.6%) than Hindus (5.5%) and students from other religions such as Sikh, Jain, Buddhist, Zoroastrian, and other religions. Further, about 5.6% of individuals belonging to rural areas (*native*) avail SLs, slightly more than those from urban areas.

[20] Relatively higher share of graduates in engineering and management courses availing student loans is one of the major reasons for choosing BTech and MBA/PGDM courses (in the current study) to examine loan financing of professional higher education in Delhi.

Share of students accessing SLs also varies widely by institution type. Around 6.3% of the students enrolled in private institutions reported availing SLs, significantly higher than those studying in government institutions, i.e., 1.7% (see Table 5.2). This considerable gap is mainly due to a substantial inter-institutional gap in fees, which is relatively high in private institutions and compels students to look for alternative sources of financing, such as student loans. More importantly, those belonging to highest consumption quintile households (a proxy for annual family income) avail more SLs to finance their education than their counterparts belonging to the bottom quintile. Share of graduates availing SLs in Q1 (3.7%) is relatively less than the corresponding share of 5.4% in Q5. This raises questions on the very objective of SLs, i.e., providing financial access to needy students.

Table 5.2: Share of Students availing Student Loans in Higher Education in India (2017-18)

		Overall Higher Education	*Professional Courses*
Gender	Female	1.37	4.82
	Male	1.67	5.51
	ST	0.30	1.94
Caste	SC	1.00	4.85
	OBC	2.04	6.64
	UC	1.39	4.23
Religion	Hindu	1.60	5.46
	Muslim	0.77	3.62
	Others	2.01	4.60
Native Location	Rural	0.91	5.62
	Urban	2.34	5.04
Consumption Quintile	Q1 (Poorest)	0.37	3.68
	Q5 (Richest)	2.49	5.35
Institution Type	Government	0.26	1.74
	Private	2.64	6.32
Total		1.55	5.24

Source: Compiled by the research scholar from NSO 75th round unit-level data (2017-18)
Note: Combined First & Second Source

Why is a less share of students from low-middle-income families accessing SL? Is it the case that commercial banks prefer to give SL to students belonging to economically well-off families as they have higher chances of repaying the loan? We address this question based on the quantitative (through questionnaire) and qualitative information (detailed interviews) gathered in

the primary survey in Delhi. As it is difficult to examine Delhi-specific situations using the NSO data (because of a low sample), we substitute the analysis with primary survey data conducted in Delhi from January to August 2021. The results are discussed in the following two sections.

5.3 Who all Access Student Loans in PHE in Delhi?

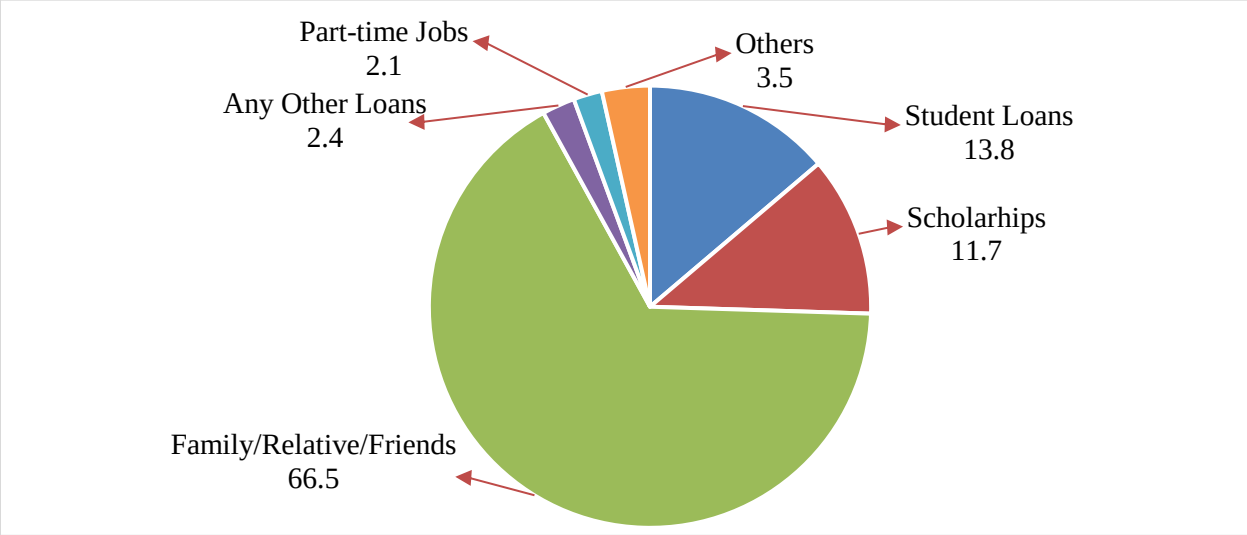
The demand for student loans may be described theoretically as a function of the cost of education, family income, socioeconomic composition of population, and public *versus* private share of HE enrolment (Rani, 2014: p.189). Thus, we examine the socioeconomic and institutional inequalities in access to student loans among PHE graduates in Delhi, using the data collected from the primary survey. This is done based on three questions asked in the student questionnaire (a) Did you apply for student loan to finance your current course? (b) Whether your SL application was accepted by any commercial bank? and (c) If accepted, how much loan was received by you from the bank? We include various individual (gender, caste, and religion) and household factors (family income, sibling, household assets, parental education, and occupation) in the analysis. Besides, we also link the access to SLs with the educational background of the student and institutional factors, such as marks in senior secondary, type of institution and course, institution tie-up with banks, and part-time jobs. Results are discussed using descriptive statistics and regression models (both logit and OLS).

We use a *logit regression model* to examine the determinants of access/demand for SLs and an *OLS regression model* to analyse the determinants of the loan amount sanctioned by commercial banks. A detailed discussion of the econometric specifications and equations of the logit and OLS model are given in Chapter 3 (p.70). While the summary statistics of the variables used for the analysis are given in Table A5.5 in the appendix of this chapter (p.170), their notations are given in Table A3.2 in the appendix of Chapter 3 (p.75).

Results reveal that around 13.8% (208 in number) of the PHE graduates in Delhi finance their education through student loans, and the rest finance their education through other sources such as family/relatives/friends (66.5%), scholarships (11.7%), part-time jobs (2.1%), other loans and borrowings (2.4%) and other sources, i.e., 3.5% (see Figure 5.8). The major reasons cited for

applying for student loans were *'high cost of course'* (cited by 84% of students), followed by *'weak financial situation'* (82.3%) and *'high boarding costs,'*[21] i.e., 60.1% (see Figure 5.9). Other reasons for applying SLs include *'low rate of interest'* (cited by 30.2% students) and *'contacts in bank'*, which is reported by only 13.5% respondents. Besides, around 35.1% students cited *'good college reputation'* as the reason for applying student loans. This is mainly because commercial banks prefer granting SLs to those from highly reputed institutions, as argued by several Indian studies (Panigrahi, 2010; Debi, 2014; Biswal & Chinara, 2020). For instance, the State Bank of India categorises institutions as AA, A, B and C based on their ranking and reputation.[22] The bank provides student loans (under the *scholar loan scheme*) for pursuing higher education in select premier institutions in India, such as Indian Institute of Technology (IITs), Indian Institute of Management (IIMs), and National Institute of Technology (NITs).

Figure 5.8: Sources of Funding Professional Higher Education in Delhi



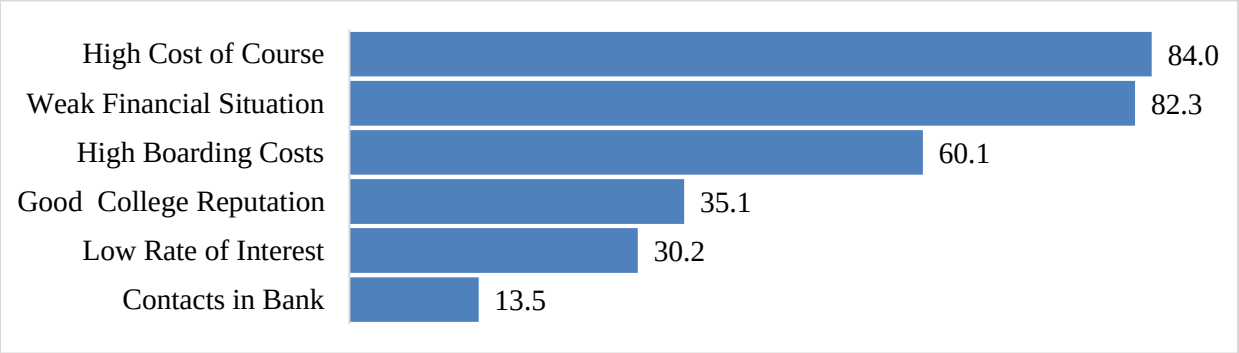
Source: Research scholar's calculation from the primary survey data.[23]

[21] As discussed in Chapter 4, per-student spending on food & accommodation was around ₹99 thousand constituting 21.9% of the total education spending on education. This amount was relatively higher for those staying in hostel (₹105 thousand) and other accommodations (₹114 thousand).

[22] Available at: https://sbi.co.in/documents/16012/25448726/070722-237+Scholar+Institutes.pdf/3b0785b6-7d1b-6a83-279c-25daa5c9e394?t=1657179839908 (last accessed 10th May 2022).

[23] From this point forward, the source for all the tables and figures in this chapter is same, until otherwise mentioned.

Figure 5.9: Reasons for Applying for Student Loans



Overall, 19.1% of the students surveyed applied for student loans and close to three-fourth of them were granted loans, i.e., 72.2% (see Table 5.3). Thus, around 13.8% of total sample received student loans from commercial banks. By discipline, a relatively higher share of students pursuing management courses (26.9%) received SLs from banks than their engineering counterparts (10.3%). On average, a successful loan applicant in Delhi has received ₹7.14 lakh as a loan during their program of study – ₹6.43 lakh for engineering students and ₹8.15 lakh for management students (see Table 5.5). The amount of loan covers around 61.2% and 92.5% of the average total expenses (for the whole course) of engineering and management students. We note that the share of students who received SLs and the amount of loan received varies significantly by socioeconomic and institutional set-ups of the students, which are discussed here.

Gender: The socioeconomic characteristics of PHE students aspiring for student loans in Delhi vary significantly. For instance, more male students (19.5%) have applied for SLs than their female counterparts, i.e., 17% (see Table 5.3). Logit estimates also reveal that male students are 4.9% more likely to apply for SLs than females (see Table 5.4). This pattern is on expected lines in Indian patriarchal society, where the households have virtually no expectations of future financial backing from their female child, and, thus, they have a lesser tendency to borrow and invest in their education. It is argued that student loans work as a ‘negative dowry’ and adversely affect girls' enrolment in higher education (Woodhall, 1987; Mumper & Ark, 1991; Cal-lender & Jackson, 2008), which is also noted in India (Tilak, 2007). This finding aligns with Gayardon *et al.* (2019) and contradicts Hsu & Fisher (2016). Specifically, Gayardon *et al.* (2019) found that female students were 2.5 percentage points less likely to take loans in England (p.979), which the authors attributed to higher debt aversion among women – as confirmed by other studies (Bates *et*

al., 2009; Callender & Mason, 2017). In contrast, Hsu & Fisher (2016) found a positive relationship between being a woman and the likelihood of taking SLs in the United States.

Table 5.3: Access to Student Loans in Delhi by Socioeconomic and Institutional Factors

		% Applied Loan		*% Received Loan (of total applicants)*		
		(Row)*	(Column)**	(Row)#	(Column)##	% Received (Overall Sample)
Gender	Female	17.05	15.63	88.89	19.23	15.15
	Male	19.53	84.38	69.14	80.77	13.50
Caste	ST	6.25	0.69	50.00	0.48	3.13
	SC	23.84	14.24	68.29	13.46	16.28
	OBC	25.07	29.17	71.43	28.85	17.91
	UC	16.62	55.90	73.91	57.21	12.28
Religion	Hindu	19.58	89.58	72.09	89.42	14.11
	Muslim	10.31	3.47	80.00	3.85	8.25
	Others	21.51	6.94	70.00	6.73	15.05
Income Quintile	Q1 (Poorest)	25.43	30.56	59.01	25.00	15.03
	Q5 (Richest)	18.70	17.01	83.67	19.71	15.65
House	No	31.21	30.56	62.50	26.44	19.50
	Yes	16.31	69.44	76.50	73.56	12.48
Land	No	19.58	55.56	68.13	52.40	13.34
	Yes	18.52	44.44	77.34	47.60	14.33
Institution	Government	22.17	63.89	76.09	67.31	16.87
	Private	15.34	36.11	65.38	32.69	10.03
Course	Engineering	15.86	65.63	65.08	59.13	10.32
	Management	31.33	34.38	85.86	40.87	26.90
Total		19.10	100	72.22	100	13.79

*Share of graduates who applied for student loans in the respective population category
**Share of student loan applicants out of total loan applicants
#Share of graduates granted student loans in the respective population category
##Share of successful student loan applicants out of total loan applicants

Even though more males applied for SLs, banks granted loans to more females – 88.8% of female applicants were granted loans compared to 69.1% of male applicants (see Table 5.3). Thus, of the overall sample, around 15.1% of female graduates received SLs, a bit higher than their male counterparts (13.5%). This is contrary to the findings of Schwartz and Finnie (2002), who find the dominance of granting SLs by commercial banks to male applicants over females in Canada. In terms of loan amount, we note that male applicants are granted a higher amount of ₹7.31 lakh

compared to ₹6.40 lakh for female applicants (see Table 5.5). OLS estimates also confirm that the loan amount sanctioned by banks to male applicants is 30.6% higher than that granted to female applicants (see Table 5.6). Similar findings were reported by Panigrahi (2022), wherein male applicants were granted ₹84,090 more as student loans than females by commercial banks in India (p.103). Why are banks reluctant to grant high-cap loans to females even though they shortlist more female applicants? It would be interesting to examine the bank's perspective on this, which is beyond the scope of this chapter.

Caste: We note a clear caste hierarchy in access to SLs among PHE students in Delhi. Around 25% of the total OBC students applied for SLs; this share was 23.8% among the SCs, 16.6% among UCs and only 6.2% among STs (see Table 5.3). Logit estimates also reveal that, compared to STs, students belonging to SCs are 20.9% more likely to apply for SLs, followed by OBCs and UCs with 16.7% and 11% more such tendencies, respectively (see Table 5.4). Unlike UC and OBC households, a predominant proportion of SC/ST households in India is either poor or comes under lower-middle-income groups. As such, owing to financial constraints, they might be unable to fully fund the costly professional education in Delhi and perceive SLs as an alternative to financing education.

The highest loan acceptance rate by banks was noted among the students from UCs (73.9%), followed by OBCs (71.4%), SCs (68.3%), and STs, i.e., 50% (see Table 5.3). Similar results were noted by John (2013) in the context of India – over 68% of loan beneficiaries were from UCs, against 8% for SCs and STs. Further, we find that the loan amount granted by banks varies significantly across different castes. Students from UCs are granted the highest amount (₹7.39 lakh), followed by OBCs (₹7.34 lakh), and as expected, SCs are granted the least amount, i.e., ₹5.61 lakh (see Table 5.5). This reposts a difference of 1.32 times between the loan amount sanctioned to UCs and SCs. This goes in line with the findings of Rani (2016), which reveals that rich students in India get the largest size of loans. Further, the majority of SC students come from a low socioeconomic background, which banks might perceive as difficulty or non-repayment of loans in the future. Adhikari (2016) argued that commercial banks in India only do business for the rich as student loan facilities were not benefiting poor SCs, because of the absence of sufficient collateral.

Table 5.4: Determinants of Likeliness of applying for Student Loans among PHE Graduates in Delhi: Logit Estimates

	Simple Model		*Models with Interaction Effect*	
	Model 1		Model 2	Model 3
	(Coefficient)	(AME)	(Coefficient)	(Coefficient)
gender	.374*	.049*	.482**	.386*
	(.213)	(.028)	(.255)	(.214)
caste (Ref. - ST)				
SC	1.989**	.209**	2.001**	1.997**
	(.830)	(.053)	(.835)	(.835)
OBC	1.719**	.167**	1.724**	1.724**
	(.815)	(.046)	(.819)	(.820)
UC	1.299*	.110*	1.295*	1.293*
	(.810)	(.044)	(.723)	(.724)
lnfamily_income	-.118*	-.015*	.000	.000
	(.063)	(.008)	(.000)	(.000)
sibling	.126**	.017**	.131**	.131**
	(.060)	(.008)	(.060)	(.060)
home_ownership	-.920***	-.121***	-.932***	-.932***
	(.171)	(.022)	(.170)	(.170)
father_edu	-.056**	-.007**	-.058***	-.059***
	(.023)	(.003)	(.023)	(.023)
father_occup (Ref. – Govt Job)				
Private Job	.412**	.052**	.433**	.436**
	(.209)	(.026)	(.207)	(.207)
Self-employed	.334*	.041*	.353*	.351*
	(.206)	(.025)	(.206)	(.206)
Others	.645**	.086**	.693**	.691**
	(.295)	(.042)	(.292)	(.294)
xii_marks	.310**	.041**	.300**	.305**
	(.156)	(.021)	(.156)	(.156)
institution	-.285*	-.038*	-.294*	-.306*
	(.157)	(.021)	(.157)	(.185)
course	1.596***	.210***	1.582***	1.576***
	(.186)	(.023)	(.185)	(.185)
part_time_job	.702***	.093***	.700***	.703***
	(.159)	(.020)	(.159)	(.159)
clg_tieup_loan	.805***	.106***	.804***	.799***
	(.145)	(.019)	(.144)	(.144)
gender#family_income	---	---	.000*	---
			(.000)	

institution#family_income	---	---	---	.000* (.000)
Constant	-1.764* (1.141)	---	-3.324 (.927)	-3.222 (.909)
Prob > Chi^2	0.000	---	0.000	0.000
R Square	0.142	---	0.142	0.141
Observations	1,508	1,508	1,508	1,508

Notes: Robust standard errors in parentheses; ***p<0.01, **p<0.05, and *p<0.1
AME=Average Marginal Effect

Religion: Differences exist in access to SLs by different religious groups. Of the total loan applicants, nearly 90% are Hindus, followed by 3.5% Muslims and 6.9% from other religious groups[24] (see Table 5.3). This might be attributed to their share of participation in higher education in India. According to AISHE (2020), the representation of Muslim students in Indian higher education is 5.5%, whereas 2.3% of students are from other minority communities. However, even though their share in total loan applicants is less, the share of applicants in their respective populations (row percentage) gives us some interesting insights. Of the total Hindu students surveyed, around 19.6% of students applied for SLs, and the corresponding share is 10.3% among Muslim students. The highest share of loan applicants is noted among students from other religions, i.e., 21.5%. Gayardon *et al.* (2019) found a similar result in England, wherein Muslim students were 9.7% less likely to borrow a tuition fee loan and 18.5% less likely to borrow for maintenance (p.980).

The highest acceptance rate was registered for Muslim applicants (80%), followed by Hindus (72.1%) and applicants from other religious groups (70%). However, the amount of loan granted tells a different story. The highest average loan amount was granted to applicants from other religions (₹10.6 lakh), followed by Hindus (₹6.91 lakh), and the least amount was granted to Muslims, i.e., ₹6.36 lakh (see Table 5.5). Even though a relatively more share of Muslim applicants was granted loans, the average loan amount granted to them was 1.7 times less than applicants from other religions. It is clear that banks discourage Muslim students in terms of loan amount

[24] Other religious groups include Christianity, Sikhism, Jainism, Buddhism, Zoroastrian, and other religions.

granted to them. This might be because other religions in India usually belong to the higher ladder in the socioeconomic strata and thus are relatively more credit-worthy in the eyes of banks.[25]

Family Income: Economic status of the household is expected to be negatively associated with access to student loans. Students from low-income families require relatively more amount of loan to finance their education. In our analysis, we note that the share of students seeking SLs decreases with an upward shift in household income. For instance, while around 1/4th of the students belonging to lowest income quintile (Q1)[26] applied for SLs, only 18.7% of those belonging to wealthy families (Q1) have applied for them (see Table 5.3). We also compute the income elasticity of SL access using the logarithm form of family income and find a negative effect of family income on demand for SLs in Delhi. Logit estimates reveal that a unit increase in household income decreases the probability of applying for SL by 1.5 percentage points (see Table 5.4). This implies that the higher the family income, the lower the demand for SLs and vice-versa. A few studies reported similar findings in international contexts (Payne & Cullender, 1997; West *et al.*, 2015; Gayardon *et al.*, 2019). For instance, Gayardon *et al.* (2019) noted a negative association between family income and student loan take-up in England (p.979).

Commercial banks in India give much weightage to family income of the applicant while sanctioning student loans (Panigrahi, 2010, 2022). We find that even though highest share of students from Q1 households has applied for SLs, their acceptance rate is the lowest among all. Only 59% of applicants from Q1 households are granted loans by the bank, a figure that increases with an upward shift in income quintile and is 83.7% among the Q5 households (see Table 5.3). This does not justify the goal of student loan schemes. Our results align with the findings of John (2013), who concluded that commercial banks in India primarily select student loan beneficiaries based on the economic status of the student's family. Contrarily, a positive relationship is observed between family income and the loan amount sanctioned by the banks. OLS estimates also confirm that the loan amount sanctioned by banks increases by 5.1% with a unit increase in the applicant's

[25] In the current survey, the average annual family income of Muslim households was reported to be ₹11.7 lakh, relatively less than that of households belonging to other religions (₹19.2 lakh).

[26] Household's economic status was classified into five categories based on annual family income reported by the respondents in the survey. The first quintile includes bottom 20% of the population, the second quintile includes 40% of the population and so on.

family income (see Table 5.6). The highest average loan amount sanctioned was noted for the richest households (₹8.61 lakh) and the lowest for poorest households (₹6.68 lakh), marking a significant difference of about 1.3 times between the two groups (see Table 5.5). These results indicate that banks do not prefer to provide high-cap SLs to students from low-income families, which may be due to their low creditworthiness. This goes in line with the findings of a few available studies on SLs in India, which reveal that rich students get the largest size of loans. (Choudhury, 2012; Rani, 2016; Tilak, 2020). For instance, Tilak (2020) finds that engineering students from low-income families received significantly less loan amount (₹61.5 thousand) as compared to those belonging to wealthy counterparts, i.e., ₹108.3 thousand (ibid, p.16). These findings indicate the discriminatory practices exercised by the banks while granting SLs. Apart from mortgages, they seem to be guided by the creditworthiness and repayment capacity of the students/families.

How do the gender and institutional gap manifestation in student loan access vary with family's economic status? To answer this, we incorporate additional interaction terms between *gender* and family income (*Model 2)* and between *inst_type* and family income, *i.e., Model 3* (see Table 5.4). A careful comparative study between poor and affluent families might aid in a better understanding of the gender dynamics of applying for SLs in Delhi. Therefore, after adjusting for all other control variables in the model, post-estimation predicted probabilities for both interaction effects were computed, and the findings are shown in Figures 5.10 and 5.11. The interaction effect reveals that the gender gap in likeliness of applying for SLs is negligible among poor households, which tends to increase with an upward shift in family income and gradually becomes considerable among rich households (see Figure 5.10). Similarly, we find evidence that the institutional gap in likeliness to apply for SLs is negligible among poor households and increases with an upward shift in family income (see Figure 5.11). This indicates that given financial constraints, mainly among low and middle-class families, parents/students tend to opt for SLs, irrespective of student's gender and institution type. The marginal effect is noted to be higher for females than males with the increase in family income, as the curve for females has a steeper slope than for male students. When parents are not constrained by financial restraints, they are more likely to borrow SLs for their sons than daughters. Similar is the case of students from government institutions, among whom the marginal effect was noted as higher.

Figure 5.10: Probabilities of Applying for Student Loans by Gender & Family Income

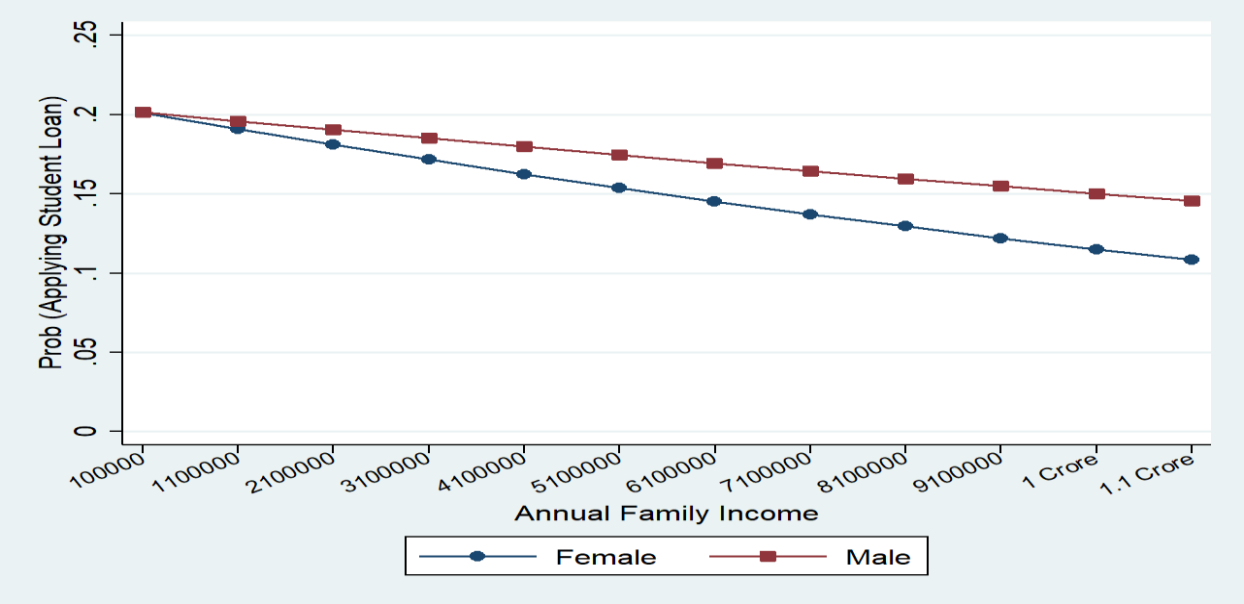
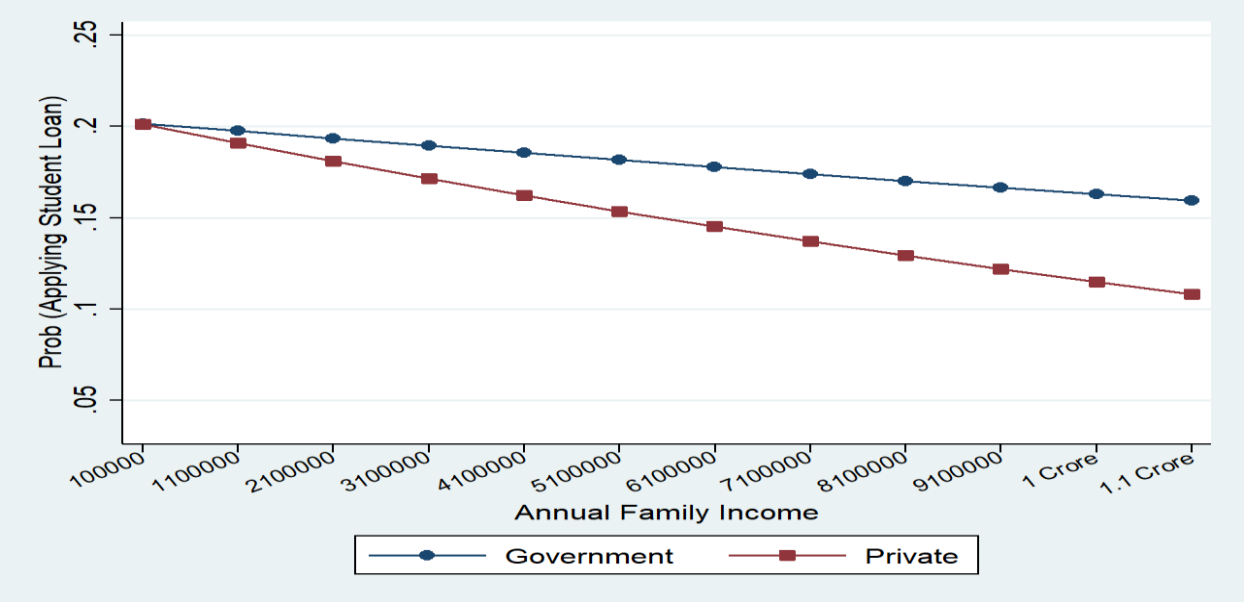


Figure 5.11: Probabilities of Applying for Student Loans by Institution & Family Income



Sibling: We find a positive association between the number of siblings and demand for SLs. An addition to the family increases SL demand by 1.7 percentage points (see Table 5.4). A similar finding was put forth by Choudhury (2012) in the context of engineering education in Delhi, India. Generally, bigger families require more resources for necessities. With limited financial resources, as children are added to the family, the per-child resource declines resulting

in lower educational attainment for later-order children (Blake, 1989; Downey, 1995; Kellaghan, 1994), which results in increased demand for SLs to finance their education. For instance, Panigrahi (2022) found that an addition to the number of dependants in low-income families increases the amount of SL borrowed by ₹29,179 in India. The author argued that financial requirements of bigger families are higher, and therefore they demand student loans to meet the high cost of professional education of their offspring (ibid: p.103).

Father Occupation: The effect of father's occupation on the demand for SLs among PHE students in Delhi is found to be statistically significant. Compared to those whose fathers are government employees, students whose fathers are engaged in private jobs and business activities are 5.2% and 4.1% more likely to apply for SLs to finance their education, respectively (see Table 5.4). Such tendency is relatively higher among those whose fathers are engaged in other types of employment such as labourer, homemaker, agriculture, and other related activities, i.e., 8.6% higher likeliness of applying for SLs (ibid). Apparently, the income levels of parents engaged in activities other than salaried jobs or self-employment is relatively less, which might lead them to demand more for SLs to finance the education of their offspring.

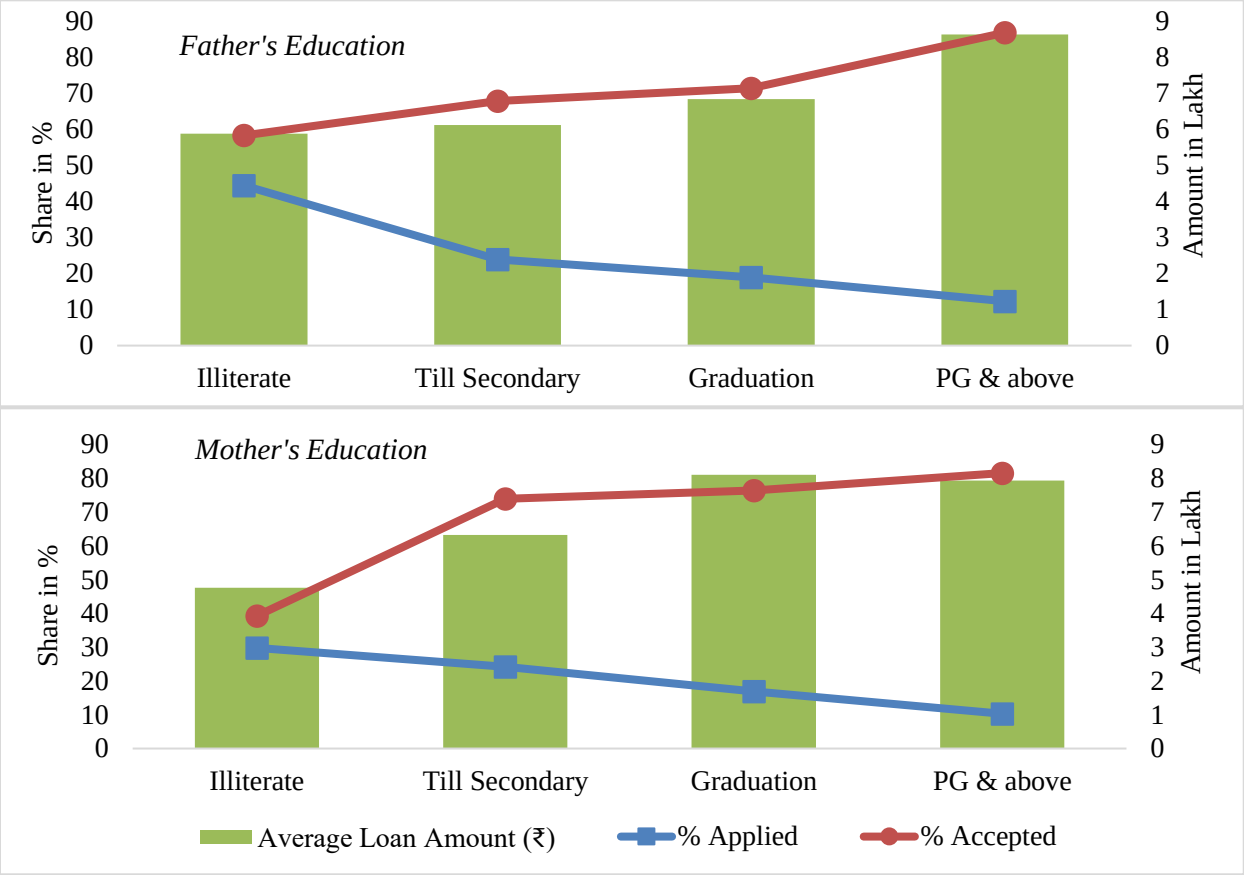
Household Assets: In the current survey, students were asked about some indicators of their family wealth, i.e., homeownership and land. Findings indicate that both indicators negatively affect access to SLs in Delhi. For instance, a substantially more share of students with no homeownership (31%) applied for SLs compared to those whose families own a house, i.e., 16% (see Table 5.3). A similar pattern for loan applicants is observed when looking at ownership of land. Logit estimates confirm a strong and negative association between homeownership and the likeliness of applying for SLs. Students whose families own a house are 12.1% less likely to apply for SLs than those without home ownership (see Table 5.4). Obviously, the economic status of those with their own home might be relatively better than their counterparts with no house, and the latter group might afford to finance education without opting for SL. Hsu & Fisher (2016) also found similar results that ownership of home and stock are negatively associated with the likelihood of holding a SL in the United States.

On the other hand, banks granted loans to more share of applicants with asset ownership. While more than 3/4th of applicants with their own homes were granted loans, only 62% of applicants without homeownership were considered. Perhaps, loan applicants with homeownership can afford to repay a large amount of loan, adhering to the terms and conditions of the bank.

Parental Education: What role does parental education level play in access to student loans in Delhi? How do banks perceive parental education while granting SLs? Educated parents are expected to be more capable of financing education of their offspring, and therefore their chances of applying for SLs are less. Our findings reveal a negative association between father's education and demand for SLs, wherein highest share of applicants comes from families where the father is illiterate. This share decreases with an increase in father's education level, i.e., ranging from 44% to 12.3% between households where the father is illiterate and completed post-graduation and above degree, respectively (see Figure 5.12). A similar pattern is visible when considering the mother's education level. Logit estimates also confirm that with an additional year of father's education, the chances of applying for SLs decrease by 0.7 percentage points (see Table 5.4). This is contrary to the findings of Gayardon *et al.* (2019) that children of parents with a first degree or higher are four percentage points more likely to borrow SLs in England (p.979).

On the other hand, we note a reverse pattern regarding the loan acceptance rate, i.e., a positive association between parental education and loan acceptance rates. Banks granted loans to higher share of applicants whose parents are more educated. The acceptance rate ranges from 58% to 87% for fathers and from 39% to 82% for mothers, on a scale of being illiterate to a minimum postgraduate. Similarly, the average loan amount also increases with an upward shift in parental education. The loan amount received by graduates ranged from ₹5 lakh to ₹8.56 lakh when accounting for father's education (between illiterate to a minimum postgraduate) and from ₹4.65 lakh to ₹8.11 lakh for mother's education. This finding aligns with the study by Furuta (2022) in the context of Japan. While examining the effect of parental education on SL uptake, the study found that students from low-income families but with educated parents are more likely to be the beneficiaries of SLs. For students belonging to low-income families, the compensation between economic resources and parental education occurs in the form of increased SL take-up (ibid: p.19).

Figure 5.12: Access to Student Loans among PHE Graduates in Delhi by Parental Education



Senior Secondary Marks: Logit estimates reveal that those securing more than 80% marks in the senior secondary are 4.1% more likely to apply for SLs than those securing less than 80% (see Table 5.4). Parents might be willing to spend more on educating those children who perform better in their studies than other children (Asadi, 2020). Therefore, they might be willing to even go for SLs in case they cannot finance their child's education out of their pocket. Banks also granted SLs to a higher share of applicants who secured more than 80% marks in senior secondary. Descriptive statistics reveal that, of the total loan applicants in less than 80% category, around 67.2% were granted SLs, which was relatively high among those who secured more than that, i.e., 75.7%. Not only do they grant loans to applicants with good marks, but we also note a huge difference in the loan amount sanctioned to applicants in these two groups. OLS estimates reveal that those securing more than 80% in senior secondary receive 42.2% more loan amount than those securing below 80% (see Table 5.6). This gap was noted more in the case of applicants from management courses (59.5% higher loan amount granted) than among BTech students, i.e.,

31.4% higher loan amount granted (ibid). In terms of absolute amount, those securing above 80% were granted an average loan amount of ₹8.07 lakh, quite more than those securing below 80% (₹5.62 lakh) - registering a gap of 1.44 times (see Table 5.5). Banks might perceive better academic performance as an indicator of improved labour market returns and, therefore, credit worthiness of the applicant.

Institution: Apart from socioeconomic settings, factors related to students' current education status are also important in determining their demand for student loans. For instance, we find a massive gap in access to SLs among PHE students in Delhi by type of institution. While around 22.2% of the students attending government institutions applied for SL, this figure is only 15.3% for those studying in private colleges (see Table 5.3). Logit results also indicate that students from private institutions are 3.8% less likely to apply for SLs than those from government institutions (see Table 5.4). This enunciates that the demand for SLs is prevalent in both private (though slightly less) and government PHE institutions in Delhi. Why have more share of students in government institutions applied for SLs than their counterparts in private institutions? One of the possible explanations for this is that professional courses in government institutions in Delhi are almost as costly as in private institutions. As discussed in Chapter 4, the annual per-student household expenditure on PHE is ₹2.76 lakh in government institutions and ₹3.29 lakh in private institutions. Another contributing factor could be the relatively higher share of government institutions having tie-up with banks (cited by 49.6% of students) as compared to private institutions (38.5%). Further, most students accessing private institutions come from rich families who generally do not require loans to finance their education.

Commercial banks prefer granting SLs to applicants attending government institutions (Srinivasan & Das, 2011). We find that while more than 3/4th of loan applicants from government institutes were granted loans, only 65.4% of their counterparts from private institutes were given loans (see Table 5.3). Moreover, successful applicants from government institutions were granted a higher amount by banks (₹7.31 lakh) than that sanctioned to applicants from private institutions, i.e., ₹6.77 lakh (see Table 5.5). Thus, students from private institutions are relatively less preferred by commercial banks, both in terms of the decision to grant loans and the amount sanctioned. A similar finding was observed in a study by Srinivasan & Das (2011) and Choudhury (2012) in the

context of Delhi, India. Choudhury (2012) reported that engineering students enrolled in private institutions in Delhi were 17% less likely to receive SLs from commercial banks than those from government institutions. In terms of loan amount, Panigrahi (2022) noted that students from government institutions are granted more amount of educational loans than those enrolled in private institutions (p.104). This might be due to the higher employability of graduates from government institutions, which banks might perceive as the applicant's good repayment ability.

Course: The share of management students applying for SLs is about double that of engineering students. Specifically, of those pursuing management courses, around 31.3% applied for SLs, and the corresponding figure was only 15.8% (see Table 5.3). Logit estimates also indicate that management students are 21% more likely to apply for SLs than engineering students (see Table 5.4). As discussed in Chapter 4, the total cost of a four-year UG-engineering degree in Delhi adds up to ₹10.51 lakh, significantly higher than what a two-year MBA/PGDM course costs, i.e., ₹8.81 lakh. Why is less share of engineering students applying for SLs even though their overall cost of course is higher than management students? Can this be linked to the fact that a higher share of engineering institutions provides scholarships to needy students, as discussed in Chapter 4. We noted a stark inter-course difference in the share of students receiving scholarships. While 13.5% of total engineering students received scholarships, the corresponding figure was only 5.4% among those pursuing management courses. This gap is not only limited to the share of students receiving scholarships but also to the amount received. An engineering student's average annual scholarship amount was reported to be ₹43,196, compared to ₹38,333 in management courses.

On the other hand, results suggest that commercial banks granted SLs to higher share of management students than engineering graduates. Of the total loan applicants from management courses, 85.9% were granted loans, and this figure was around 65.1% for applicants from engineering courses[27] (see Table 5.3). Further, successful applicants pursuing MBA/PGDM courses were sanctioned a higher loan amount (₹8.15 lakh) than those attending BTech courses,

[27] Though we do not find any significant inter-institutional gap in the share of management graduates who were granted SLs by the banks, it is interesting to note that more share of engineering graduates from government institutions (72.5%) were granted SLs by the banks than their private counterparts (48.3%). This can be linked with the difference in the quality of engineering education imparted in these two types of institutions and thereby, labour market outcomes. Thus, engineering students from private colleges are relatively less preferred by commercial banks.

i.e., ₹6.43 lakh (see Table 5.5). Similar results are noted in the OLS estimation that management graduates receive a 32.2% higher amount as SLs from banks than their engineering counterparts (see Table 5.6). Why was a substantially lower share of engineering students granted SLs with less amount? Banks' preference to grant SLs to management graduates (studying MBA/PGDM) may be due to their relatively higher probability of getting jobs in the labour market as MBA/PGDM are postgraduate level courses, and BTech is an undergraduate course. Tilak (2020) established a positive relationship between the employment prospects of engineering graduates in India and the loan amount granted to them by commercial banks.

Table 5.5: Student Loan Amount Sanctioned by Commercial Banks by Socioeconomic and Institutional Factors *(₹ in lakh)*

		Engineering	Management	Total
Gender	Female	4.90	6.72	6.40
	Male	6.53	9.05	7.31
Caste	ST*	8.50	---	8.50
	SC	5.46	6.50	5.61
	OBC	6.88	8.37	7.34
	UC	6.49	8.19	7.39
Religion	Hindu	6.52	7.52	6.91
	Muslim	6.34	6.50	6.36
	Others	1.96	12.04	10.60
Location	Rural	6.44	9.72	7.25
	Urban	6.43	7.83	7.10
Institution	Government	6.27	9.49	7.31
	Private	6.97	6.63	6.77
Income Quintile	Q1 (Poorest)	6.67	6.72	6.68
	Q5 (Richest)	6.88	9.50	8.61
XII Marks	Less than 80%	4.98	6.19	5.62
	More than 80%	7.06	10.06	8.07
Total		6.43	8.15	7.14

*The sample includes 32 ST students (2.1%), of which only two students applied for loans, and one engineering student received it from a bank.

Part-time Job: Do engagements in part-time jobs affect the demand for student loans among PHE graduates in Delhi? In the primary survey, a question was asked to students about their engagements in part-time jobs, namely: *Whether did or doing any part-time job while enrolled in the present course?* Findings reveal that around 21.3% of the respondents reported

their engagement in part-time jobs, a figure slightly higher among engineering students (21.7%) than management students (19.6%). Regression estimates reveal that students who are engaged in part-time jobs are 9.3% more likely to apply for SLs (see Table 5.4). As per descriptive statistics, while only 18.4% of students without any part-time job engagement applied for SLs, around 33.7% of those doing part-time jobs applied for them. This might reflect their family's weak economic status, which compels them to seek secondary income sources to finance their education. This contradicts some studies which find that having a paid job is unrelated to student loan take-up (Johnes 1994; Payne & Callender 1997; Callender & Kemp 2000; Callender & Wilkinson 2003).

Table 5.6: Determinants of Loan Amount Sanctioned by Commercial Banks: OLS Estimates

	Eqn. 1 Overall	*Eqn. 2* Engineering	*Eqn. 3* Management
gender	.306***	.015	.501***
	(.120)	(.161)	(.166)
caste (Ref. – ST)			
SC	-.161	-.400**	---
	(.187)	(.199)	
OBC	-.127	-.292*	-.125
	(.128)	(.155)	(.436)
UC	-.209	-.397**	-.055
	(.144)	(.177)	(.420)
lnfamily_income	.051*	-.012	.176***
	(.030)	(.043)	(.046)
personal_loan	-.188**	-.105	-.401**
	(.093)	(.111)	(.162)
xii_marks	.422***	.314**	.595***
	(.102)	(.159)	(.146)
inst_type	.027	.126	.077
	(.094)	(.143)	(.137)
course	.322***	---	---
	(.114)		
application_mode	.186**	.133	.301**
	(.098)	(.129)	(.139)
Constant	11.768***	12.944***	10.266***
	(.576)	(.750)	(.731)
Prob > F	0.000	0.000	0.000
R Square	.229	.207	.363
Observations	207	122	85

Notes: Robust standard errors in parentheses; ***p<0.01, **p<0.05, and *p<0.1

Personal Loans: In the present survey, 19.5% of students reported that their families had taken other loans for education of their siblings. Families already in debt (a reflection of their weak financial situation) might find it challenging to finance costly professional courses in Delhi and may demand SLs – which is reflected in the results. The share of students applying for SLs from debt-free families is relatively lower (16.9%) than those from families who have taken any other loans (27.9%). Banks also give weightage to this while granting SLs. OLS results confirm that students whose families have taken any loans are granted 18.8% less loan amount by the commercial banks than their counterparts from debt-free families (see Table 5.6). The degree of this relationship further increases if the applicant is pursuing management courses, i.e., 40.1% less loan amount to those family is already in debt. This indicates that banks are hesitant to grant a higher loan amount to those whose families are already in debt.

It is important to mention here that we also estimated *probit regression* equations to check the robustness of *logit regression* estimates, and the results are given in Table A5.6 in the appendix. The *logit* coefficients of the main models (models 1–3) are found to be precisely the same in direction (positive or negative) and almost similar in magnitude (the numeric values of the coefficients) to the *probit* model. Similarly, we estimate the *heteroscedasticity-consistent OLS model* to check the robustness of OLS estimates, and the results are given in Table A5.7 in the appendix. Again, OLS coefficients of the main models are the same in direction and almost similar in magnitude to the *heteroscedasticity-consistent OLS model*. The effect of explanatory variables on loan amount sanctioned by banks remained consistent and statistically significant.

To sum, socioeconomic and institutional settings of the PHE graduates determine their access to student loans and the amount received. Commercial banks exercise discriminatory practices based on these factors while sanctioning loans to students. Though more needy students apply for loans, they are discouraged by commercial banks even if they face severe financial hardship to fund their education. Given the low sample size of graduates who applied for SLs and who got it,[28] it was important to take interviews with graduates to probe more into the problem related to SL access. We took 30 detailed interviews of graduates pursuing PHE in Delhi, including

[28] Around 19.1% students (288 in number) out of the total sample of current survey applied for student loans to finance their education. Of these, 208 students (13.8% of the total sample) were granted loans by commercial banks.

15 borrowers and 15 non-borrowers. Using information collected from 1,508 students through questionnaires and 30 interviews, the following section discusses the problems faced by students in availing SLs from commercial banks and problems after receiving the loan amount. As majority of the existing studies on SLs in India have discussed the inequality in access to SLs by socio-economic background of students, analysis in this part would unfold several important aspects that are new to the literature.

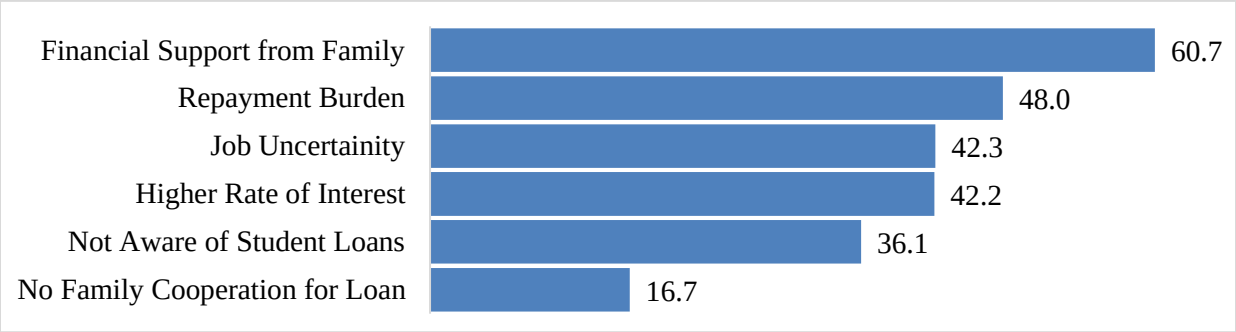
5.4 Access to Student Loans in Delhi: Mapping Students' Experiences

Student loan scheme in India started in the early 1960s, intending to improve access to higher education by sharing the cost with students (Tilak, 1992). However, findings from the primary survey reveal that majority of students do not prefer to finance their education through SLs, even if they face severe financial hardship to fund their education. Though labour market uncertainties, high repayment burden, less or no loan literacy, and loan aversion are some reasons that are often cited in the literature (Avery & Turner, 2012; Goldrick-Rab & Kelchen, 2015; Harrison & Agnew, 2016; Clendaniel, 2016; Furquim *et al.*, 2017; Callender & Mason 2017; Long, 2021), there is no systematic evidence on this in India. Therefore, in addition to examining the socioeconomic inequalities and determinants of access to SLs among PHE graduates in Delhi, this chapter explores students' experiences in loan financing of education.

As discussed in section 5.3, a significantly small share of PHE students has applied for SLs (19.1%), despite their substantial annual education spending of ₹3 lakh, which accounts for 16.2% of their annual family income. Why have a significantly small number of students applied for loans, even if they need to pay a substantial amount for their course? Do students get enough financial support from their families to continue the course? Is it due to the rigidities and procedural difficulties that discourage the students and parents from availing SLs from commercial banks? These are some of the leading questions asked to respondents who did not apply for SL. Findings indicate that the major reason cited for not applying SL is *'financial support from family'* (cited by 60.7% of respondents), followed by *'repayment burden'* (48%), *'job uncertainty'* (42.3%), *'high rate of interest'* (42.2%), and *'no family cooperation for loan,'* i.e., 16.7% (see Figure 5.13). This indicates that non-borrowers are mostly from wealthy families or are loan averse due to the

future financial risks associated with loans. This aligns with the findings of Xue & Chao (2015), who concluded that non-borrowing students from lower-middle-income families in the US are generally averse to funding college through loans. The study highlighted the reasons for graduates' aversion or reluctance to student loans, including fear of repayment burden, parental influence, underestimation of the value of a college degree and lack of information regarding student loan schemes (ibid: p.37). In this context, Avery & Turner (2012) also found that students may be hesitant to borrow loans due to negative attitudes toward debt.

Figure 5.13: Reasons for Not Applying for Student Loans

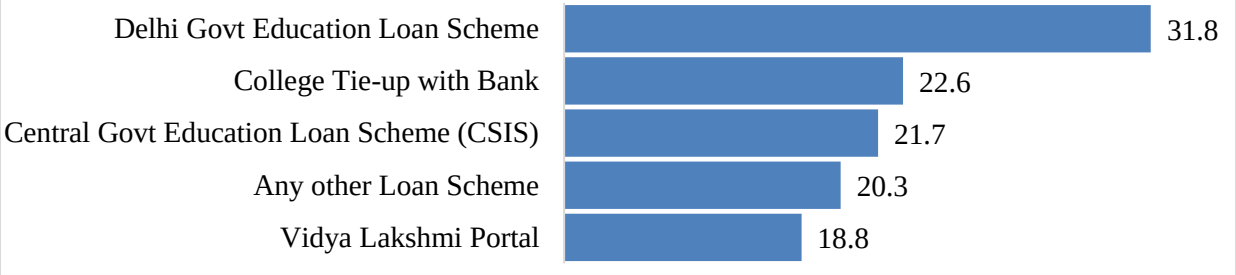


Another factor that may influence the choice to access SLs is the knowledge of information regarding loan schemes (Lee & Mueller, 2014; Clendaniel, 2016). The knowledge regarding SLs is defined as *"the ability to identify, understand and interpret student loan options, principles, and practices of responsible borrowing and debt management"* (Lee & Mueller, 2014: p.714). In our study, one crucial factor noted for not applying for student loans is *'not aware of student loans'*, which is cited by 36.1% students (see Figure 5.13). To probe further into this, graduates were asked questions regarding their awareness of different SL schemes before admission to the current course. Results reveal that students were most aware of the Delhi Government Education Loan Scheme (known to 31.8% of all PHE students), followed by their college tie-ups with banks (known to 22.6% students), and the CSIS scheme, i.e., known to 21.7% students (see Figure 5.14). Only 18.8% of students knew about the Vidya Lakshmi Portal. One of the students studying in a private college mentioned that:

> *"I got to know about my institution's tie-up with bank from one of my seniors in my third year. I could not apply for a loan as banks do not grant loans to third-year students. The information dissemination is not apt, and students do not get adequate*

information on SLs. Therefore, many needy students could not take advantage of such facilities." (Respondent 16)

Figure 5.14: Awareness regarding various Student Loan Schemes among PHE Graduates

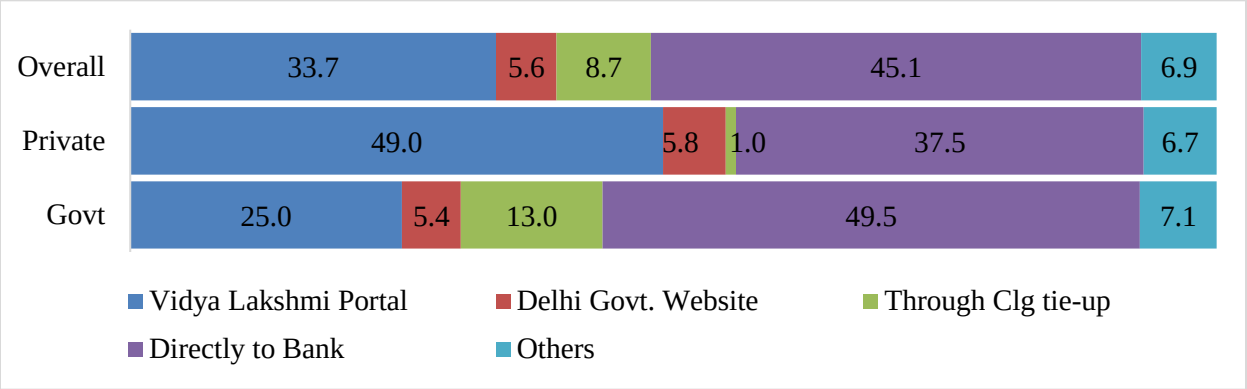


Differences in the awareness of various education loan schemes are also reflected in the modes through which students have applied for SLs. Of the total loan applicants, most applied directly to the banks (45%), followed by *VidyaLakshmi* portal (33.7%) and college tie-up with bank, i.e., 8.7% (see Figure 5.15). Interestingly, though awareness regarding the Delhi government scheme (HESDG) was relatively higher than other schemes, only 5.6% of the total loan applicants applied through this scheme. Why do students not prefer HESDG scheme of the Delhi government? One possible explanation for this is the low acceptance rate of loan applications. According to the official data, only 32.8% of the total loan applicants were granted loans during 2015-16 to 2020-21, and this figure was a meagre 3.8% during 2020-21.[29]

Further, half of the applicants from private institutions applied through the *VidyaLakshmi* portal, whereas only 1/4th of applicants from government institutions applied through this portal. Of the total students surveyed, around 88.5% reported that their institutions have a tie-up with banks to provide SLs. This figure was relatively higher in private institutions (92.8%) than in government ones (84.9%). However, SL applications through this mode were relatively more prevalent in government institutions as around 13% of applicants from these institutions used this facility, compared to only 1% in private institutions (see Figure 5.15).

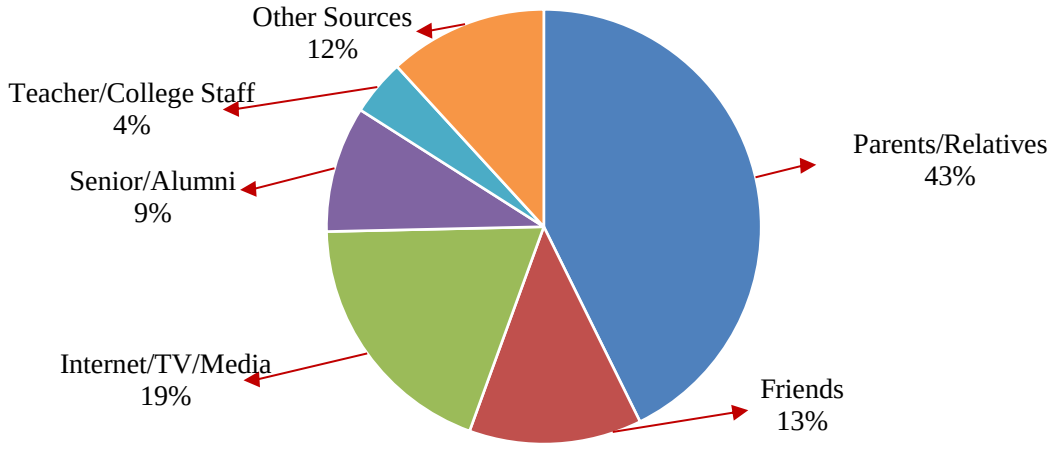
[29] Available at: https://news.careers360.com/rs-1213-cr-sanctioned-student-loan-from-2015-2021-under-delhi-govt-scheme (Accessed 10th April 2022).

Figure 5.15: Mode of Applying for Student Loans by Institution Type



What are the sources of information for students regarding student loan schemes? Survey results reveal that around 43% of the borrowers got to know about SL schemes from their parents and relatives (see Figure 5.16). The second major source was internet/TV/media (cited by 19% of borrowers), followed by friends (13%), senior/alumni (9%), and teacher or college staff (4%). This indicates that PHE students in Delhi rely on multiple sources regarding student loans. Harper *et al.* (2021) also found similar results while examining the sources of information that college students in the United States rely on while making decisions related to SL borrowings. The study revealed that students often rely on multiple sources, such as parents, siblings, peers, and significant others, but the information sometimes leads to confusion among students (ibid: p.15).

Figure 5.16: Source of Awareness regarding Student Loan Schemes

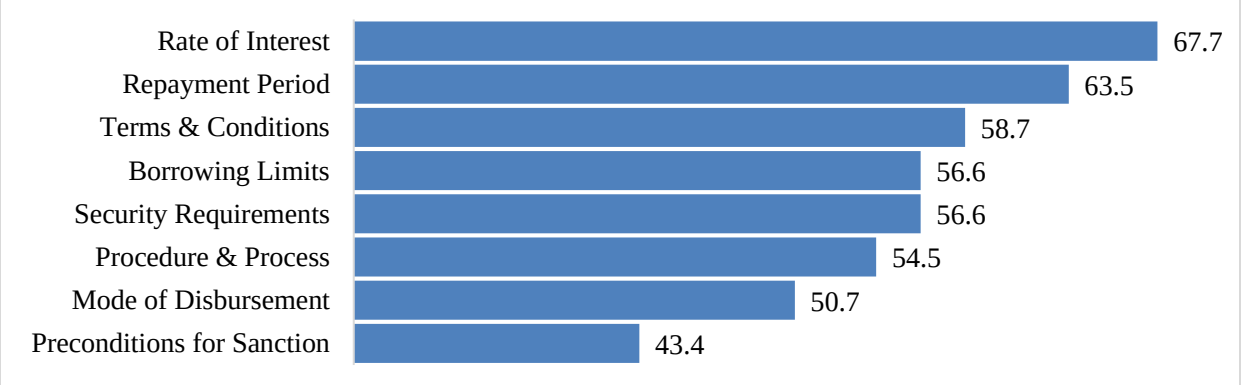


Low awareness regarding SLs among students is not only confined to knowledge of these schemes but also SL application procedure. Even if students are aware of an SL scheme, they might face several problems while applying for it. Studies unfolding these issues are hardly found

in the Indian context. Our survey results reveal that around 43.4% of the loan applicants were aware of the *'preconditions of loan sanction,'* followed by *'mode of disbursement'* (known to 50.7% of applicants), *'application procedure & process'* (known to 54.5% of applicants) and *'security requirements,'* i.e., known to 56.6% applicants (see Figure 5.17). Most applicants were aware of the *'rate of interest'* (known to 67.7%), *'repayment period'* (known to 63.5%), *'terms and conditions'* (known to 58.7%), and *'borrowing limits'* (known to 56.6%). This indicates that applicants are relatively more aware of items directly linked with the cost of borrowing (interest rate and repayment period). When asked regarding the problems in understanding the terms and conditions of SL, a non-borrower from a low-income family responded:

> *"I could not apply for a student loan because of too many preconditions. I faced difficulty understanding the whole process, borrowing capacity, and repayment methods. It was a long haul, and along with the admission process, it just became too much work. I hope that government tries to make the conditions easier for the students to understand or give training sessions in college to raise awareness about SL and its application procedure."* (Respondent 29)

Figure 5.17: Awareness regarding Student Loans Conditions among the Applicants

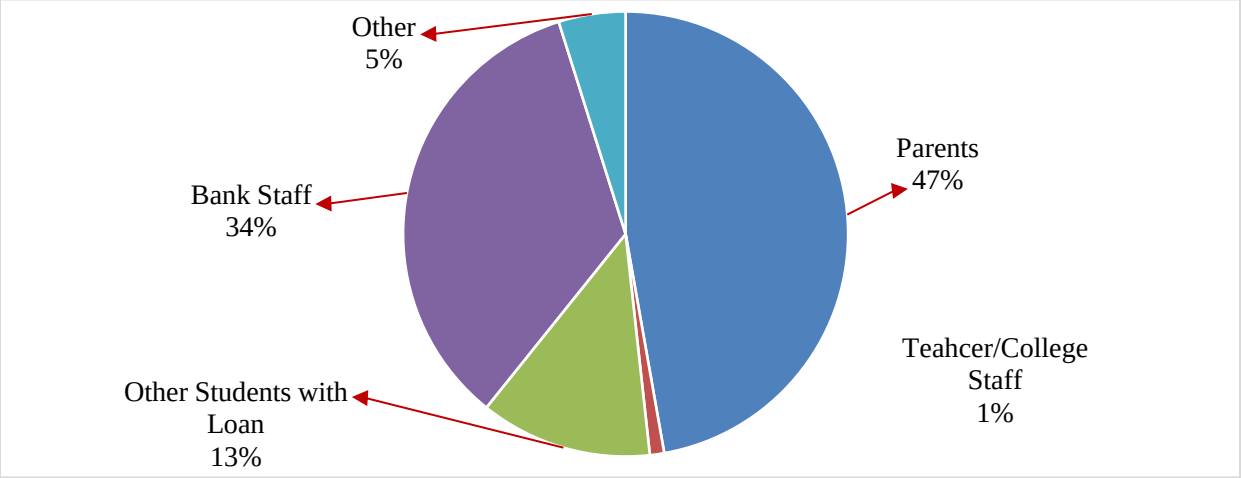


These findings go in line with the study by Avery & Turner (2012) in the context of the US. The study argued that students might be hesitant to borrow loans due to difficulty in understanding the terms and conditions. We note that to understand the terms and conditions of a SL agreement, applicants mainly discussed it with their parents (cited by 47% of borrowers), followed by bank staff (34%), other student borrowers (13%), and only 1% discussed with their teachers and college staff (see Figure 5.18). This corroborates the finding of Harper *et al.* (2021),

as discussed above. During the interaction, several students mentioned that their family's weak economic status and complicated loan process made them question their choice of taking SL. Given these factors, students feel anxious and consult multiple people before starting the loan application. As experienced by an engineering student:

> *"Before applying for a student loan, I got so anxious that I went into an overdrive of information collection. I reached out to every possible person I knew who was even remotely related to a bank. My parents also provided me with some contacts. But in the end, I got confused and withdrew my application. During this experience, I realised that needy students in India do not get relevant information related to education finance."* (Respondent 21)

Figure 5.18: With whom did you Discuss the Terms and Conditions of Student Loans



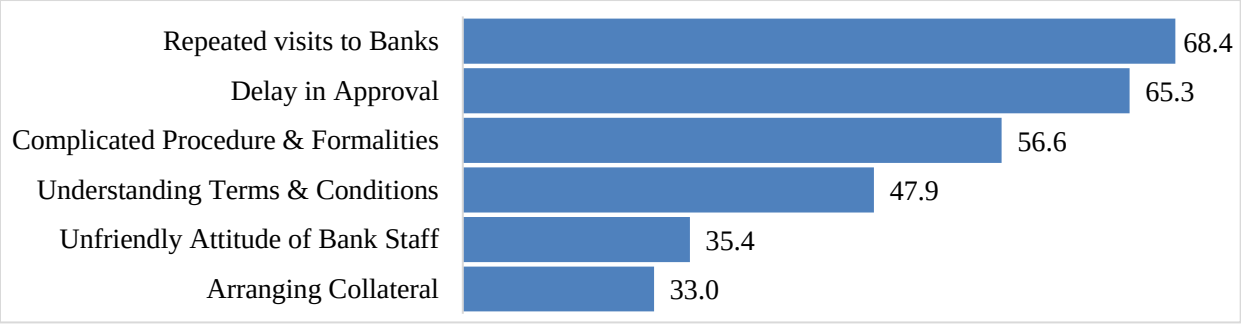
The above case portrays how the SL application process is highly complex and intricate, prompting some students to withdraw at an early stage of the loan process. In another case, a respondent belonging to a rural area decided not to avail student loan after having an experience with a felon. Describing his plight, he mentioned:

> *"Student loans have attracted many people who are in the fool-making business. When I decided to avail SL for my studies, I searched the internet and found a guy who claimed to be an agent of the bank. The bank was reputed in our area, so I assumed it was a genuine case. When I initially approached the branch to apply for SL, the staff asked me to arrange the required documents and come back next week.*

So, I took help of the said person. However, when he started demanding cash, not for his services but for my application to be submitted to the bank, I smelled something fishy and took some time to check his credentials. I inquired about him in the bank, and to my surprise, a bank employee told me that he had duped two other people with the same scheme. I was lucky." (Respondent 26)

Major procedural problems reported by loan applicants were *'repeated visits to bank'* (cited by 68.4% of applicants), followed by *'delay in approval'* (65.3%), *'complicated procedure & formalities'* (56.6%), and *'understanding terms & conditions,'* i.e., cited by 47.9% applicants (see Figure 5.19). Among these, the most problematic situation is the delay in approval of student loans. In this context, Bomer *et al.* (2021) examined the effect of delays in loans on the educational outcomes of students in Kenya. They found that students who experienced loan delays faced difficulty meeting their personal/educational expenses, course registration, and attending classes.

Figure 5.19: Different Problems faced by Applicants while accessing Student Loans



Therefore, the problems and experiences of students discussed above reveal how availing SL can become a huge task for students because of the complex procedure, especially the extensive documentation. Students opted out of their loan application during the process as they felt they could not deal with the complex procedure despite their financial needs. To address some of these problems, the Delhi government scheme (HESDG) includes a grievance redressal committee to handle complaints and grievances, including those relating to cases rejected by banks.

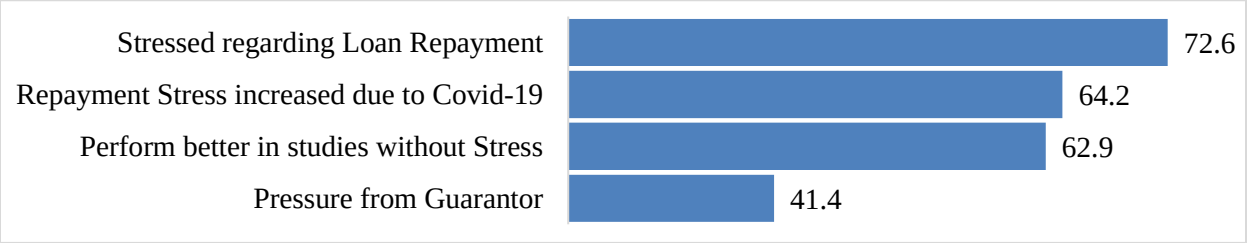
The experiences of borrowers, who were interviewed, revealed that their struggles did not end at the loan application and sanctioning stage. Once the loan is sanctioned, borrowers face problems such as stress regarding academic performance, securing a job and repaying the loan.

Close to 3/4th of the borrowers reported being stressed regarding loan repayment (see Figure 5.20). Further, 64.2% of borrowers reported increased repayment stress due to the Covid-19 pandemic. In borrowers' opinion, this stress hampers their studies, and they would have performed better in studies without this stress – cited by 62.9% of borrowers. Sharing her feeling of stress, a SL borrower mentioned:

> "*Student borrowers are more vulnerable to mental stress than non-borrowers. In my case, the loan repayment stress is not only felt by me but also by my family. This stress has increased due to the Covid-19 pandemic as there is increased uncertainty of securing a job"* (Respondent 5).

These findings go with the well-established literature on the association between student loan borrowings and stress regarding academic performance, securing a job and loan repayment (Purcell *et al.*, 2012; Han, 2016; Britt *et al.*, 2017; Yankovich *et al.*, 2019), especially after the Covid-19 pandemic.

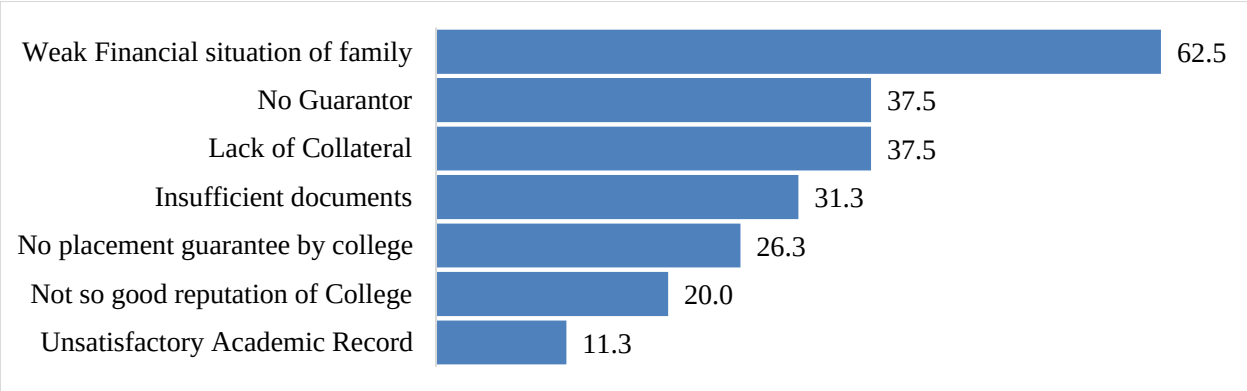
Figure 5.20: Status of Stress and its effect on Student Loan Borrowers



Applying for SLs does not guarantee that the loan is granted. Therefore, all who applied for a loan were asked an additional question – whether they got SL or not. Findings indicate that of the total students who applied for SLs, close to three-fourths were granted loans (72.2 %), and a substantial number of loan applications were rejected, i.e., 27.8%. This raises questions regarding the reasons for loan rejection. How do commercial banks shortlist SL applications? What are their criteria for rejection? To answer these questions, loan applicants whose applications were rejected by the banks were asked the reasons for rejection. Findings indicate that most cited reason for rejection was *'weak financial situation of family'* (cited by 62.5% of respondents), followed by *'lack of collateral'* (37.5%), and *'insufficient documents,'* i.e., 31.3% (see Figure 5.21). In this context, Panigrahi (2022) reported that commercial banks in India unofficially ask for various

documents that are not listed as mandatory by RBI. The study reported that proof of admission and scholarship is the most demanded by the banks, followed by proof of residence or identity, bank account statement of parents, proof of parental income and future income of students (ibid: p.88). Similarly, certain banks also ask for collateral (in terms of land papers, LIC policies, and fixed deposits) even for the SLs below ₹4 lakh for studies within India, though it is not required as per RBI rules. The study concluded that such concealing practices of banks discourage many marginalised students from demanding SLs and also distort their choice regarding HE courses and institutions (ibid: p.89).

Figure 5.21: Reason for Rejection of Student Loan Application



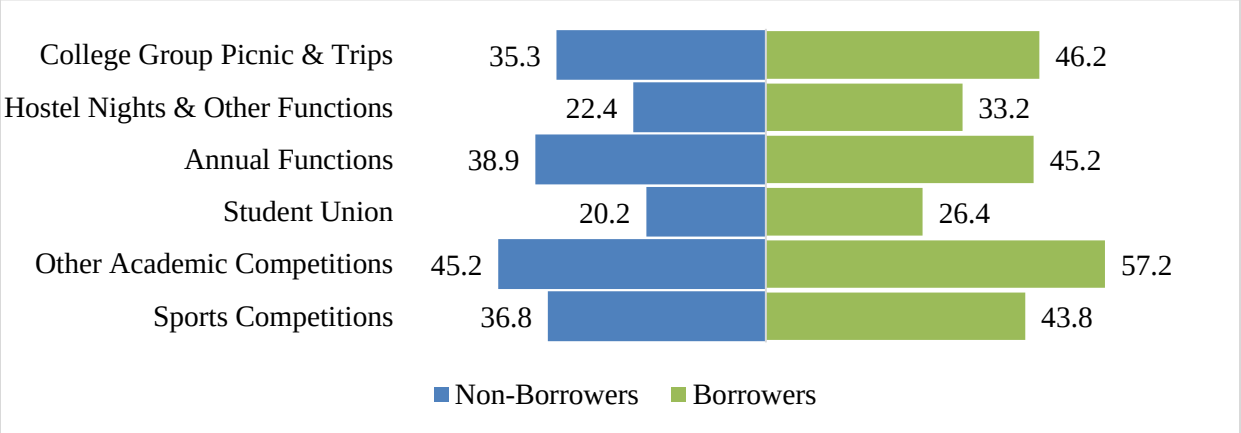
As per the guidelines of both IBA and the Delhi government's education loan schemes, educational institutions are required to share SL borrowers' academic progress reports with the bank at regular intervals. Though the main objective behind this is to reduce the possibility of deliberate default, it has created a sense of fear in borrowers' minds regarding their grades in each semester. Sharing her anxiety regarding banks' policy concerning grades, a female SL borrower mentions:

> "*After taking an education loan, the major stress I face is securing good semester grades. Banks have the policy wherein student borrowers must clear all subjects in a semester without backlogs"* (Respondent 9).

This indicates an added pressure from banks to perform better in studies and register good progress every semester. Primary survey data reveals a variation in the share of students securing more than 80% marks by SL status. While around 36.7% of the borrowers have secured more than 80% marks in the previous semester, this figure is more petite among non-borrowers (32.6%).

Further, there are considerable variations in the non-academic engagements between the two groups of students. Borrowers participate relatively more in non-academic or co-curricular activities like sports competitions, academic competitions, student unions, annual functions, hostel nights, and college group picnics (see Figure 5.22). For instance, around 57.2% of borrowers participate in academic competitions, a figure which is 45.2% among non-borrowers.

Figure 5.22: Participation in Co-curricular Activities among Borrowers and Non-Borrowers



Why are borrowers more active in non-academic activities? Interaction with these students indicates that they want to be noticed in every aspect of college activities to maintain a good image among their teachers and peers. According to them, these engagements are deemed necessary to get good internal grades and subsequently secure a campus placement. A final-year SL borrower mentioned that:

> *"A student who has taken a loan cannot sit idle. I feel the need to constantly perform and show teachers my abilities and interests. For this, I try to participate more in competitions, fests, and extra-curricular activities. The benefit behind this is two-fold. One, teachers notice active students (both in academic and non-academic activities) and put in good words at the time of placement drive (in terms of recommendation). Two, banks also ask for performance reports of borrowers from the institutions. Being active in co-curricular activities helps make a good image which ultimately would help me secure good grades."* (Respondent 7)

Hence, students' opinions and experiences reveal several problems at multiple stages of accessing student loans. Applicants face multiple problems related to complex application procedures while accessing SLs. Some of them also face discrimination based on their family's socioeconomic status at the time of granting SL. Further, after the loan is sanctioned, borrowers face additional problems such as stress regarding academic performance, securing a job and loan repayment. A blend of academic, co-curricular activities, family burden, and banks' conditions often push the borrowers towards a situation of constant anxiety and stress.

5.5 Summary of Findings

This chapter gives a critical descriptive and empirical account of the growth of the student loans market in India and the socioeconomic and institutional inequalities in access to SLs among PHE students in Delhi. The major findings of the chapter are as follows:

- Student loans market in India has experienced substantial growth in terms of number of accounts and amount sanctioned during the last one and a half decades. Number of SL accounts tremendously rose from 4.9 lakh in 2004-05 to 19.4 lakh in 2020-21, registering an increase of about four times during the period. Keeping pace with accounts, the outstanding loan amount marked a significant increase of about nine times during the same period, i.e., from ₹6,694 crore to ₹61,213 crores. We find substantial regional variations in the growth of SL market in India. Southern region, with 21% of India's total population, alone has about 60% of total SL accounts, followed by Western region holding around 11% share. In contrast, ten states and two UTs from eastern and northern regions, accounting for 45.3% of country's population, hold only about 18% corresponding share.

- In Delhi, the primary survey finds that 19.1% of students applied for student loans and nearly three-fourths of them were granted loans (72.2 %). Therefore, around 13.8% of total PHE graduates in Delhi finance their education through student loans granted by commercial banks and substantial share finances through other sources such as family/relatives/friends (66.5%), scholarships (11.7%), part-time jobs (2.1%), other loans and borrowings (2.4%) and other

sources (3.5%). Still, a significant share of graduates relies on student loans to finance PHE in Delhi, which is more than two-fold the national average share of 5.2%.

- We find a massive gap in access to SLs among PHE students in Delhi by type of institution. While around 22.2% of the students attending government institutions applied for SLs, this figure is only 15.3% for those studying in private colleges. Logit results also indicate that students from private institutions are 3.8% less likely to apply for SLs than those from government institutions. On the other hand, commercial banks granted SLs to a higher share of applicants from government institutions than private ones. While more than 3/4th of loan applicants from government institutes were granted loans, only 65.4% of SL applications were accepted from private institutes. Moreover, successful applicants from government institutions were granted a higher amount by banks (₹7.31 lakh) than that sanctioned to applicants from private institutions, i.e., ₹6.77 lakh.

- The share of management students applying for SLs is about double that of engineering students, i.e., 31.3% compared to 15.9%. Logit estimates also indicate that management students are 21% more likely to apply for SLs than engineering students. Further, banks grant SLs to a higher share of management students (85.9%) than engineering graduates (65.6%). Also, successful applicants pursuing MBA/PGDM courses were sanctioned a higher loan amount (₹8.15 lakh) than those attending BTech courses, i.e., ₹6.43 lakh.

- Students' opinions and experiences regarding access to SLs reveal several problems at different stages. They face multiple problems due to the complex application procedure. While granting loans, most of them face discrimination from banks based on their socioeconomic and institutional settings. Further, after the loan is sanctioned, borrowers face additional problems such as stress regarding academic performance, securing a job and loan repayment. A blend of academic, co-curricular activities, family burden, and banks' conditions often push the borrowers towards a situation of constant anxiety and stress.

Appendix to Chapter 5

Table A5.1: IBA's Model Education Loan Scheme 2015 at a Glance

Criteria	*Details*
Revision	• Initiated (28th April 2001); First revision (27th September 2012) • 2nd Revision (17th August 2015); Amended (3rd June 2016)
Objective	• To provide financial support to meritorious students for pursuing higher education in India and abroad
Eligibility	• Students should be an Indian national • Should have secured admission in HE courses in a recognized institution in India or abroad
Expenses Covered	• Fees and caution deposit payable to institution • Insurance premium of student borrower • Travel expenses for studies abroad • Books, uniforms, computer, study tours, project work, thesis, etc. • Scholarship amount (if any) considered while granting loan
Credit Limit	• Maximum loan up to ₹10 lakhs for studies in India • Maximum loan up to ₹20 lakhs for studies abroad
Margin	• No collateral for loans up to ₹4 lakh • 5% collateral for loans above ₹4 lakh for studies in India • 15% collateral for loans above ₹4 lakh for studies abroad
Collateral	• No collateral for loans up to ₹4 lakh • Above ₹4 lakh and up to ₹7.5 lakh – parents as a joint borrower and third-party guarantee • Above ₹7.5 lakh – parents as a joint borrower & tangible collateral security of a suitable value acceptable to bank
Interest	• Base rate or MCLR as decided by individual banks • Simple interest charged during study period and until repayment starts • 1% interest concession for loanees if interest is serviced during the period when repayment holiday is specified for interest/repayment
Procedure	• Applications received either directly at bank or through an online mode • Sanction or rejection within 15 days of receipt of application • Loan amount disbursed in stages directly to institutions as per requirement • Loan rejection (if any) done with concurrence of bank authority
Repayment	• Course period plus one year • Equal monthly instalments for 15 years; No prepayment penalty levied • In case of dropout, appropriate repayment schedule to be made by bank in consultation with student/parent. • Extension for completing course for a maximum period of 2 years
Progress Reports	• Institution required to share borrower's academic progress reports with the bank at regular intervals, if asked by the bank

Source: Compiled by the research scholar from scheme guidelines available on the IBA website. (Accessed 10th April 2022)

Table A5.2: CSIS Scheme, 2009 for Education Loans in India

Criteria	*Details*
Revised	• Scheme modified with approval of the Cabinet on 28th March 2018 • Applicable on education loans taken after 1st April 2018
Objectives	• Scheme is adopted by all Scheduled Banks and is linked with the existing IBA Model Educational Loan Scheme • Targets economically weaker students pursuing professional or technical courses in India. • To provide full interest subsidy during the moratorium period on loans without any collateral security and third-party guarantee. • Subsidy is admissible only once, either for undergraduate or postgraduate or integrated courses. • Education loan is provided without any collateral security, and third-party guarantee and for a maximum amount of ₹7.5 lakhs
Eligibility	• Students enrolled in professional or technical courses only in NAAC accredited institutions or programs accredited by NBA and CFTI • Education loans taken under IBA Model education loan scheme • Students whose annual gross family income is up to ₹4.5 lakhs • Scheme is independent of any other schemes which may cater to EWS • No subsidy for students who discontinue their course midstream or who are expelled from their institution • Subsidy would be available if discontinued on medical grounds
Interest Rate	• As per the BPLR/Base Rate of the individual banks and as per the provisions under IBA Scheme • Interest for the moratorium period is borne by the Government • After the period of moratorium, the interest on the outstanding loan amount shall be paid by the student, in accordance with the provisions of the existing IBA scheme
Interest Concession	• 1% interest concession for loanees if interest is serviced during the period when repayment holiday is specified for interest/repayment
Disbursement	• Subsidy disbursed half-yearly or yearly basis, as decided by MHRD
Moratorium Period	• Course duration plus one year
Certificates Tags	• An electronic tag on the degree to indicate the repayment liabilities • To enable employers to identify loanees
Nodal Bank	• Canara Bank

Source: https://www.vidyalakshmi.co.in/Students/resources/SubsidyScheme.html

Table A5.3: Higher Education & Skill Development Guarantee Scheme (Delhi Government)

Criteria	*Details*
Features	• Corpus of ₹30 crores called the *'Higher Education and Skill Development Credit Guarantee Fund'* to provide guarantee to banks in case of default • Banks availing the guarantee facility are charged an Annual Guarantee Fee (AGF) of 0.5% of outstanding loan amount
Eligibility	• Students who wish to pursue diploma or degree level courses in Delhi and have done their classes X and XII from Delhi • Students who did classes X and XII from Delhi and pursuing a degree or diploma in Central, or State Govt institutions outside Delhi but within India
Expenses Covered	• Fees and caution deposit payable to institution • Insurance premium of student borrower • Books, uniform, computer, study tours, project work, thesis, etc. • Scholarship amount (if any) considered while granting loan
Credit Limit	• Maximum loan up to ₹10 lakhs • Ordinarily loans up to ₹7.5 lakhs • Loans above ₹7.5 lakh & up to ₹10 lakh for students from institutions with SFRC grading of A+ or A
Collateral	• No collateral for loans up to ₹10 lakh • Scheme is universal regardless of student's background • Parents/legal Guardians to be joint borrowers
Interest	• Base rate as decided by individual banks • Simple interest charged during study period and until repayment starts • Maximum interest rate of Base Rate + 2% • 1% interest concession for loanees if interest is serviced during the period when repayment holiday is specified for interest/repayment
Procedure	• Applications received either directly at bank or through online mode • Sanction or rejection within 15 days of receipt of application • Loan amount disbursed in stages directly to institutions as per requirement • Loan rejection (if any) done with concurrence of bank authority and the Directorate of Higher Education, Delhi
Repayment	• Course period plus one year • No prepayment penalty levied • Equal monthly instalments for 15 years • In case of dropout, appropriate repayment schedule to be made by bank in consultation with student/parent. • Extension for completing course for a maximum period of 2 years
Progress Reports	• Institution required to share borrower's academic progress reports with the bank at regular intervals, if asked by the bank

Source: Official Website of Government of NCT of Delhi. Guidelines available at: http://it.delhigovt.nic.in/writereaddata/Sch20155721.pdf (Accessed 10th April 2022)

Table A5.4: State-wise Education Loan Accounts of Scheduled Commercial Banks

	2004-05		2020-21		CAGR	
	Account	Amount O/s	Account	Amount O/s	Account	Amount O/s
Andhra Pradesh	88014	1352	82613	3745	-0.40	6.60
Arunachal Pradesh	25	0	357	11	18.10	26.60
Assam	1319	24	12434	414	15.10	19.40
Bihar	6240	93	70391	2465	16.40	22.70
Chandigarh	2113	44	3402	186	3.00	9.50
Chhattisgarh	2846	37	17693	582	12.10	18.90
Delhi	13721	338	32703	1515	5.60	9.80
Goa	1305	19	4039	178	7.30	150
Gujarat	16248	370	42149	1842	6.10	10.60
Haryana	7250	121	26622	1146	8.50	15.10
Himachal Pradesh	1735	25	10273	356	11.80	17.90
Jammu & Kashmir	1370	22	13207	453	15.20	20.70
Jharkhand	5187	74	37451	1463	13.20	20.60
Karnataka	46273	552	169160	5327	8.40	15.20
Kerala	68583	757	294803	7854	9.50	15.70
Madhya Pradesh	21053	239	61581	2014	6.90	14.30
Maharashtra	41181	576	173121	5611	9.40	15.30
Orissa	9762	118	35839	1313	8.50	16.20
Pondicherry	2318	23	8788	257	8.70	16.20
Punjab	9105	170	24951	1240	6.50	13.20
Rajasthan	9933	128	38292	1487	8.80	16.60
Tamil Nadu	88707	1001	550817	12757	12.10	17.20
Telangana*	---	---	49146	2771	---	---
Uttar Pradesh	25456	333	78998	2707	7.30	14.00
Uttaranchal	3825	54	34575	1312	14.80	22.10
West Bengal	15008	208	54547	1929	8.40	14.90
All India	489445	6694	1936065	61213	9.00	14.80

Source: Compiled by the Research Scholar from Statistical Tables relating to Banks in India, Reserve Bank of India (various years).

Note: Number of Accounts in absolute terms; Amount in (₹) Crore.

*Telangana was a part of Andhra Pradesh in 2004-05. It became an independent state on 2nd June 2014.

Table A5.5: Summary statistics of the variables used in the Analysis

Variable	NOB	Mean	SD	Min	Max
Dependent Variables					
loan_applied	1,508	0.191	0.393	0	1
lnloan_amt_sanction	207	13.280	0.660	10.820	14.509
Independent Variables					
gender	1,508	0.825	0.380	0	1
caste	1,508	3.486	0.778	1	4
lnfamily_income	1,508	13.603	1.273	10.491	16.300
sibling	1,508	1.587	1.123	0	8
home_ownership	1,508	0.813	0.390	0	1
father_edu	1,508	13.805	3.311	0	21
father_occup	1,508	2.248	0.953	1	4
personal_loan	1,508	0.195	0.396	0	1
inst_type	1,508	0.450	0.498	0	1
course	1,508	0.210	0.407	0	1
part_time_job	1,508	0.213	0.409	0	1
clg_tieup_loan	1,508	0.446	0.497	0	1
xii_marks	1,508	0.596	0.491	0	1
application_mode	288	0.451	0.498	0	1

NOB=Number of Observations; SD=Standard Deviation

Table A5.6: Determinants of Likeliness of Applying for Student Loans among PHE Graduates in Delhi: Probit Estimates

	Simple Model		*Models with Interaction Effect*	
	Model 1		Model 2	Model 3
	(Coefficient)	(AME)	(Coefficient)	(Coefficient)
gender	.198*	.046*	.255*	.204*
	(.118)	(.027)	(.142)	(.118)
caste (Ref. - ST)				
SC	1.042***	.204***	1.038***	1.040***
	(.410)	(.054)	(.412)	(.410)
OBC	.889**	.162**	.882**	.885**
	(.400)	(.047)	(.401)	(.400)
UC	.650*	.105*	.638*	.640*
	(.401)	(.045)	(.402)	(.401)
lnfamily_income	-.067**	-.016**	.000	.000
	(.035)	(.008)	(.000)	(.000)
sibling	.074**	.017**	.077**	.077**
	(.034)	(.008)	(.034)	(.034)
home_ownership	-.533***	-.124***	-.539***	-.539***
	(.098)	(.022)	(.098)	(.098)
father_edu	-.032**	-.007**	-.034***	-.034***
	(.013)	(.003)	(.013)	(.013)
father_occup (Ref. – Govt Job)				
Private	.213*	.048*	.225**	.228**
	(.115)	(.025)	(.113)	(.113)
Self-employed	.189*	.042*	.202*	.201*
	(.114)	(.025)	(.113)	(.113)
Others	.347**	.082**	.378**	.378**
	(.166)	(.041)	(.164)	(.165)
xii_marks	.170**	.040**	.165*	.167*
	(.088)	(.020)	(.088)	(.088)
institution	-.160*	-.037*	-.165**	-.164*
	(.086)	(.020)	(.086)	(.102)
course	.900***	.210***	.891***	.888***
	(.105)	(.023)	(.105)	(.105)
part_time_job	.400***	.093***	.399***	.400***
	(.091)	(.021)	(.091)	(.091)
clg_tieup_loan	.451***	.105***	.452***	.450***
	(.081)	(.018)	(.081)	(.081)
gender#family_income	---	---	.000*	---
			(.000)	

institution#family_income	---	---	---	.000*
				(.000)
Constant	-.895*		-1.782***	-1.733***
	(.516)		(.480)	(.465)
Prob > Chi^2	0.000	---	0.000	0.000
R Square	0.142	---	0.142	0.142
Observations	1,508	1,508	1,508	1,508

Notes: Robust standard errors in parentheses; ***p<0.01, **p<0.05, and *p<0.1
AME=Average Marginal Effect

Table A5.7: Determinants of Loan Amount Sanctioned by Commercial Banks: Heteroscedasticity-consistent OLS Results

	Eqn. 1 Overall	*Eqn. 2* Engineering	*Eqn. 3* Management
gender	.325***	.065	.502***
	(.122)	(.232)	(.171)
caste (Ref. – ST)			
SC	-.138	-.407	---
	(4.879)	(5.867)	
OBC	-.128	-.359	-.127
	(4.876)	(5.867)	(.547)
UC	-.191	-.409	-.057
	(4.877)	(5.867)	(.534)
lnfamily_income	.052*	-.032	.178***
	(.030)	(.046)	(.050)
personal_loan	-.175*	-.095	-.401**
	(.100)	(.121)	(.173)
xii_marks	.442***	.363**	.596***
	(.105)	(.164)	(.154)
inst_type	.005	.019	.078
	(.097)	(.140)	(.143)
course	.345***	---	---
	(.114)		
application_mode	.249***	.211	.304**
	(.097)	(.137)	(.141)
Constant	11.983***	13.610	10.264***
	(4.909)	(45.874)	(.828)
Prob > F	0.000	0.000	0.000
R Square	.204	.147	.363
Observations	207	122	85

Notes: Robust standard errors (heteroscedasticity-consistent) in parentheses
*** p<0.01, ** p<0.05, * p<0.1

CHAPTER 6

STUDENT LOANS & LABOUR MARKET OUTCOMES OF PROFESSIONAL GRADUATES IN DELHI

6.1 Introduction

The massive expansion of professional higher education (PHE) sector in India has come at the cost of education quality (Carnoy *et al.*, 2013; Loyalka *et al.*, 2014). Except for a few prestigious institutions, such as IITs and IIMs, majority of the higher education institutions are unable to provide quality professional education that would ensure suitable jobs for students (Gambhir *et al.*, 2019). The affiliating university system, inadequate infrastructure, outdated curricula, shortage of qualified teachers, and ineffective teaching/learning process have contributed to the lowering of standard of technical education in the country (Biswas *et al.*, 2010). This has led to a problem of massive unemployment and underemployment of technical graduates in the country. Several research studies have pointed out that the majority of Indian graduates are not fit for employment (FICCI, 2013; Aspiring Minds, 2019; Tilak & Choudhury, 2021; India Skills Report, 2022). For instance, the NASSCOM-McKinsey report[1] (2005) concluded that only 1/4th of the engineering graduates in India are employable in appropriate fields. The FICCI (2013) acknowledged that only 25% of the country's engineers and MBAs are employable. It was observed that only seven per cent of the total MBAs in 2016 turned out to be employable, excluding those from the top 20 B-schools (ASSOCHAM, 2016)[2]. Moreover, a few studies have pointed out the issue of low employability of engineering and management graduates in India, except for those from prestigious institutes (Gokuladas, 2010, 2011; Padmini, 2012; Jha & Kumar, 2012; Tilak & Choudhury, 2021). Just 2.5% of engineering graduates are competent in artificial intelligence, and

[1] Available at https://silo.tips/download/nasscom-mckinsey-report-2005 (accessed 10th April 2022).

[2] Available at: http://www.assocham.org/newsdetail.php?id=5651 (accessed 6th December 2018)

less than 4.5% and 5.3% possess the necessary skills in data engineering and wireless technologies required by industry, respectively (Aspiring Minds, 2019). According to the India Skills Report (2022), around 55% of BTech and MBA graduates in India are employable. In 2016, this employability rate was 52.6% among engineering graduates and 44.6% among MBA graduates. One of the primary causes of widespread unemployment among engineering graduates is the demand-supply mismatch for skills in the labour market (Tilak & Choudhury, 2021). Due to this, as reported in several print media, many private engineering colleges have been shut down (or converted to supermarkets, private schools, and gymnasiums) in states like Uttar Pradesh, Haryana, Andhra Pradesh, and Telangana in recent years (AICTE, 2021).

It is argued that investment in education raises individuals' future income (Woodhall, 1987: p.21). Therefore, investment in education through student loans (SLs) further raises questions about borrowers' labour market outcomes. The linkage between student loan take-up and graduates' labour market outcomes is studied extensively around the globe. A significant body of literature suggests that SL debt restricts borrowers' choice of jobs and occupations (Purcell & Elias, 2010; Purcell *et al.,* 2012). Student loan borrowings also prevent graduates from taking the financial risks necessary to start a business (Ambrose *et al.,* 2015; Checovich & Allison, 2016; Krishnan & Wang, 2019). In fact, debt sometimes pushes graduates to hold a job that is not their first choice (Purcell *et al.,* 2012), and this leads to consistent non-satisfactory job experience among SL borrowers (Luo & Mongey, 2016; Weidner, 2016; Gervais & Ziebarth, 2019). Further, while several studies have found a negative relationship between SL borrowing and the earnings of the students (Price, 2004; Weidner, 2016a; Ji, 2021), others established a positive relationship between the two (Minicozzi, 2005; Rothstein & Rouse, 2011; Chapman, 2016; Luo & Mongey, 2016). For instance, an additional $1,000 of student debt increases the student's future earnings by 2.5 percentage points in the United States (Black *et al.,* 2020, p.29). While some evidence is generated in this line at the global level, literature in the context of India is sparse.

Considering the gloomy labour market situation for professional graduates in India, it is imperative to examine graduates' job aspirations, especially those who have borrowed student loans to finance their courses. Borrowers begin their careers saddled with loan obligations that consume their earnings and deprive them of other crucial investment possibilities in the initial

stages of their careers (Ambrose *et al.*, 2015; Checovich & Allison, 2016). Given job uncertainties, it becomes difficult for borrowers to repay the loan after completing the course. What are the anxieties and stress graduates face due to job market uncertainties? How does it affect the long-term career trajectories and earnings of borrowers and non-borrowers? A gap exists in the understanding of these issues. Although several studies worldwide have examined the linkage between student debt and graduates' labour market outcomes (as discussed above), hardly any study could be found that unfolds this issue in the Indian context. Identifying the labour market aspirations and fear of professional graduates would help the government, higher education institutions and stakeholders to facilitate supportive measures to help recent graduates, especially in the context of the Covid-19 pandemic.

In this context, this chapter attempts to analyse the employment probabilities and related aspects of PHE graduates in Delhi. A major focus of the chapter is to compare the two groups of students (borrowers and non-borrowers) in two important dimensions of labour market outcomes, such as employment probability and their offered/expected earnings. Additionally, we discuss the expected ripple effect of student debt on life choices of borrowers. Comparing these two groups is important from the viewpoint of students' attitudes toward debt. Are borrowers stressed about their future job prospects and loan repayment? If yes, then how does SL borrowing affect students' life? To explore these questions, the information collected regarding campus placement, i.e., whether graduates have got a job offer, is taken as their employment status. Similarly, information on the annual package offered to them is taken as their actual earnings from the job. It is important to mention that we restrict the sample to final-year students for this chapter's analysis, which came out to be 764 students. Thus, students securing campus placements have not yet entered the job market and will join the offered job after completing the course. Though surveying the graduates who are actually engaged in jobs would have given a clear picture of the labour market outcomes of PHE graduates in Delhi, this survey covers only those currently studying. However, some important labour market aspects of PHE graduates are examined using the survey data.

The rest of the chapter proceeds as follows: Section 6.2 examines the labour market expectations or outcomes of PHE graduates in Delhi. Using descriptive statistics, it focuses on comparing the expectations/outcomes of SL borrowers with their non-borrower counterparts.

Section 6.3 analyses the determinants of employment and earnings of PHE Graduates using a two-step Heckman selection model. Section 6.4 explores the ripple effects of student loan debt on borrowers' life choices, such as further studies vis-à-vis job, career choices, homeownership, buying a car, marriage, and financial contribution to family. The last section provides a summary of major findings.

6.2 Labour Market Outcomes or Expectations of PHE Graduates in Delhi

In professional courses like engineering and management, students usually expect a job placement before completing their course, mostly in the final year.[3] Various companies and organisations select graduates through campus recruitment drives as per their requirements.[4] Recruiters mainly shortlist and select graduates based on their individual factors and educational status. Factors relating to education status include past and present academic performance, medium of instruction, type of institution, course of study, non-academic engagements, and student loan status, i.e., whether the candidate is a student loan borrower or not. If the prospective candidate is a SL borrower, the employer might offer help to repay their SL debt, partially or fully. Recruiters mainly offer clauses and conditions like these to attract and retain young talent. In this context, this section uses descriptive statistics to examine the labour market outcomes of final-year PHE graduates in Delhi. It addresses who gets jobs through campus recruitment drives and how much salary they are offered, focusing on comparing borrowers with non-borrowers. Further, it discusses the future job expectations of students who did not secure any campus placement, such as after-course plans (job or further studies), expected time of securing a job and expected salary.

In the current survey, around 22.5% of final-year students (172 in number) secured jobs through campus placement (see Figure 6.1).[5] We note wide variations in the share of students

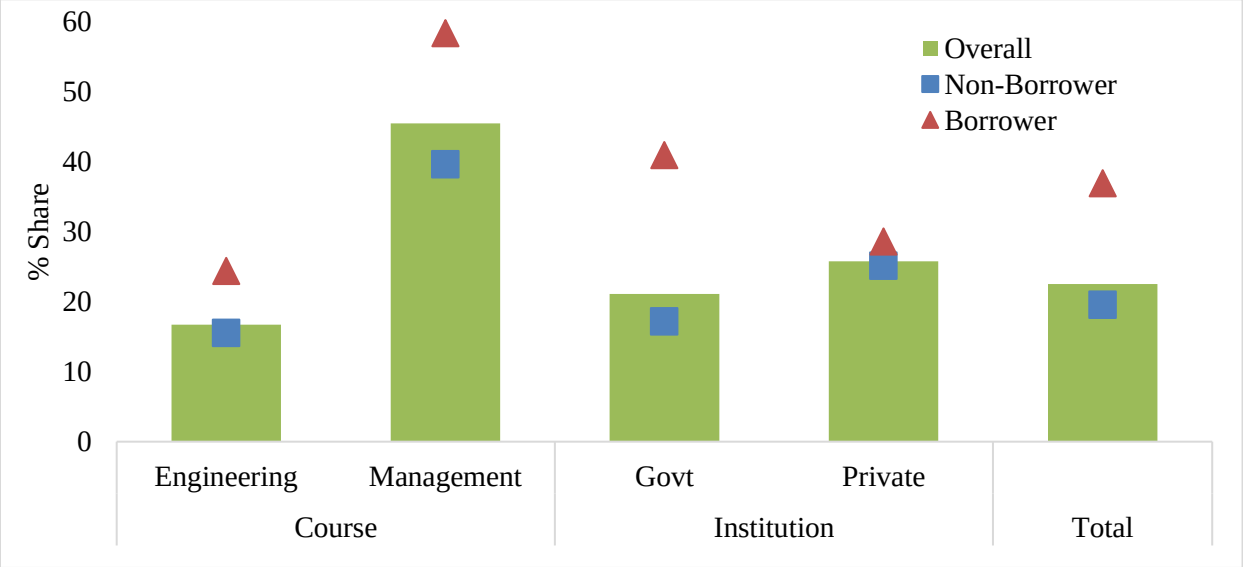
[3] For the same reason last year students (both BTech and MBA/PGDM) are considered for the analysis in this chapter.

[4] According to the annual reports of various institutions, major recruiters that visited different institutions in Delhi for campus placement in 2019-20 academic year include: Google, Amazon, Flipkart, Adobe, LinkedIn, Bajaj FinServ, Samsung, Philips, Dell, Up Grad, BenQ, Accenture, KPMG, Deloitte, PWC, Xiaomi, Microsoft, Intel, SanDisk. Oracle, Paytm, Swiggy, Zomato, Urban Company, etc.

[5] During the time of survey, campus placements took place in some institutions and were delayed in several other institutions due to Covid-19 pandemic. A separate study is needed to examine how the pandemic has disturbed the job market opportunities of professional higher education graduates in Delhi.

securing jobs between borrowers and non-borrowers. Placement rate by student loan status reveals that while around 36.9% of the loan borrowers secured campus placements, only about 19.6% of their counterparts without SL got job offers (see Figure 6.1). Why are the placement rates among borrowers quite higher than non-borrowers? This is, perhaps, an outcome of borrowers' better academic performance and active participation in various academic and non-academic activities. As discussed in chapter 5 (p.163), a higher share of borrowers secured more than 80% marks, and they also want to get noticed in every aspect of college activities to maintain a good image among their teachers and peers. According to them, academic and non-academic engagements are deemed necessary to get good internal grades and secure a campus placement.

Figure 6.1: Share of Final Year Graduates who secured Jobs through Campus Placement



Source: Research scholar's calculation from the primary survey data.[6]

Placement rate is quite high among final-year students pursuing management courses (45.5%) than their counterparts in BTech courses, i.e., 16.7% (see Figure 1). This inter-course gap in placement rate further increases in the case of SL borrowers. Specifically, the placement rate among borrowers in MBA/PGDM courses (58.3%) is quite higher than their counterparts pursuing BTech courses (24.4%). A possible explanation for this might be that MBA/PGDM course is a postgraduate course, and students in these courses might have relatively more work experience

[6] Source for all the tables and figures in this chapter is same, until otherwise mentioned.

than those pursuing BTech courses, to which employers might give preference. By type of institution, placement rate is slightly higher in private institutions. Of the total final year graduates in government institutions, 21.1% secured a job in campus recruitment drives, and this figure was 25.8% in private institutions. However, while looking at the borrowers, the placement rate was quite high among borrowers attending government institutions (40.9% placement rate) than their counterparts in private ones, i.e., 28.6% (see Figure 6.1). This might indicate that while selecting SL borrowers, recruiters preferred applicants from government institutions over those attending private ones. These findings raise important questions: how do SL borrowers from engineering courses and private institutions (reporting less placement rates) plan to repay their student loans? Are they stressed about their labour market outcomes? Will they rely on their family for repayment? More discussion on these points is done in section 6.4 of this chapter.

Students' choice of stream or discipline is one of the most critical decisions. Therefore, it is quite important to examine graduates' choice of job field to compare the job aspirations of borrowers with non-borrowers. Do SL borrowers accept any job offer even if it is unrelated to their discipline? Results reveal that more borrowers accept job offers in their fields, i.e., 81.3%, a figure which is 75% in the case of non-borrowers (see Figure 6.2). This contradicts the findings of some studies, which established that student loan debt is associated with graduates holding a job that was not their first choice (Purcell & Elias, 2010; Purcell *et al.*, 2012). This indicates that borrowers seek jobs in their respective fields and are very particular while applying for a company in campus placement drives. Also, this may result from an informed initial selection of discipline among the borrowers. In engineering education, around 69.2% of total enrolments are in IT-related streams, and only 30.8% are in traditional courses[7] (see Table 6.1). The enrolment share in IT courses is higher (74%) among the borrowers. In this context, Rothstein and Rouse (2011) revealed that students eligible for loans were more likely to choose disciplines that led to occupations with higher earning potential. In an interview, an engineering student who borrowed SL for his studies shared the following:

[7] IT-related streams include computer science engineering, electronics and communication engineering, information technology, and telecommunication engineering. Traditional courses include mechanical, civil, and electrical engineering.

"I had long discussions and arguments with my family regarding the choice of engineering stream before admission. Some reputed and affordable colleges were available for admission, but they did not offer any IT-related courses. I did not want to pursue mechanical engineering as it has relatively less scope in the labour market, so I chose an expensive college offering IT-related courses. Because of this choice, I had to take a student loan. However, I will get a good package in campus placement, and my choice will be validated."(Respondent 11)

Figure 6.2: Is the job related to your field of study?

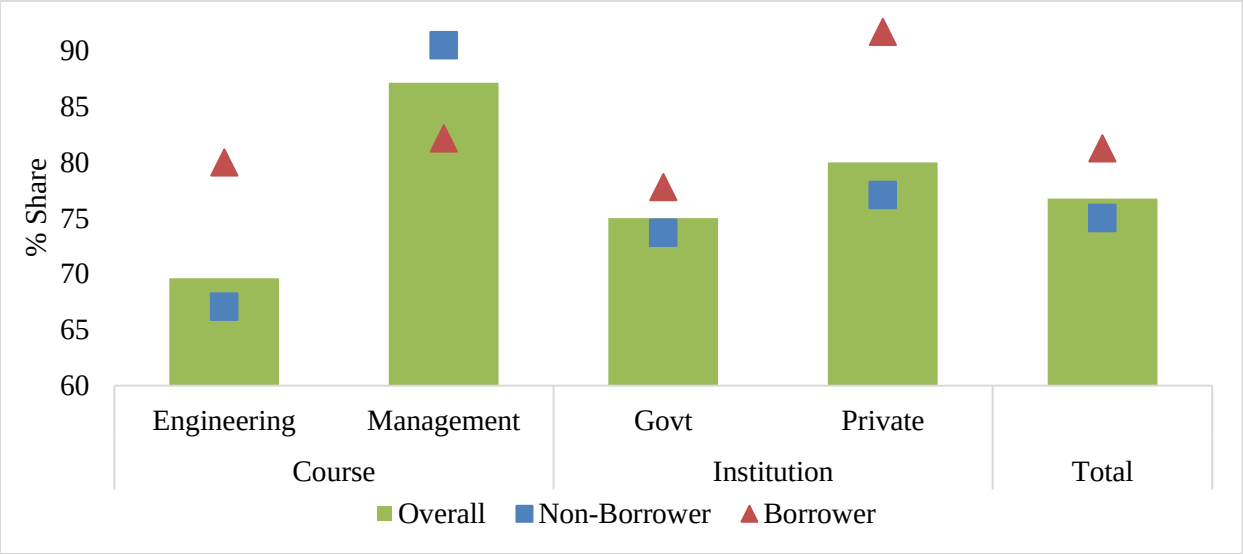


Table 6.1: Enrolment Distribution by Discipline and Student Loan Status

		Non-Borrowers	Borrowers	Overall
Engineering	Traditional	31.3	26.0	30.8
	IT/Modern	68.7	74.0	69.2
	Total	100	100	100
Management	Finance	39.8	31.8	37.7
	Marketing	28.1	36.5	30.4
	Others	32.0	31.8	32.0
	Total	100	100	100

Therefore, data (from survey and interviews) reveals that engineering borrowers are very particular about their choice of stream. Placements as a share of engineering enrolments in IT-related fields have gone up from 12.1% in 2012-13 to 47.9% in 2016-17, reporting an increase of

about four times (Tilak & Choudhury, 2021). On the other hand, the corresponding share in traditional engineering courses grew slowly from 29.7% to 37.8% during the same period (ibid: p.96). Similarly, management graduates' preference is leaned toward marketing and finance streams which have relatively higher scope in the labour market. However, in MBA/PGDM courses, more non-borrowers (90.5%) accept jobs in their respective fields than their borrower counterparts, i.e., 82% (see Figure 6.2). Is it because different disciplines in management courses are interrelated (which might help graduates to take up jobs in the fields that are closely related to their disciplines), which is absent in the case of different engineering disciplines?

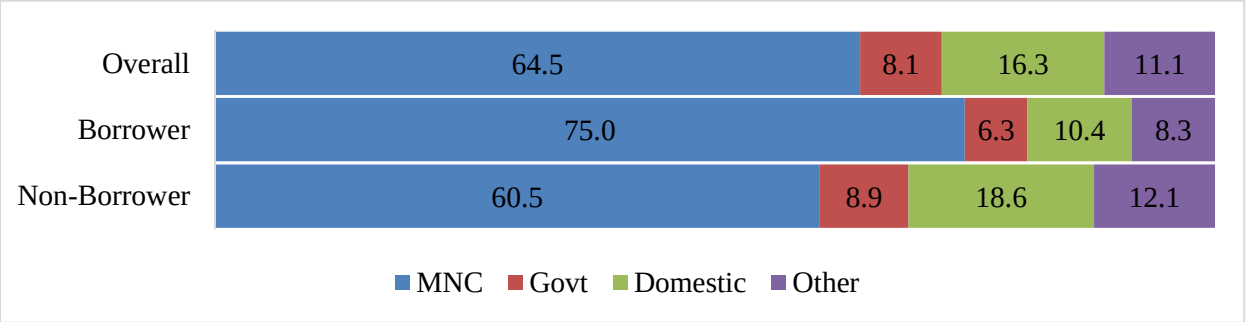
Another important factor (besides course and institution type) for securing a job via campus placement is the marks secured by the student in the previous semester. Placement rates were relatively higher among students who secured more than 80% in the last semester of their current course (25.7%) than those securing less than 80%, i.e., 17.9% (see Table 6.2). This gap further increases in case of SL borrowers. Quite a higher share of borrowers with high marks was offered jobs (43.9%), but marks did not seem to have much effect on selection of non-borrowers as the placement rate was 21.4% among non-borrowers with more than 80% marks. Perhaps, employers give much weightage to students' marks in the case of recruiting SL borrowers. Gokuladas (2011) also found that grade point average (GPA) is one of the important predictors of securing jobs in campus recruitment drives among engineering graduates in South India. Aspects like GPA allow candidates to showcase their skills to employers and reduce the information gap.

Of the total job offers made to PHE graduates in campus placements, around 64.5% were made by Multi-National Companies (MNCs), followed by domestic companies (16.3%), government companies (8.1%) and other companies taken together (11.1%) (see Figure 6.3). This may be because most recruiters in campus recruitment drives were MNCs. As mentioned earlier, major recruiters that visited different engineering and management institutions in Delhi for campus placement in 2020-21 academic year include Google, Amazon, Flipkart, Adobe, LinkedIn, Samsung, Philips, Dell, Accenture, KPMG, Deloitte, PWC, Xiaomi, Microsoft, Intel, SanDisk and Paytm. Further, we note stark differences in the choice of companies between borrowers and non-borrowers. While 3/4th of borrowers got jobs in MNCs, only 60.5% of their counterparts were offered jobs in these companies. Perhaps, borrowers expect or target to secure a high-paying job

due to repayment burden, which is mostly offered by MNCs. Stating his plan of job placement, a SL borrower from a private institution mentioned that:

> *"There are some MNCs that offer high packages. These companies also help in loan repayment if they hire. But getting into these companies is tough. They consider GPA, complete educational background, non-academic engagements, and internships. Therefore, students should make a balance of all these activities during the course if they want to get into these companies."* (Respondent 23)

Figure 6.3: Type of Company where the Job is Secured



Similarly, a female student loan borrower in the final year of an MBA course shared her anxiety about loan repayment. She stated that:

> *"Repaying the huge loan amount becomes a burden for freshers who are about to enter the job market. I will find it difficult to repay my student loan if my future salary is insufficient to cover the loan EMI and personal living expenses. Due to this, freshers sometimes take loans from their companies to repay their debt."* (Respondent 23)

These experiences depict that some borrowers prefer to take jobs in companies which help them repay their SL debt. In fact, some of the MNCs also offer to repay the partial or full amount of SL borrowed by the graduates. Clauses and conditions like these also persuade students to choose MNCs over other companies. Borrowers might also choose higher-paying employment over occupations that meet their interests and are less likely to shift jobs, portraying a less risky job market behaviour (Chapman, 2016; Weidner, 2016a; Gervais & Ziebarth, 2019). The preference of borrowers toward high-paying MNCs is also reflected in the level of salary offered in campus placements, which is discussed here.

We find that the average annual salary offered to PHE graduates in campus placements was ₹7.55 lakh. This figure varied from ₹7.13 lakh to ₹8.65 lakh between non-borrowers and borrowers, respectively (see Table 6.2). Thus, based on our sample, we note that SL borrowers in Delhi end up accepting high-paying jobs in campus recruitment drives. This corroborates with the finding of some studies establishing a positive association between student debt and earnings (Minicozzi, 2005; Rothstein & Rouse, 2011; Chapman, 2016; Luo & Mongey, 2016) and contradicts other studies concluding a negative relationship between the two (Price, 2004; Weidner, 2016a; Ji, 2021). The pattern of high salary among borrowers holds true irrespective of course and institution type. Thus, SL borrowers tend to take up jobs with high incomes, which enables them to repay the debt quickly.

Table 6.2: Share of Students who Secured Campus Placement & Salary Offered

		% Share			*Salary Offered*		
		Non-Borrower	Borrower	Overall	Non-Borrower	Borrower	Overall
Gender	Female	30.36	20.00	28.47	5.68	6.10	5.73
	Male	17.24	40.95	21.21	7.67	8.94	8.08
Caste	ST*	---	---	---	---	---	---
	SC	16.18	25.00	18.18	7.71	4.35	6.66
	OBC	16.57	39.53	21.10	6.99	10.02	8.11
	UC	21.07	38.81	23.76	7.28	8.58	7.60
Religion	Hindu	18.18	38.33	21.85	7.24	8.70	7.70
	Muslim	25.45	16.67	24.59	7.30	5.00	7.15
	Others	30.00	25.00	29.55	5.99	10.00	6.30
	Urban	20.30	34.34	22.78	7.18	9.33	
Institution Type	Government	17.16	40.91	21.09	7.88	9.46	8.39
	Private	25.13	28.57	25.75	5.93	6.21	5.98
Course	Engineering	15.53	24.39	16.72	7.55	9.30	7.89
	Management	39.62	58.33	45.45	6.30	8.18	7.05
Income Quintile	Q1 (Poorest)	15.12	37.93	18.41	6.99	8.27	7.37
	Q5 (Richest)	22.86	55.56	29.55	8.95	11.53	9.94
Last Sem Marks	Less than 80%	16.36	26.67	17.89	6.89	6.03	6.70
	More than 80%	21.39	43.90	25.70	7.33	10.13	8.25
Total		19.60	36.90	22.50	7.13	8.65	7.55

*No observations for ST students who secured campus placement.
Note: Private institutions include both aided and unaided.

Besides institutional factors, we note socioeconomic inequalities in the job placements and earnings of PHE graduates in Delhi. There exists a gender gap in job offerings and salaries offered in campus placements. Placement rate was relatively higher among female students (28.5%) than males, i.e., 21.2% (see Table 6.2). Contrarily, the placement rate among male SL borrowers is more than double that of female SL borrowers. This gender gap is not only limited to job offers but also noted for annual salary offered to selected candidates. Average annual salary offered to male candidates was ₹8.08 lakh, 1.4 times that of their female counterparts. This finding goes with the established literature on gender wage gap around the world (Altonji & Blank, 1999; Appleton *et al.,* 1999; Fafchamps *et al.*, 2009; Nordman & Wolff, 2009; Bertrand, 2011; Bhorat & Goga, 2013; Blau & Kahn, 2017; Ntuli & Kwenda, 2020). For instance, Sterling *et al.* (2020) found that, on average, women with a UG-level engineering degree earn less than $61,000 annually in the United States, whereas men with the same degree earn above $65,000 annually (p.30304). Similarly, Michelmore and Sassler (2016) noted a significant gender wage for individuals working in STEM occupations in the US. The average annual earnings of white women in STEM workforce are about 84 cents for every dollar their male counterparts earn (ibid: p.209).

By caste groups, placement rates are highest among UC students (23.8%), followed by OBCs (21.1%) and least among SCs, i.e., 18.2% (see Table 6.2). While a similar kind of caste hierarchy is observed among SL borrowers, the placement rates of SL borrowers are relatively higher in each caste group than their non-borrower counterparts. Similarly, the annual salary offered to students from these groups ranged from ₹6.66 lakh (STs) to ₹8.11 lakh (OBCs).

We note a significant rich-poor gap in placement rates and salary offered to PHE graduates in Delhi. While the placement rate among the students from lowest family income quintile (Q1) was 18.4%, it was 29.6% among those belonging to the richest quintile, i.e., Q5 (see Table 6.2). This gap further widens among SL borrowers. The placement rate among borrowers in Q1 was 37.9%, relatively low compared to 55.6% among borrowers in Q5. Similarly, candidates from families with low economic status ended up securing an annual salary of ₹7.37 lakh, considerably lower than their rich counterparts, i.e., ₹9.94 lakh (see Table 6.2). This rich-poor gap in salary further increases in the case of borrowers, wherein those from low-income families were offered an annual salary of ₹8.27 lakh, quite less than borrowers from rich families (₹11.53 lakh). Despite

this gap, borrowers end up accepting higher salaries than their non-borrower counterparts. These results align with the findings of Azmat and Simion (2017), which established that the earnings of students with loan debt increase with higher socioeconomic status in the UK.

Students' Expectations regarding Placement and Earnings

As discussed above, borrowers target to secure jobs to start repaying the loan amount as soon as possible. However, not all borrowers are able to secure jobs in campus placements. Of the total students in the final year, 77.5% did not secure any job through campus placement drives. This figure was 63.1% in the case of borrowers and 80.4% among non-borrowers (see Table 6.3). These graduates might feel extra pressure to find a job after completing their current course. Who are these borrowers who were not offered any job in campus placement? Do they belong to any particular type of course or institution? Are they stressed about securing a job soon after completing their course? What are their expectations from the job market? How do they plan to repay the loan? These are some major questions that lead this discussion.

When asked about the expected time of securing a job, half of the graduates cited that they will be able to secure a job within a month of completing their current course. Further, 34% expect to secure a job within 12 months, and 16.9% think they will get a job after one year of course completion (see Figure 6.4). Though there are no variations in the timing of expected jobs between the borrowers and non-borrowers, we note a wide gap in expectations based on their family's economic status. More borrowers from low-income families (58.5%) expect to secure a job within a month, a figure which is only 38.5% in the case of their counterparts from rich families. This implies that borrowers from low-income families are in stress to secure a job quickly. It is important to note that the moratorium period of student loans is one year after course completion, which compels borrowers to take a job as soon as possible. Sharing his anxiety regarding the expected job, a mechanical engineering graduate who borrowed SL mentions:

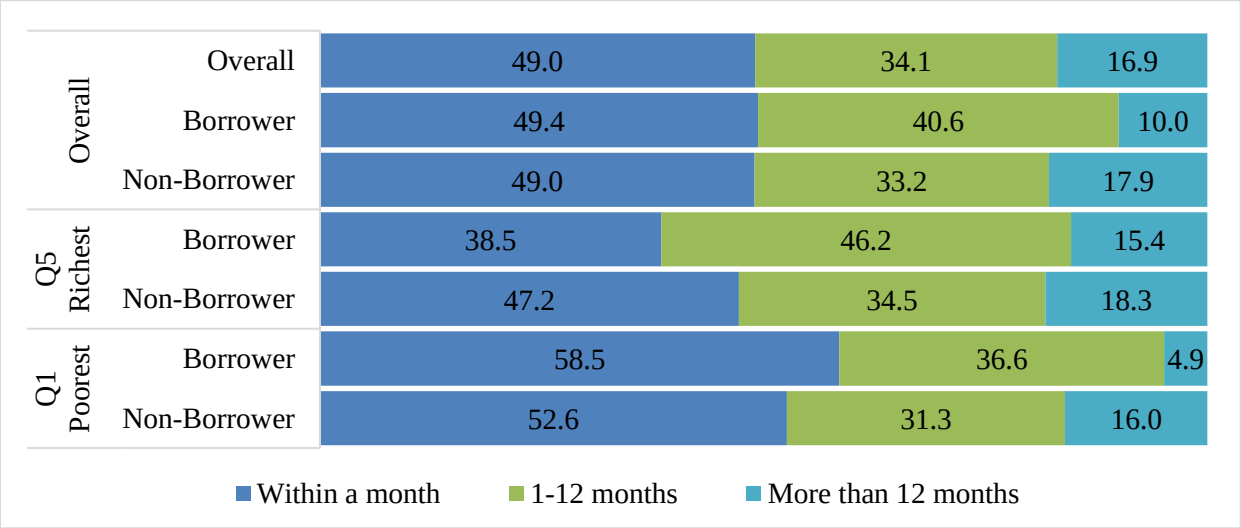
> *"Placement rate in our department is quite low. I am hoping that I will be able to secure a job in the labour market (outside campus placement). Recruiters in campus placement mostly seek interns and offer lower salaries. I expect to get a good salaried job within a month of completing this course. Otherwise, the loan repayment will become a problem for me and my family."* (Respondent 13)

Table 6.3: Share of Students who did not Secure Campus Placement & their Expected Salary

		% Share			*Expected Salary*		
		Non-Borrower	Borrower	Overall	Non-Borrower	Borrower	Overall
Gender	Female	69.64	80.00	71.53	9.10	7.67	8.88
	Male	82.76	59.05	78.79	9.80	10.98	9.93
Caste	ST	100	100	100	9.04	17.00	9.33
	SC	83.82	75.00	81.82	10.33	7.40	9.90
	OBC	83.43	60.47	78.90	9.34	9.55	9.37
	UC	78.93	61.19	76.24	9.70	11.26	9.87
Religion	Hindu	81.82	61.67	78.22	9.86	10.35	9.92
	Muslim	74.55	83.33	75.41	8.53	9.43	8.61
	Others	70.00	75.00	70.45	8.20	9.92	8.49
Income Quintile	Q1 (Poorest)	84.88	62.07	81.59	9.21	11.15	9.47
	Q5 (Richest)	77.14	44.44	70.45	10.23	8.40	10.02
Institution	Government	82.84	59.09	78.91	9.69	11.68	9.98
	Private	74.87	71.43	74.25	9.68	7.69	9.50
Course	Engineering	84.57	75.61	83.28	10.20	11.23	10.30
	Management	60.38	41.67	54.55	7.01	8.57	7.37
Marks	Less than 80%	83.64	73.33	82.11	8.72	9.25	8.80
	More than 80%	78.61	56.10	74.30	10.55	9.87	10.45
Total		80.40	63.10	77.50	9.68	10.28	9.76

Note: Private institutions include both aided and unaided.

Figure 6.4: Expected Job timings of Graduates who did not secure Campus Placement



Students without any job offers in campus placements are not only stressed about securing a job quickly after completing the course but also worried about the level of salary. Borrowers expect a high salary which is enough to repay the SL without affecting other important life choices such as buying a car, house, and getting married. Generally, a high debt burden limits borrowers' ability to take on new financial obligations. We note that the average expected annual salary of PHE graduates in Delhi is ₹9.76 lakh (see Table 6.3). This figure varied from ₹9.68 lakh to ₹10.28 lakh between non-borrowers and borrowers, respectively. The expected salary of SL borrowers was further high in case they were pursuing engineering courses (₹11.23 lakh), which can be attributed to the relatively higher total cost of engineering education in Delhi (as discussed in chapter 5). Similarly, borrowers belonging to low-income families expect a higher salary (₹11.15 lakh) than their rich counterparts. Borrowers described how monthly student loan payments might crowd out other spending and ultimately shape their life choices. Explaining her anxiety, a SL borrower shared:

> *"As a student loan borrower, I face immense pressure of securing a job and repaying the loan in time. Though my expectations from the job markets are very high in terms of salary, I might end up accepting a low-paying job to repay the loan. Forget about the personal expenses..."* (Respondent 3)

To sum up, a significant share of PHE graduates in Delhi secured campus placements. However, the job prospects of PHE graduates vary by different socioeconomic (gender, caste, religion, and family income) and institutional factors (type of institution, course and marks secured). More importantly, the decision to take student loans directly affects graduates' aspirations and expectations from the labour market. Borrowers are stressed and anxious about securing a high-salaried job through campus placements, without which they may face difficulties in future to repay the loan. This stress shapes their choice of fields and companies where they seek jobs. The descriptive analysis indicates that student loan take-up, apart from other socioeconomic and institutional settings of students, plays a critical role in securing jobs through campus placement in Delhi. In the next section, we use the Heckman selection model to analyse the potential determinants of employment and earnings of PHE graduates in Delhi.

6.3 Determinants of Employment Probabilities & Salary Offered to PHE Graduates

This section examines the determinant of employment probabilities and earnings of PHE graduates in Delhi using a Heckman selection model. The model takes status of *'campus placement'* and *'salary offered'* as dependent variables. The econometric specification of the Heckman model is discussed in Chapter 3 (p.72). While the summary statistics of the variables used for analysis are given in Table A6.1 in the appendix of this chapter, their notations are given in Table A3.2 in the appendix of Chapter 3 (p.75).

Explanatory Variables

Students' socioeconomic factors and academic background are generally believed to significantly impact their career prospects in the labour market. Those with strong academic credentials and from upper castes and classes are more likely to secure jobs and have more work opportunities. In light of this, we incorporate three factors relevant to academic background (type of institution, course and GPA) and three socioeconomic factors (gender, caste, family income, and part-time job).

Type of Institution: Employers usually prefer hiring graduates from government institutions than private institutions. This is because these two types of institutions differ in terms of quality and reputation, as per the NIRF rankings. It is argued that government institutions (offering professional courses such as engineering and management) provide better-quality education due to better-trained faculty and physical infrastructure. Therefore, graduates attending government institutions may have a greater probability of securing a job via campus recruitment than those attending private institutions.

Course: As noted in the introductory section, the employability of graduates in India varies significantly by course of study. For instance, due to the rapid growth of India's IT industry in recent years, it is reasonable to assume that graduates from IT-related engineering courses have a greater chance of securing a job in campus placements than other engineers or management graduates.

*Student Loan Borrowing: S*tudent loan borrowers are anticipated to have a higher likelihood of securing a job in campus placement than non-borrowers due to the pressure of loan repayment. They might be willing to accept any job after completing their course. We include this factor in the analysis to see the variations in employment probabilities between borrowers and non-borrowers.

GPA: Employers give much weightage to the grades secured by the student during the course. Thus, graduates with a higher GPA in their course work may have a greater likelihood of securing a job in campus placements than those securing lower grades. We include this factor in the analysis to see the variations in employment probabilities by the level of marks. We also examine how student loan status interacts with graduates' GPA to see whether grade points matter differently for borrowers and non-borrowers in employment probabilities.

Part-time Job: In the recruitment process, employers also take into consideration the work experience held by the students. Students with some work experience may be more likely to secure a campus placement than freshers, as employers might prefer them. Therefore, the work experience gained by graduates through part-time jobs is also considered as an explanatory variable in the present analysis.

Gender: The issue of gender discrimination in the labour market is evident in India and elsewhere. It is argued that employers often prefer male candidates over females in campus recruitment drives. They believe that males work for longer durations while females have family responsibilities. We include this factor to see how it determines the employment probability of PHE graduates in Delhi, especially in engineering – a male-dominated field.

Caste: Students' *caste* or *social group* is included in the analysis to examine whether or not employers have any preference for scheduled caste (SC), scheduled tribe (ST), or other backward classes (OBC) in the recruitment process. It is observed that private sector companies do not provide reservations to candidates belonging to these groups, which may increase the likelihood of securing jobs by the upper caste candidates.

Family Income: It is anticipated that the greater the student's family income, the greater the likelihood of the graduates securing a job. In addition to formal schooling, wealthy families can invest extra money in enhancing the academic skills of their offspring, such as English language proficiency, computer literacy, etcetera, which benefits them in the job selection process.

Results and Discussion

Estimates reveal that gender is not statistically significant in determining the likeliness of PHE graduates to secure a job through campus placement. However, it influences the level of salary offered to engineers. Male engineers are likely to get an offer of a 55.9% higher annual salary than their female counterparts (see Table 6.4). Studies examining the gender wage gap around the world have established that men are likely to receive higher salaries than their female counterparts (Altonji & Blank, 1999; Appleton *et al.*, 1999; Fafchamps *et al.*, 2009; Nordman & Wolff, 2009; Bertrand, 2011; Bhorat & Goga, 2013; Blau & Kahn, 2017; Ntuli & Kwenda, 2020). This implies that employers prefer offering more salaries to male engineers than to females. Why are employers reluctant to grant high salaries to female engineers? Is it because they perceive engineering as a masculine field? It would be interesting to examine employers' perspectives on this. This is, however, beyond the scope of this study.

Caste exerts a significant influence on employment probabilities and the salary offered to PHE graduates in campus placement. Compared to STs, SC candidates are 23.4% less likely to get a job offer which further declines to 23.9% less likeness in the case of engineers (see Table 6.4). In terms of salary, UC and OBC candidates secured 138% and 120% more salary than their ST counterparts. Such a caste gap in salary offered is found to be higher in the case of engineering graduates. Specifically, SC engineering candidates get 167% more salary than their ST counterparts, and the corresponding figure is 162% for UC candidates and 132% for OBC candidates.

Factors related to students' current education status (such as type of institution and course) and financial status (student loan and part-time job) are also important in determining their employment probabilities and earnings. Average marginal effect (AME) for *'institution type'*

variable reveals a negative association between enrolment in private institutions and students' likeness of securing a job through campus placement. However, the variable is not statistically significant. Why are students in private institutions less likely to secure jobs in campus placement? Is this a reflection on the quality of education in private institutions? Examining these questions in the context of PHE graduates in Delhi would give some interesting insights. However, this study does not explore this.

How do the employment probabilities and salary of PHE graduates differ across courses? Graduates from which courses (management and engineering) hold a better position in terms of job prospects? Results reveal that those pursuing MBA/PGDM courses are 19.4% more likely to secure a job through campus placements than their counterparts pursuing BTech courses (see Table 6.4). Why do employers prefer management graduates? Is it because they are pursuing a PG course, unlike their engineering counterparts? Interestingly, we note an opposite pattern regarding the salary offered to PHE graduates. Engineers are offered around 105% more salary than business graduates in Delhi.

As discussed in Chapter 5, the pressure of securing a job after studies becomes much more pronounced among borrowers than non-borrowers. These problems can translate into mental and emotional problems in the students as pressure to repay within a time limit is immense because there is hardly any flexibility regarding these rules. Given this, we find that borrowers have 7.8% more chances of securing a job through campus placements than their counterparts with no SL borrowings (see Table 6.4). Such tendency is slightly less in the case of students pursuing BTech, i.e., 6.7% more chance for borrowers securing a job. Why does a higher share of borrowers get jobs? Do borrowers agree to sign a long-duration bond with the employers (which positively affects the company's labour turnover rate)? Or is it that borrowers perform better in academics and non-academic activities? As discussed in chapter 5, while around 36.7% of the borrowers have secured more than 80% marks in the previous semester, this figure is more petite among non-borrowers (32.6%). Further, borrowers are relatively more engaged in non-academic activities such as sports competitions, annual functions, academic competitions, student unions, and college group picnics (see Chapter 5, p.163). According to them, these engagements are deemed necessary

to maintain a good image among their teachers and peers, get good internal grades and subsequently secure a campus placement. Clearly, their anticipation seems right in this case.

Table 6.4: Determinants of Campus Placement and Salary Offered: Heckman Selection Model

	Stage 1: Secured Campus Placement			*Stage 2: Salary Offered*		
	Overall (AME)	Engg (AME)	Mgt (AME)	Overall (Coeff)	Engg (Coeff)	Mgt (Coeff)
gender	.014	-.025	.115	.042	.559*	.116
	(.038)	(.044)	(.084)	(.240)	(.342)	(1.424)
caste (Ref. – ST)						
SC	-.234*	-.239*	-.033	1.155*	1.675**	-1.255
	(.124)	(.133)	(.361)	(.715)	(.839)	(1.798)
OBC	-.201*	-.195	-.200	1.203**	1.321*	-.827
	(.120)	(.130)	(.329)	(.631)	(.701)	(2.870)
UC	-.192*	-.196	-.118	1.380**	1.629**	-.769
	(.115)	(.130)	(.322)	(.617)	(.707)	(2.126)
lnfamily_income	.009	.013	-.030	.123*	.169*	-.037
	(.011)	(.011)	(.037)	(.077)	(.097)	(.393)
inst_type	-.018	-.033	.060	-.016	-.091	.440
	(.032)	(.035)	(.089)	(.220)	(.304)	(.814)
course	.194***	---	---	-1.049**	---	---
	(.036)			(.503)		
student_loan	.078**	.067*	.126	-.107	.034	.397
	(.036)	(.041)	(.091)	(.282)	(.363)	(1.491)
part_time_job	.108***	.092***	.211**	-.427	-.288	.266
	(.031)	(.031)	(.105)	(.290)	(.327)	(2.562)
marks_prev_sem	.080***	.054*	.230***	-.240	-.232	1.081
	(.030)	(.031)	(.091)	(.259)	(.289)	(2.734)
aftercourse_plan	.120***	.096***	.000*	---	---	---
	(.040)	(.037)	(.000)			
Mills Ratio/Lamda	-1.449**	-1.325*	-.191*	---	---	---
	(.719)	(.828)	(.072)			
Constant	---	---	---	12.673***	11.135***	12.121***
				(1.648)	(2.035)	(3.932)
Prob > Chi^2	0.071	0.062	0.079	---	---	---
Observations	717	582	129	717	582	129

Notes: Robust standard errors in parentheses; ***p<0.01, **p<0.05, and *p<0.1
AME=Average Marginal Effect

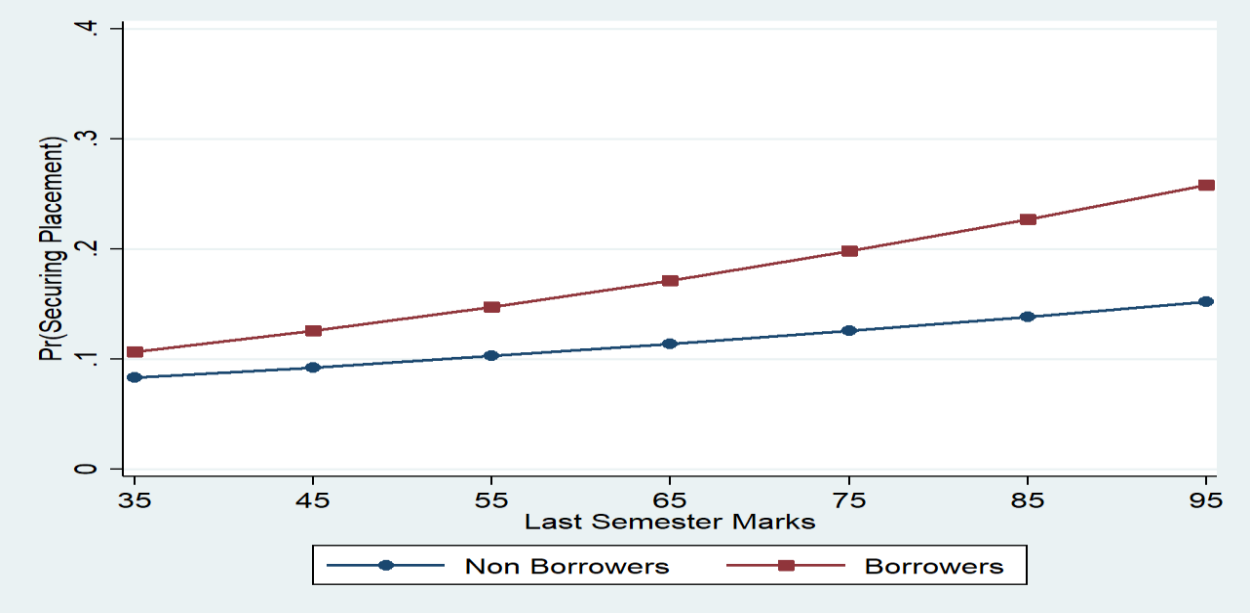
Do prior part-time work engagements affect employers' decision to offer a job to graduates? In the present survey, around 21.3% of the respondents reported their engagement in part-time jobs. Regression estimates reveal that students engaged in part-time jobs are 10.8% more likely to get a job offer in campus recruitment drives (see Table 6.4). Such likeness is higher among those pursuing MB/PGDM courses (21.1% higher chances of securing a job) than those attending BTech courses (9.2% higher). This contradicts the argument of Gayardon *et al.* (2019) that working part-time may adversely affect students' HE experiences and subsequent labour market outcomes (p.969). Perhaps, the duration of part-time jobs is perceived as job experience by employers, which might strengthen students' candidature for the job. Hence, results imply employers' preference for experienced candidates.

It appears that recruiters consider graduates' academic performance while selecting them to offer jobs. Those securing more than 80% marks in the last semester have 8% more chances of securing a job in campus placements (see Table 6.4). Such likeness is higher among those pursuing MB/PGDM courses (23% more chance of securing a job than those securing less than 80%) than those attending BTech courses (5.4% higher chances). This implies that marks hold greater significance to employers while offering jobs to management graduates. Though academic performance significantly affects the employment prospects of PHE graduates in Delhi, its impact on graduates' salary levels is found statistically insignificant.

How does the effect of student loan take-up on employment probabilities of graduates vary by marks secured in the last semester and family income? Comparing employment probabilities based on students' marks might aid in a better understanding of the weightage given by employers to academic performance in the recruitment process. Therefore, we incorporate an additional interaction term between marks secured by the student in the last semester and student loan take-up. After adjusting for all other control variables in the model, post-estimation predicted probabilities for both interaction effects were computed, and the results are presented in Figure 6.5. The interaction effect reveals that the gap between the employment probabilities of borrowers and non-borrowers is negligible among students who secured third division, which tends to increase with an upward shift in the marks and gradually becomes considerable among those who secured more than 90% marks (see Figure 6.5). The marginal effect is noted to be higher for

borrowers than non-borrowers with the increase in marks secured, as the curve for borrowers has a steeper slope. Thus, it appears that employers give significant weightage to the academic performance of the graduates, especially while selecting a candidate with SL debt.

Figure 6.5: Probabilities of Securing Campus Placement by Marks and Loan Status



To sum, institutional and financial status factors are statistically significant in determining the employment probabilities and earnings of PHE graduates in Delhi. Employers seriously consider factors like course, student loan take-up, part-time jobs and marks secured in the previous semester before deciding whether to offer a job to the student and how much salary to offer. Examining employers' perspectives regarding these factors would have given some interesting insights, but it was not covered in the present survey. Still, some important labour market aspects of PHE graduates are examined using the current survey data.

6.4 Expected Ripple Effect of Student Loan Take-up among PHE Graduates

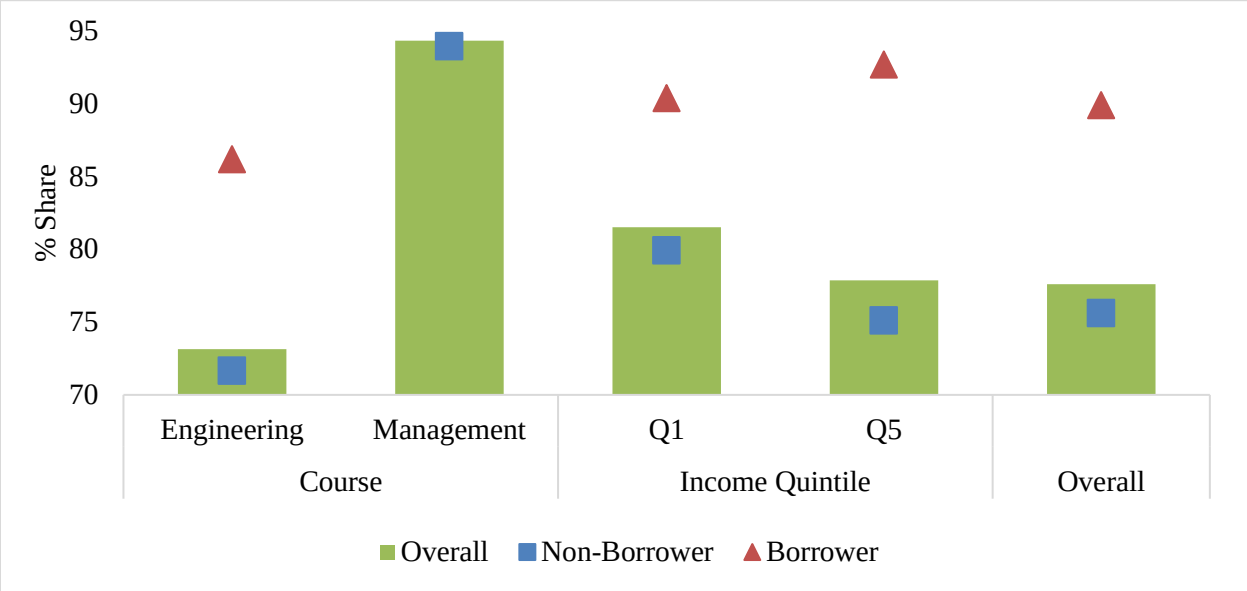
In this section, we attempt to understand the avenues through which student loan debt affects borrowers' behaviour and life choices in the long run. The available literature in this area suggests that SL debt restricts borrowers' choice of jobs and occupation (Purcell & Elias, 2010; Purcell *et al.*, 2012) and prevent them from taking the financial risks necessary to start a business (Ambrose, Cordell, & Ma, 2015; Checovich & Allison, 2016; Krishnan & Wang, 2019), owning

a house (Luong, 2010; Cooper & Wang, 2014; Gale *et al.*, 2014; Elliott & Lewis, 2015), purchasing a car (Baum & O'Malley, 2003; Brown & Caldwell, 2013), the decision to get married (Gicheva, 2011; Addo, 2014; Bozick & Estacion, 2014; Sieg & Wang, 2018), wealth accumulation (Luong, 2010; Hiltonsmith, 2013; Elliott & Nam, 2013; Cooper & Wang, 2014; Fry, 2014; Zhan *et al.*, 2016) and is related to mental health problems (Fitch *et al.*, 2011; Richardson *et al.* 2013). For instance, 14% to 21% of borrowers in the US reported that their SL debt delayed their time of getting married (Stone *et al.*, 2012; American Student Assistance, 2015; EdAssist, 2016). Similarly, around 38% to 71% of SL borrowers in the US feel a delay in buying a house because of their debt (American Student Assistance, 2015; EdAssist, 2016).

Though we find many studies examining the impact of SL debt on the life choices of borrowers, hardly any study could be found that unfolds these issues in the Indian context. Therefore, in addition to providing a clear understanding of the literature gap in the Indian context, this section provides strong evidence that SL debt has the capacity to disrupt much more than an individual's financial situation, which can be termed as the *'expected ripple effect'* of student loans. We proceed by examining how SL debt and its repayment impact borrowers' life choices. We focus on a few major life events after completing the course: further studies vis-à-vis job, career choices, homeownership, buying a car, marriage, and financial contribution to family.

In the present survey, more than 3/4th of graduates reported that they plan to enter the job market after completing their current course. However, taking student loans directly affects graduates' after-course plans, including taking a gap year, starting a business, going for higher studies, and taking up a regular paying job. Results reveal that most borrowers face a dearth of choices after completing their course and plan to take a regular paying job. Specifically, relatively more borrowers (89.9%) plan to work after finishing their current course than their non-borrower counterparts, i.e., 75.6% (see Figure 6.6). This pattern of borrowers' preference toward jobs holds true irrespective of course and income quintile. The reason behind pursuing a job is to repay their debt and get debt-free as soon as possible. A similar finding was put by Asher (2009), stating that borrowers tend to be more focused on securing a job rather than opting for further studies or starting a business due to urgency in repayment. The same is also explained by social stress theory which addresses the financial burden associated with loan take-up (Pearlin, 1999).

Figure 6.6: Share of Graduates planning to go for a job after completing the course



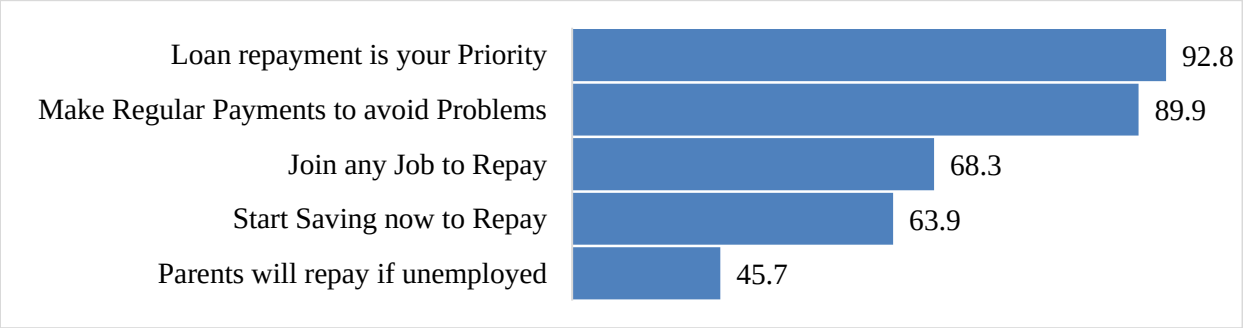
We find that a higher share of borrowers plans to go for a job irrespective of their family's economic status (see Figure 6.6). This constrained choice might be an outcome of the repayment clause and the end of the moratorium period. In the detailed interviews, it came to notice that borrowers wish to start paying their debt before the moratorium period and face stress to secure a job. A borrower sharing his anxiety mentioned:

> *"It is critical for me to secure a job through campus placement. Otherwise, my family will be disappointed and will face loan repayment stress. I cannot afford to miss the loan instalments as it might negatively affect the credit rating of my family and me. The sooner I get a job, the sooner I will start repaying the loan and be debt-free. This constantly weighs on my mind, day and night..."* (Respondent 1)

These experiences imply that the stress regarding securing a job is relatively high among SL borrowers. Repayment burden is a major factor of stress and anxiety amongst the borrowers. Around 92.8% of the borrowers cited that loan repayment is on their priority list, and 89.9% mentioned that they would make regular payments to avoid future problems (see Figure 6.7). This priority compels them to take up a job and repay the loan, making them forgo their explorations of other opportunities due to the fear of unemployment or rejection. Citing her stress regarding loan repayment, a SL borrower stated the following:

"I feel like student loan repayment might limit me from exploring career opportunities other than a salaried job. I am bound to take a job quickly after completing the current course to repay loan and might not have a chance to explore more in terms of business opportunities and further studies." (Respondent 4)

Figure 6.7: Intention Towards Loan Repayment



This experience reveals that borrowers cut down their chances of career explorations and look for a job to start repaying the loan as soon as possible. A major factor behind this decision is the moratorium period of student loans in India, which is course duration plus one year. Students are required to start repaying their debt after this period. Due to this, a substantial share of borrowers in the present survey, i.e., 68.3%, is even open to accepting any job offer that comes along their way if they cannot secure a job as per their expectations (see Figure 6.7). In this regard, a borrower on the verge of completing his course mentioned an interesting point:

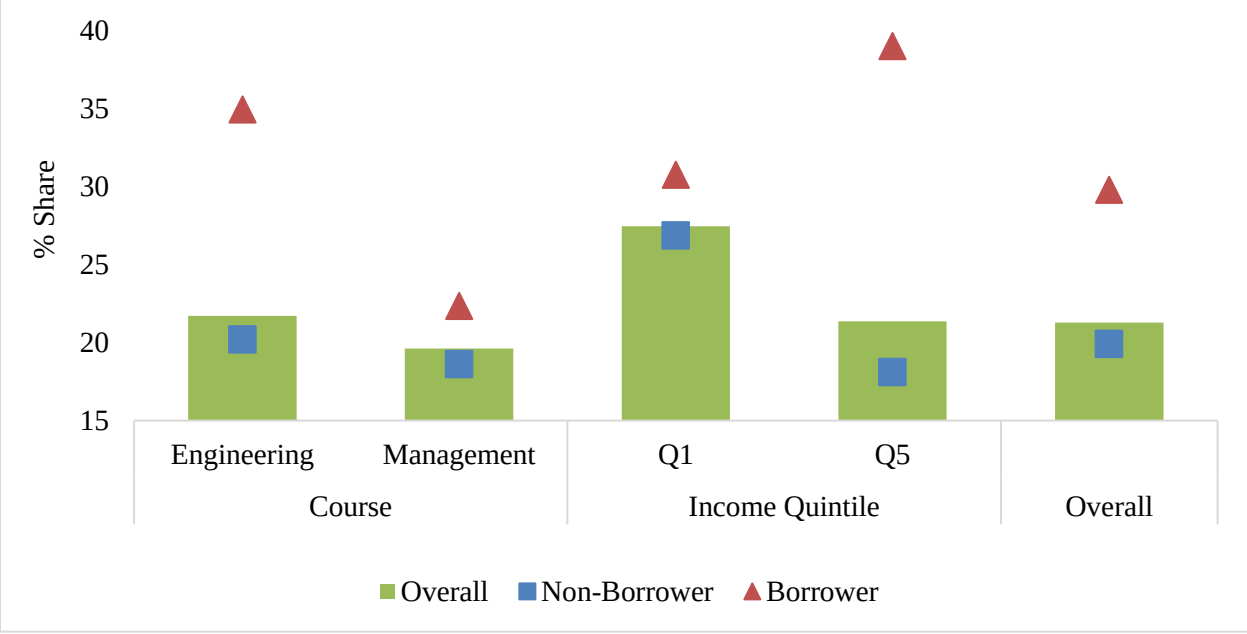
"Once the student loan was granted, I was not stressed about tuition fee payments and other educational expenses. However, one of my friends felt this stress who did not take a student loan and financed her education based on her family resources. However, after completing the course, I would be stressed about securing a job and loan repayment while my friend with no such debt would not be much stressed in this regard." (Respondent 15)

This depicts a clear demarcation between the two groups of students (borrowers and non-borrowers) at two different times. Borrowers experience constrained choices when it comes to jobs after completing their studies. Most of them cannot afford to wait for an opportunity or to explore the job market properly because of the repayment burden. They mentioned that the labour market

is ‘volatile’, especially after the Covid-19 pandemic, and they are constantly anxious about whether they will get another opportunity or not. This is one of the major reasons they put up with any opportunity in their hand.

To cope with the repayment burden, around 63.9% of the SL borrowers plan to start saving money for repayment while pursuing the course (see Figure 6.7). For this, several of them search for a part-time job whilst studying. Around 21.3% of the respondents reported their engagement in part-time jobs and internships. This figure is considerably higher among borrowers (29.8%) than those with no such debt, i.e., 19.9% (see Figure 6.8). Though borrowers are more into part-time engagements irrespective of their course and family economic status, their tendency to do part-time jobs is higher if they are from engineering courses. While 35% of the borrowers in engineering courses were doing part-time jobs, only 22.4% of their counterparts in management courses were engaged in them. This might be because the total cost of engineering education in Delhi is quite high compared to MBA/PGDM, as discussed in Chapter 5 (p.88). Therefore, the cost of education is positively associated with engagement in part-time jobs.

Figure 6.8: Share of Graduates Engaged in Part-time Jobs



In interviews, it came to notice that borrowers do not want to increase their financial burden, create further problems due to non-repayment, or engage in unnecessary expenses.

Therefore, they plan their finances in advance and look for secondary engagements to earn and start saving. In this regard, a non-borrower final year engineering graduate mentioned:

> *"During my BTech course, I observed that SL borrowers do not incur unnecessary expenses on education and related items. They take part-time jobs and internships as a strategy to maintain their current academic and non-academic expenses and save for loan repayment in future. On the other hand, their non-borrower counterparts engage less in these part-time engagements."* (Respondent 26)

Not only repayment burden but peer pressure among students to dress up in a certain way and buy certain items also increases the chances of students opting for part-time jobs. A final-year borrower explains his reason for doing a part-time job by saying:

> *"Since the second year of my BTech course, I started giving home tuitions to school children to cover my educational and other expenditures. I felt left out in my college friend group regarding dressing and accessories. I did not want to make a bad image in from of them."* (Respondent 19)

Further, around 45.7% of the SL borrowers mentioned that their parents would repay the debt if they could not secure a job and repay themselves (see Figure 6.7). This depicts that the pressure of securing a job after studies is not limited to the students. Families of SL borrowers are also worried about their child's job prospects and loan repayment. While sharing his anxiety about loan repayment, a borrower mentioned that:

> *"As a student loan borrower, I feel that not only me but my parents are also worried about my future job prospects and earnings. If I could not secure a good-paying job (either through campus placement or the open labour market), the loan repayment would become a burden on my parents. Uncertainty of jobs and underemployment is a serious concern for my family and me, especially after the Covid-19 pandemic."* (Respondent 12)

A high college loan debt leaves students with insurmountable payments and prevents them from starting a family, buying a home, or saving for retirement (Wermuth, 2017). Some of the major life choices that are affected by student loan debt are choosing a job, homeownership, buying

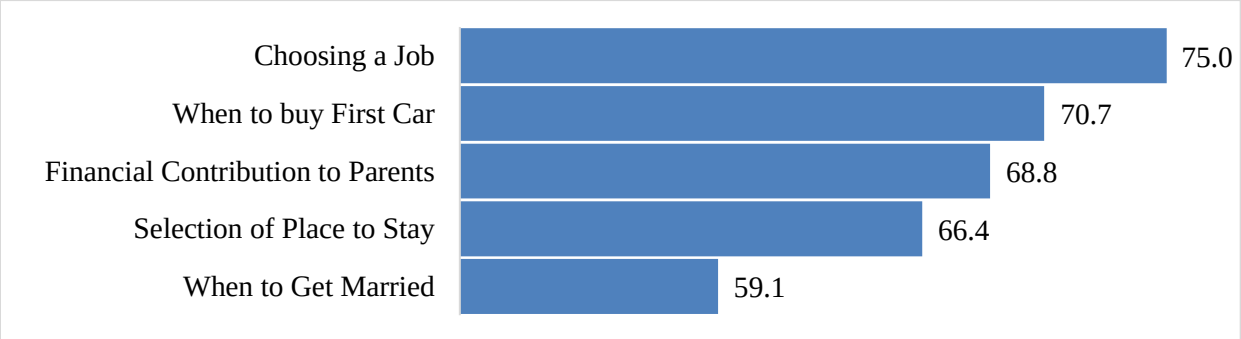
a car, marriage, and financial contribution to family (Purcell & Elias, 2010; Purcell *et al.*, 2012; Cooper & Wang, 2014; Gale *et al.*, 2014; Elliott & Lewis, 2015; Bozick & Estacion, 2014; Sieg & Wang, 2018). In the current survey, around 3/4th of the borrowers feel that SL debt will affect their choice of jobs (see Figure 6.9). As discussed in section 6.2, most borrowers make informed decisions regarding the choice of companies and the field of jobs during campus placements. Further, SL debt even compels the borrowers to take any job to repay (see Figure 6.7). Further, around 68.8% of them feel that this indebtedness will also affect their financial contribution to family. Securing a low-salary package in campus placement, a borrower from a low-income household mentioned:

> *"I want to financially support my family after my studies, but I am not sure whether I will be left with enough money from my salary after accounting for the loan EMI"* (Respondent 2).

Similarly, a SL borrower pursuing an engineering course shared:

> *"I want to support my family financially after completing this course. But my financial contribution might get affected as a substantial share of my future income would go towards student loan repayment. Also, given the present labour market situation, securing a high-salaried job is challenging for me, which might also affect my loan repayment and financial support to my family."* (Respondent 8)

Figure 6.9: Effect of Student Loan Take-up on Life Choices



Opinions of borrowers suggest that a substantial portion of their salary would go towards loan repayment, which might negatively affect their savings, financial contribution to family, and other major financial decisions. Results reveal that borrowers feel their loan debt will negatively

affect their decision to buy a car (cited by 70.7% of borrowers) and a house, i.e., cited by 66% of borrowers (see Figure 6.9). Students mentioned that while they are *debt-ridden*, neither they fathom purchasing *'liabilities'* like cars or two-wheelers nor costly *'assets'* like gold and diamonds. Also, they are risk-averse when it comes to investing their money in the stock market. These findings go in line with the literature establishing a negative relationship between SL debt and ownership of a car, house, and wealth accumulation (Baum & O'Malley, 2003; Luong, 2010; Hiltonsmith, 2013; Brown & Caldwell, 2013; Elliott & Nam, 2013; Cooper & Wang, 2014; Gale *et al.*, 2014; Fry, 2014; Elliott & Lewis, 2015; Zhan *et al.*, 2016). In the United States, various surveys have concluded that around 38% to 71% of SL borrowers feel a delay in buying a house because of their debt (Stone *et al.*, 2012; American Student Assistance, 2015; EdAssist, 2016).

Further, around 59% of the borrowers cited that loan indebtedness will also negatively affect their decision regarding when to get married (see Figure 6.9). This is consonant with the findings of various studies that found a relationship between debt and marriage (Gicheva, 2011; Addo, 2014; Bozick & Estacion, 2014; Sieg & Wang, 2018). The relationship is either exclusive to women or much greater among women than males. However, in the present survey, we find that more males (63%) feel their marriage will be affected by their debt compared to their female counterparts (42.5%). This implies that debt has a distinct effect on men's and women's marriage choices among PHE graduates in Delhi.

6.5 Summary of Findings

Using the primary survey data (collected through student survey and interviews), this chapter examined: (a) labour market expectations or outcomes of PHE graduates with a focus on comparing borrowers and non-borrowers, (b) determinants of employment and earnings of PHE graduates, and (c) opinions and experiences of graduates regarding the labour market along with the expected ripple effect of SL borrowings on their life choices. The major findings of the chapter are as follows:

- Around 22.5% of final-year PHE graduates secured jobs through campus placement drives. While around 36.9% of the student loan borrowers secured jobs, only about 19.6% of their counterparts with no such debt got job offers. Regression estimates also confirm that borrowers

have 7.8% more chances of securing a job through campus placements than their counterparts with no SL borrowings. Further, the average annual salary offered to PHE graduates in campus placements was ₹7.55 lakh, ranging from ₹7.13 lakh to ₹8.65 lakh between non-borrowers and borrowers, respectively.

- Placement rate is significantly higher among final-year students pursuing management courses (45.5%) than their counterparts in BTech courses (only 16.7% placement rate). Regression results also indicate that those pursuing MBA/PGDM courses are 19.4% more likely to secure a job through campus placements than their counterparts pursuing BTech courses. An interaction of course and student loan take-up indicates that placement rate among borrowers in MBA/PGDM (58.3%) is much higher than engineers who borrowed SL, i.e., 24.4%. On the other hand, we note an opposite pattern regarding salary offered, wherein engineers are offered 105% more salary than business graduates in Delhi.

- There exists a gap in placement rates and salary offered based on the student's socioeconomic factors (gender, caste, religion, and family income) and institutional settings (institution, marks secured in the previous semester, and part-time job). For instance, the placement rate was slightly higher in private institutions. Of the total final year graduates in government institutions, 21.1% secured a job in campus recruitment drives, and this figure was 25.8% in private institutions. However, while looking at the borrowers, the placement rate was quite high among borrowers attending government institutions (40.9% placement rate) than their counterparts in private ones (28.6%).

- Results reveal that most SL borrowers face a dearth of career choices after completing their course and plan to take a regular paying job. A higher share of borrowers (89.9%) plan to work after finishing their current course than their non-borrower counterparts, i.e., 75.6%. Some of the major life choices that borrowers expect to be affected by their borrowings are further studies, career choice, buying a car, time of getting married, homeownership and financial contribution to the family. Their opinions suggest that a substantial portion of their salary would go towards loan repayment, which might negatively affect their savings and other major financial decisions.

Appendix to Chapter 6

Table A6.1: Summary statistics of the variables used in the Analysis

Variable	NOB	Mean	SD	Min	Max
Dependent Variables					
lnSalary_offered	172	13.188	0.916	10.820	15.068
placement	764	0.225	0.418	0	1
Independent Variables					
gender	764	0.821	0.384	0	1
caste	764	3.421	0.775	1	4
lnfamily_income	764	13.533	1.305	10.491	16.300
inst_type	764	0.305	0.461	0	1
course	764	0.202	0.401	0	1
student_loan	764	0.170	0.376	0	1
part_time_job	764	0.270	0.444	0	1
marks_ prev_sem	717	0.298	0.458	0	1
Instrumental Variables					
aftercourse_plan	764	0.787	0.410	0	1

NOB=Number of Observations; SD=Standard Deviation

CHAPTER 7
SUMMARY AND CONCLUSIONS

This study has examined the loan financing of professional higher education (PHE) in Delhi. Besides mapping the growth of student loans (SLs) market in India, it examined the socioeconomic inequalities in access to SLs among PHE graduates in Delhi. It also explored students' opinions and experiences regarding loan financing of their education to understand the complexities of SLs market. Besides these, it has also analysed a few other important interrelated aspects like patterns and determinants of household spending and labour markets aspects of PHE graduates, focusing on comparing SL borrowers and non-borrowers. This concluding chapter proceeds as follows: the context and rationale for the study are discussed in section 7.1. Section 7.2 highlights the objectives, research questions and research design. A summary of the major findings of the study is given in section 7.3. The limitations of the study and the scope for future research are discussed in section 7.4.

7.1 Context and Rationale of the Study

The private-led expansion of higher education (HE) has significantly changed India's education financing policies. It has led to higher cost recovery from students through higher tuition and other fees. This policy suggestion comes with the larger understanding that HE is no more a public good as students accessing higher education obtain more private returns and, therefore, should share the costs. These viewpoints are also taken as the major explanations behind the argument for declining public subsidies on HE and shifting the burden from the government to households by asking them to pay for it. The increasing private funding of HE in India, coupled with rising costs, and limited public funding, has burdened the households with accessing HE, especially the costly courses such as engineering and management. Students from lower and

middle-class families aspiring to access these expensive courses aim to get financial support through student loans from commercial banks.

Student loans are popularised as a potential alternative to funding higher education in many countries, including India. Financing through student loans is considered as an important method of cost-sharing (between recipient and supplier of education) and cost-shifting (from parents to students) in higher education. In India, several recent policy initiatives (including the announcements in the union budgets) consider student loans as an alternative to costly HE, particularly in accessing technical education. In this context, it is important to examine the present-day student loan market in India that would contribute to evidence-based policies in financing HE. However, the literature reviewed in Chapter 2 shows that HE researchers in India have paid little attention to student loans. A few available studies in this domain have largely discussed the overall growth of student loan market (in terms of number of loan accounts and amount outstanding) and major strengths/weaknesses of the scheme, leaving very few studies on costly disciplines like engineering and management. Further, works unfolding the complexities students face in the ground while accessing student loans, particularly those who belong to socially and economically backward groups, are absent in the literature. In this context, this study examined the student loan market for professional higher education graduates in Delhi.

7.2 Objectives and Research Design

Following were the three specific objectives of the study:

1. To examine the pattern of household spending on professional higher education in Delhi and how it varies with socioeconomic and institutional settings of the student. This objective explored the inequalities and determinants of household spending on professional higher education along with its association with student loan borrowings.

2. To map the growth of student loans market in India and examine its access among professional higher education graduates in Delhi. This objective explored the expansion and regional spread of the student loan market in India during the last one and a half decades. Further, it analysed

who all access student loans in Delhi and the major difficulties graduates faced while accessing these loans. It also explored the linkage between accessing education loans and students' participation in co-curricular activities.

3. To understand the labour market outcomes of students pursuing professional higher education in Delhi and how access to student loans intervein in this. This objective examined the employment probabilities (or expectations) and earnings (or expected earnings) of students pursuing professional higher education and compared student loan borrowers and non-borrowers. It also studied the expected ripple effect of student loan debt on the life choices of borrowers.

Data & Method

This study used both primary and secondary data. Three major secondary data sources used in the analysis include data and reports from the *National Statistical Office* (NSO), *Ministry of Education* (MoE) and *Reserve Bank of India* (RBI). We used unit-level data from the latest 75th round of NSO (2020) to examine the various sources through which university or college students in India finance their education. Further, *Reserve Bank of India* (RBI) data from *Statistical Tables relating to Banks in India* was used to map the growth of student loan market in India during the last one and a half decades. To link the growth of student loans with HE expansion in India, we supplemented the analysis with information from *All India Survey of Higher Education* (AISHE) reports and *Statistics of Higher & Technical Education*, provided by MoE, Government of India.

The major analysis of this study was based on the primary data collected through a survey of students pursuing three professional courses in Delhi, i.e., Bachelor of Technology (BTech), Master of Business Administration (MBA) and Post Graduate Diploma in Management (PGDM). The survey was conducted from January to August 2021. It covered 18 professional higher education institutions, wherein 1,508 students were surveyed in three different types of institutions (central government, state government and private-unaided) across different disciplines/branches of study. In addition to the student survey, interviews of 30 students were conducted to substantiate

the quantitative findings from the student survey. A student questionnaire and an interview schedule were used for data collection (see appendix of the thesis for details).

The data was processed using STATA-14 software. We used descriptive statistics and econometric models for the analysis. Descriptive statistics helped examine the pattern of socioeconomic inequalities in household spending on education, student loan access and labour market outcomes of PHE graduates. Further, econometric models were used to analyse the determinants of household spending, student loan access, employment, and earnings of PHE graduates. A brief explanation of the econometric methods used in the study is given below:

Ordinary Least Square (OLS) Regression Model: This model was used to examine the potential determinants of household expenditure on PHE in Delhi, as the dependent variable was continuous in nature. Importantly, we analysed the effect of student loan take-up on household spending on PHE. To examine the heterogeneity in PHE spending, we estimated separate regression equations by institution type (government and private) and course, i.e., engineering and management. Additionally, this model was used to examine the determinants of the student loan amount sanctioned by commercial banks to the applicants. To check the robustness of the results, we run a *stepwise OLS regression* and *heteroscedasticity-consistent OLS regression*.

Logit Regression Model: This model was used to examine the potential determinants of access/demand for student loans among PHE students in Delhi, as the dependent variable was dichotomous in nature. Separate logit equations were estimated for government and private institutions to understand the heterogeneity in demand for student loans in these institutions. Further, we also estimated *Probit regression equations* to check the robustness of logit regression results.

Heckman Selection Model: This model was used to examine the determinants of decisions which involve two steps. First, we used this model to estimate the determinants of demand (stage 1) and cost (stage 2) of pre-admission coaching among PHE students in Delhi. Second, we studied the determinants of the employment probabilities (stage 1) and earnings (stage 2) of PHE

graduates. Particularly, the effect of student loan take-up on employment probabilities was examined.

7.3 Major Findings of the Study

Household Expenditure on Professional Higher Education in Delhi

Chapter 4 provided an empirical account of (a) socioeconomic and institutional inequalities in household expenditure on professional higher education in Delhi along with its determinants, (b) the pattern of financial assistance received by PHE graduates, and (c) demand and household spending on pre-admission coaching. Major findings of the chapter are as follows:

- The per-student annual household spending on PHE in Delhi is around ₹3 lakh. Of the total spending, ₹1.61 lakh is incurred on fees (admission fee, tuition fee, exam fee, library fee and other fees) and ₹1.54 lakh on non-fee items such as expenditure on food, accommodation, textbooks, stationery, transport, private tuition, mobile, internet and others. Households spend around 16.2% of their annual family income per child to access PHE.

- Family spending on PHE varies widely by type of institution. Annual per-student spending was reported to be ₹2.76 lakh for students attending government institutions and ₹3.29 lakh for those enrolled in private institutions – marking a significant difference. OLS estimates confirm that students enrolled in private institutions spent around 21.6% more on their education than students studying in government institutions.

- Household spending on PHE varies widely by students' socioeconomic factors. A pro-male bias in spending is noted for MBA/PGDM students, whereas female students spend more on engineering education. Further, UC students incur the highest expenditure (₹3.19 lakh), followed by OBCs (₹2.73 lakh), and as expected, SCs and STs spent the lowest, i.e., ₹2.54 lakh and ₹2.32 lakh, respectively. OLS estimates reveal that a unit increase in family income increases household spending on PHE by 3.4%. Likewise, education expenditure tends to

increase with the levels of father's education. With an increase in each year of father's education, household spending on PHE in Delhi increases by around one per cent.

- While scholarships worked as a substitute for household spending on PHE in Delhi, availing a student loan complements it. Students receiving scholarships spend 12.6% less on PHE than students who did not receive it. On the other hand, SL borrowers spend 48.6% more on education than their non-borrower counterparts.

- About 43.3% of the students took pre-admission coaching for an average of 15 months to prepare for entrance exams for admission in the present course. Per-student total amount spent on coaching was ₹135 thousand, which accounts for around 7.3% of their annual family income and 45% of their annual education spending in the current course. Not only more share of engineering students (44%) took PAC than management students (40.8%), but they also spent a significantly higher amount on it than their counterparts, i.e., a total of ₹156 thousand against ₹48 thousand. Gender, caste and family income are statistically significant in determining the access and household spending on PAC. Being a male or belonging to upper caste or wealthy families not only increases the chances of attending coaching but also increases the tendency to spend more on it.

Loan Financing of Professional Higher Education in Delhi

Chapter 5 gave a critical descriptive and empirical account of the growth of the student loans market in India and the socioeconomic and institutional inequalities in access to SLs among PHE students in Delhi. It also examined students' experiences of loan financing of their education. The major findings of the chapter are as follows:

- Student loans market in India has experienced substantial growth in terms of number of accounts and amount sanctioned during the last one and a half decades. Number of SL accounts tremendously rose from 4.9 lakh in 2004-05 to 19.4 lakh in 2020-21, registering an increase of about four times during the period. Keeping pace with accounts, the outstanding loan amount marked a significant increase of about nine times during the same period, i.e., from ₹6,694

crore to ₹61,213 crores. We find substantial regional variations in the growth of SL market in India. Southern region, with 21% of India's total population, alone has about 60% of total SL accounts, followed by Western region holding around 11% share. In contrast, ten states and two UTs from eastern and northern regions, accounting for 45.3% of country's population, hold only about 18% corresponding share.

- In Delhi, the primary survey finds that 19.1% of students applied for student loans and nearly three-fourths of them were granted loans (72.2 %). Therefore, around 13.8% of total PHE graduates in Delhi finance their education through student loans granted by commercial banks and substantial share finances through other sources such as family/relatives/friends (66.5%), scholarships (11.7%), part-time jobs (2.1%), other loans and borrowings (2.4%) and other sources (3.5%). Still, a significant share of graduates relies on student loans to finance PHE in Delhi, which is more than two-fold the national average share of 5.2%.

- We find a massive gap in access to SLs among PHE students in Delhi by type of institution. While around 22.2% of the students attending government institutions applied for SLs, this figure is only 15.3% for those studying in private colleges. Logit results also indicate that students from private institutions are 3.8% less likely to apply for SLs than those from government institutions. On the other hand, commercial banks granted SLs to a higher share of applicants from government institutions than private ones. While more than 3/4th of loan applicants from government institutes were granted loans, only 65.4% of SL applications were accepted from private institutes. Moreover, successful applicants from government institutions were granted a higher amount by banks (₹7.31 lakh) than that sanctioned to applicants from private institutions, i.e., ₹6.77 lakh.

- The share of management students applying for SLs is about double that of engineering students, i.e., 31.3% compared to 15.9%. Logit estimates also indicate that management students are 21% more likely to apply for SLs than engineering students. Further, banks grant SLs to a higher share of management students (85.9%) than engineering graduates (65.6%). Also, successful applicants pursuing MBA/PGDM courses were sanctioned a higher loan amount (₹8.15 lakh) than those attending BTech courses, i.e., ₹6.43 lakh.

- Students' opinions and experiences regarding access to SLs reveal several problems at different stages. They face multiple problems due to the complex application procedure. While granting loans, most of them face discrimination from banks based on their socioeconomic and institutional settings. Further, after the loan is sanctioned, borrowers face additional problems such as stress regarding academic performance, securing a job and loan repayment. A blend of academic, co-curricular activities, family burden, and banks' conditions often push the borrowers towards a situation of constant anxiety and stress.

Student Loans & Labour Market Expectations of PHE Graduates in Delhi

Chapter 6 examined: (a) labour market expectations or outcomes of PHE graduates with a focus on comparing borrowers and non-borrowers, (b) determinants of employment and earnings of PHE Graduates, and (c) opinions and experiences of graduates regarding the labour market along with the expected ripple effect of SL borrowings on their life choices. The major findings of the chapter are as follows:

- Around 22.5% of final-year PHE graduates secured jobs through campus placement drives. While around 36.9% of the student loan borrowers secured jobs, only about 19.6% of their counterparts with no such debt got job offers. Regression estimates also confirm that borrowers have 7.8% more chances of securing a job through campus placements than their counterparts with no SL borrowings. Further, the average annual salary offered to PHE graduates in campus placements was ₹7.55 lakh, ranging from ₹7.13 lakh to ₹8.65 lakh between non-borrowers and borrowers, respectively.

- Placement rate is significantly higher among final-year students pursuing management courses (45.5%) than their counterparts in BTech courses (only 16.7% placement rate). Regression results also indicate that those pursuing MBA/PGDM courses are 19.4% more likely to secure a job through campus placements than their counterparts pursuing BTech courses. An interaction of course and student loan take-up indicates that placement rate among borrowers in MBA/PGDM (58.3%) is much higher than engineers who borrowed SL, i.e., 24.4%. On the

other hand, we note an opposite pattern regarding salary offered, wherein engineers are offered 105% more salary than business graduates in Delhi.

- There exists a gap in placement rates and salary offered based on the student's socioeconomic factors (gender, caste, religion, and family income) and institutional settings (institution, marks secured in the previous semester, and part-time job). For instance, the placement rate was slightly higher in private institutions. Of the total final year graduates in government institutions, 21.1% secured a job in campus recruitment drives, and this figure was 25.8% in private institutions. However, while looking at the borrowers, the placement rate was quite high among borrowers attending government institutions (40.9% placement rate) than their counterparts in private ones (28.6%).

- Results reveal that most SL borrowers face a dearth of career choices after completing their course and plan to take a regular paying job. A higher share of borrowers (89.9%) plan to work after finishing their current course than their non-borrower counterparts, i.e., 75.6%. Some of the major life choices that borrowers expect to be affected by their borrowings are further studies, career choice, buying a car, time of getting married, homeownership and financial contribution to the family. Their opinions suggest that a substantial portion of their salary would go towards loan repayment, which might negatively affect their savings and other major financial decisions.

7.4 **Limitations of the Study and Scope for Future Research**

There are some limitations to the current study. First, it only explored students' perspectives on student loans in India, ignoring the bankers' perspectives on the same. Though the study has examined the socioeconomic gaps in the share of students granted loans by commercial banks (with the loan amount), interactions with a few bank personnel might have given a clear picture of banks' practices while selecting SL applications. Why do banks exercise discriminatory tactics while sanctioning SLs based on students' socioeconomic and institutional settings? This question remains unexplored in this study. Second, interviews of the parents of SL borrowers would have given more insights into the study. How do parents perceive student loan debt? Answer to this

would have supplemented the findings of the study, which is missing. Third, labour market analysis is done using the information collected from final year graduates, and no attempt is made to survey the employed graduates (who are already in the labour market). Therefore, including the PHE graduates who are actually engaged in jobs would have given a better picture of the labour market outcomes of PHE graduates and would have unfolded the problems related to repayment of SLs. Fourth, the study was impacted by the Covid-19 pandemic as the interaction with the students, especially loan borrowers, was limited. Fifth, the study has focused only on engineering and management courses without including other costly professional disciplines such as medicine and law.

Nevertheless, this study examined some important aspects of student loans in India. Research in this domain is understudied in India, making this work an important contribution to the broader field of higher education financing. This study can, however, be considered as an initial foray for further investigations. First, discipline-specific studies are needed to find out if these results can be generalised in other fields of professional education, such as medicine and law, as the present study is confined to engineering and management education. Second, the study is focused on Delhi, and the generalisation in India requires extending the scope to include other Indian states. Especially, studies examining the case of southern states would give some interesting insight as the region alone holds around 60% of the total student loan accounts in the country. Third, studies examining the SL borrowers who are actually in the labour market are needed to unfold their experiences regarding student loans and problems related to loan repayment. Fourth, qualitative case studies such as suicide due to SL application rejection are desirable as these incidents underlined the failure of student loan policy in India. Fifth, as mentioned in the limitations, bankers' perspective on SLs would give the supply side story of SL market. It would give explanations regarding the discriminatory practices exercised by banks while granting loans to students from disadvantaged groups. Sixth, exploring the SL market for studies abroad would give some different perspectives altogether since the socioeconomic background of the student aspiring to study abroad might differ from those studying within India. Seventh, longitudinal studies to examine the ripple effect of SL borrowings on the life choices of the borrowers would be interesting since student debt has the potential to linger on and affect decisions like further

studies, starting a business, marriage, purchasing a car, buying a house, stock ownership, and mental health.

To conclude, the annual average household spending on professional higher education in Delhi is nearly ₹3 lakh, which accounts for 16.2% of the total annual family income. Given the costly nature of higher education, specifically professional courses, student loans are propounded as an alternative to funding HE in India. The primary survey of 1,508 PHE graduates in Delhi unravels several interesting insights into the student loan market in India. Results show that students from low socioeconomic setups are less likely to receive student loans than their wealthy counterparts. Interactions with students reveal that the procedure to avail student loans is quite tedious, and it discourages several of them from accessing it, even if they face severe financial hardship to fund their education. Further, it is revealed that there exists a gap in placement rates and salary offered based on the student's socioeconomic and institutional factors. More importantly, student loan borrowers face stress regarding securing a job and a dearth of career choices after completing their course. Further, the presence of several imperfections in student loan market in India, coupled with the increasing job uncertainties for professional graduates, have made student loans inaccessible. As the Government of India has been and continues to emphasise student loans as an alternative to funding higher education, specifically professional courses, there is an urgent need to overhaul the student loan policies in India, particularly to support the needy students who otherwise won't be able to access higher and professional education.

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APPENDIX – STUDENT SURVEY

Student Loans and Financing of Professional Higher Education in Delhi

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Dear friends,

I am Amit Kumar, currently pursuing PhD from Zakir Husain Centre for Educational Studies, School of Social Sciences, Jawaharlal Nehru University (JNU), New Delhi. The title of my thesis is *"Student Loans and Financing of Professional Higher Education in Delhi."* The main objective of this study is to examine the access to student loans among students pursuing professional higher education courses in Delhi. The information collected through this survey will be used in an aggregate form for my PhD study only.

I am seeking about 10-15 minutes of your time to complete the survey.

Thank you in anticipation.

Amit Kumar
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A. Personal & Household Information

1. Gender: □ Male □ Female □ Other

2. Caste: □ ST □ SC □ OBC □ GEN

3. Religion:
□ Hindu □ Muslim □ Christian □ Sikh □ Other

4. Age (in years):……

5. Marital Status: □ Married □ Unmarried

6. Location(Native Place): □ Rural(village) □ Urban(town)

7. Education qualification of your Parents?

Father	Mother
□ Illiterate □ Class 1 □ Class 2 □ Class 3 □ Class 4 □ Class 5 □ Class 6 □ Class 7 □ Class 8 □ Class 9 □ Class 10 □ Class 11 □ Class 12 □ Diploma (1 yr or less) □ Diploma (2 yrs) □ Graduation (3yrs) □ Graduation (4yrs) □ Post Graduation □ MPhil □ PhD	

8. Occupation of your Parents?

Father	Mother
□Bank Employee	□Govt. Job (not in bank)
□MNC/Corporate Sector	□Private (other than MNC)
□Self-Employed/Business	□Agricultural work
□Homemaker	

9. Family type? □ Joint family □ Nuclear family

10. Total number of Family Members:……...
Number of Siblings:……..

11. Number of siblings currently attending:
(a) School Education (1-12th class):……..
(b) General Higher Education (>12th):……..
(c) Professional Higher Education (>12th):……...

12. Your family's monthly Income? Rs.……

13. Range of Family Monthly Income
□ Below 50,000 □ 50,000-1 lakh □ 1-3 Lakh
□ 3-5 Lakh □ 5-10 Lakh □Above 10 Lakh

14. Does your family own following vehicles?

Two-wheeler/Bike	Y	N	Bus/Truck/Tractor	Y	N
Car/Auto	Y	N	Any other Vehicle	Y	N

15. Does your family own land? □ Yes □ No
If yes: how much (in square yard/guz)……

16. Does your family own house? □ Yes □ No

B. Academic Background

17. Year of passing 12th Class:……

18. Location of 12th School: □ Urban □ Rural

19. Type of 12th School:
□ Government □ Private-Aided □ Private-Unaided

20. Percentage Marks in 12th Exam:……

21. Medium of study in 12th? □ English □ Hindi □ Other

22. Board of 12th Exam? □CBSE □ICSE □State □Other

23. Course currently attending:□B.Tech □MBA □PGDM

24. Discipline/Branch of Study?

If Attending B.Tech	*If Attending MBA/PGDM*
□ Civil □ Mechanical □ CS □ IT □ E&C □ Electrical □ Other	□ Marketing □ HR □ Finance □ Entrepreneurship □ Other

25. When did you join the current course?
□ After 12th □ After Diploma □ After Graduation
□ After BTech □ Other

26. On the basis of which entrance test did you get admission in present course?

If Attending BTech	*If Attending MBA/PGDM*
□ IIT-JEE □ AIEEE □ Institutional exam □ Other	□ CAT □ XAT □ CMAT □ GMAT □ Other

27. Rank in Entrance exam (approx):……..

28. How many times did you attempt Entrance exam?
□ Once □ Twice □ Thrice □ >Thrice

29. Did you attend any private coaching for entrance exam? □ Yes □ No
If Yes, Duration of Coaching (months):……
Total Money spent on Coaching (₹):…….

30. Name of College:……...
Type of College: □ Govt. □ Pvt-aided □ Pvt-unaided
Admission Year:…… Semester:……...
Last semester Grade/Percentage:……...

31. What was your choice for current college?
□ First □ Second □ Third □ Fourth onwards

32. What was your choice for current discipline?
□ First □ Second □ Third □ Fourth onwards

33. Does your college/university provide scholarships?
□ Yes □ No

34. Have you applied to avail scholarship? □ Yes □ No

35. Are you receiving any scholarship at present? □Y □N
If yes, which? □ State Govt. □ Central Govt.
□ Institutional □ Other
Scholarship amount per year? Rs…….

Do you get your scholarship regularly? □Yes □ No

Is scholarship amount enough to meet your educational expenses? □ Yes □ No

If not received scholarship, how do you finance your education? ☐ Family ☐ Relative/Friends ☐ Student Loan ☐ Any Other Loan ☐ Part-time Job ☐ Others

36. Where did you stay before Covid-19 pandemic?
☐ Home ☐ Hostel ☐ Private Mess ☐ Others

37. Distance of your clg/univ from above stay(kms)…….

38. Currently where do you stay?
☐ Home ☐ Hostel ☐ Private Mess ☐ Others

39. Expenditure for current course	***Amount Per Year***	
College tuition fees		
Other fees (lab/sports/exam etc.)		
Caution deposit/ Capitation fee		
Amount Per month	**Pre-Covid**	**Post-Covid**
Food and accommodation		
Textbooks & Study materials		
Transport		
Private tuitions/coaching		
Mobile & Internet		
Other educational expenses		

40. Do you participate in the following co-curricular activities?	Yes	No
Sports Competitions		
Academic Competitions		
Student Union		
Annual Functions		
Hostel Nights & Other Functions		
College Group Picnic & Trips		

C. Student Loans

41. Did you apply for a Student loan for your current course?
☐ Yes ☐ No

42. Does your college/university have a tie-up with any bank/financial institution to provide student loans?
☐ Yes ☐ No

43. Have you or your family taken any other loan for study for you or your siblings? ☐Yes ☐ No

44. Were you aware about following loan schemes and portals before getting admission in present course?

	Y	N
Delhi Govt. Education Loan Scheme	☐	☐
Central Govt. Education Loan Scheme (CSIS)	☐	☐
Any other Loan Scheme	☐	☐
Your College/institution tie up	☐	☐
Vidya Lakshmi Portal	☐	☐

If Applied loan, was the following reasons a major concern for applying:	Y	N
High Cost of Course	☐	☐
Other expenses are high	☐	☐
Low rate of Interest	☐	☐
Contacts in Bank	☐	☐
High Boarding (Residential) Costs	☐	☐
Weak Financial Situation (Unaffordability)	☐	☐
Loan make student more serious toward education	☐	☐
Easily available due to good College Reputation	☐	☐
Other reasons not mentioned above	☐	☐

***If* Not applied Loan**, was the following reasons a major concern for not applying:	Y	N
Enough Financial support from family	☐	☐
Not aware of Student Loan Scheme	☐	☐
Lack of Collateral	☐	☐
Lack of family Cooperation	☐	☐
High rate of Interest	☐	☐
Repayment becomes a burden on student	☐	☐
Uncertainty of jobs	☐	☐
Other reasons not mentioned above	☐	☐

45. If not applied student loan, are you getting financial support from the following to finance your education?

Family	*Y*	*N*	Part-time Job	*Y*	*N*
Relative/Friends	*Y*	*N*	Any other Loan	*Y*	*N*
Scholarship	*Y*	*N*	Other funding source	*Y*	*N*

46. How did you apply for student loan?
☐ Vidya Lakshmi portal ☐ Delhi Govt. Website
☐ Through your college/institution tie up
☐ Directly to Bank ☐ Other

47. In how many banks did you apply for a student loan?
☐ One ☐ Two ☐ Three ☐ More than 3

48. Why did you apply in more than one bank?
☐ Flexible Collateral ☐ Low-Interest Rate
☐ Contacts in Bank ☐ Easy Access to Bank
☐ Easy application through Vidya Lakshmi Portal
☐ Not Applicable ☐ Other

49. Which bank type did you prefer while applying for a student loan? ☐ Public ☐ Private ☐ Other

Tick the reasons for preferring above bank(s) type		
	Yes	No
Low interest rate	☐	☐
Publicity/Advertisement	☐	☐
Recommendation	☐	☐
Easy Repayment policy	☐	☐
Easy documentation process	☐	☐
Relatives/friends working in bank	☐	☐
Other reasons not mentioned above	☐	☐

50. How did you come to know about student loans?
☐ Parents/Relative ☐ Friends ☐Internet/TV/Media
☐ Seniors/Alumni ☐ College/Institution ☐ Other

51. With whom did you discuss about terms & conditions of Student loans? ☐ Parents ☐Teacher/College Staff ☐ Other Students with loan ☐ Bank Staff

52. Do you have any relative/friend who is working in a bank? ☐ Yes ☐ No

53. Do you think contacts in a bank help in getting student loan? ☐ Yes ☐ No

54. Do you think college/university plays a crucial role in getting student loan? ☐ Yes ☐ No

55. Do you think alumni of college/institute help to get student loan? ☐ Yes ☐ No

56. Were you aware of the followings before applying for student loan:		
	Yes	***No***
Loan Agreement (Terms/Conditions)	☐	☐
Procedure & Process	☐	☐
Rate of Interest	☐	☐
Security Requirements	☐	☐
Borrowing Limits	☐	☐
Preconditions for Sanction	☐	☐
Repayment Period	☐	☐
Mode of Disbursement	☐	☐

57. Whether faced following problems:	***Yes***	***No***
Understanding Terms & Conditions	☐	☐
Delay in Approval	☐	☐
Arranging Guarantor	☐	☐
Arranging Collateral/Security	☐	☐
Unfavourable attitude of College	☐	☐
Repeated visit to Banks	☐	☐
Complicated Procedure & Formalities	☐	☐
Unfriendly Attitude of Bank Staff	☐	☐
High Cost of Borrowing	☐	☐
Early Repayment	☐	☐

58. How much do you think banks give importance following factors while sanctioning loan?			
	High	***Low***	***No Imp***
Family Income			
Family Wealth			
Collateral Guarantee			
Type of Course/Study			
Goodwill of College/Institution			
Job Guarantee by College			
Placement record of Institution			
Marks Scored in Qualifying Exam			
Good Rank in Entrance Exam			
Medal/Certificates of Student			
Future Income of Applicant			
Parents' Bank Account History			
Political Reference			
Insurance Policies			
Permanent Address of Student			
Past Loan & Repayment History			
Good Academic Recommendations			

59. Loan amount applied?.....

60. Was your loan application accepted by bank? ☐Y ☐N

Student Loan Rejected

61. ***If rejected,*** why did the bank reject your loan application	Yes	No
Insufficient documents	☐	☐
Lack of Collateral	☐	☐
No Guarantor	☐	☐
Not so good reputation of College	☐	☐
Conflict with your College/Institution	☐	☐
Unsatisfactory Academic Record	☐	☐
No placement guarantee by college	☐	☐
Weak Financial situation of family	☐	☐
Other reasons not mentioned above	☐	☐

62. If loan rejected, are you getting financial support from the following to finance your education?

	Yes	No
Family	☐	☐
Relative/Friends	☐	☐
Scholarship	☐	☐
Part-time Job	☐	☐
Any other loan	☐	☐
Any other funding source	☐	☐

Student Loan Accepted

If application accepted, answer the following:	
Bank Type ☐ Public ☐ Private ☐ Other	
Year of getting loan	
Rate of Interest (%)	
Loan amount Sanctioned by the bank	
Duration of Loan Repayment	

63. Who is the guarantor of your loan?
☐ Parents ☐ Teacher ☐ Relatives ☐ Other

64. Occupation of the guarantor?
☐Bank Employee ☐Govt. Employee (not in bank)
☐MNC/Corporate Sector ☐Private (other than MNC)
☐Self-Employed/Business ☐Agricultural work
☐Homemaker

65. Was the loan amount paid on time? ☐ Yes ☐ No

66. Time taken for sanctioning the loan (in days)……...

67. Time lag between sanctioning and actual disbursement of loan amount (in days)…….

68. Was the loan amount enough to meet your educational expenses? ☐ Adequate ☐ Inadequate

69. If you were not granted this loan, would you be pursuing the current course? ☐ Yes ☐ No

70. Are you satisfied regarding the following aspects:		
	Yes	***No***
Adequacy of Loan Amount	☐	☐
Borrowing Limits	☐	☐
Rate of Interest	☐	☐
Timely Sanction	☐	☐
Preconditions for Sanction	☐	☐
Timely Disbursement	☐	☐
Mode of Disbursement	☐	☐
Fixation of EMI	☐	☐
Repayment Period	☐	☐
Overall Procedure & Process	☐	☐

71. Will you be able to repay the loan amount as per bank's terms and conditions? ☐ Yes ☐ No

72. Your intention towards loan repayment:	***Yes***	***No***
Loan repayment is your obligation/priority	☐	☐
Make regular payments to avoid future problems	☐	☐
Start saving during study to repay loan in future	☐	☐
Join any job to repay the loan	☐	☐
If unemployed, then parents will repay	☐	☐

73. Will loan repayment affect your following future decisions:	***Yes***	***No***
Selection of Place to Stay	☐	☐
Choosing a Job	☐	☐
When to Get Married	☐	☐
When to buy First Car	☐	☐
How much money to contribute to Parents	☐	☐

74. Do you feel any stress about repaying loan amount? ☐ Yes ☐ No

75. Is there any pressure to perform better in studies from the loan guarantor ☐ Yes ☐ No

If yes, answer the following:	***Y***	***N***
Does this stress hamper your studies?	☐	☐
Do you share this stress with your friends?	☐	☐
Do you think you can perform better in studies without this stress?	☐	☐
Has your repayment stress increased due to Covid-19 pandemic	☐	☐
If no, tick the possible reasons	***Y***	***N***
Guaranteed job placement by college	☐	☐
Will ask Family to support in repaying the loan	☐	☐
Hoping to waiver the loan amount by govt.	☐	☐
Possibilities of negotiating with the bank	☐	☐
Other reasons not mentioned above		

D. Labour Market Outcomes/Expectations

76. Your plan after completing the current course?
☐ Job ☐ Further Studies

77. Whether did or doing any part-time job while enrolled in the present course? ☐ Yes ☐ No

78. Does your college/institution have any campus placement facility? ☐ Yes ☐ No

79. Have you accepted any job offer from campus placement? ☐ Yes ☐ No

If yes, answer the following:	
Is the job related to your field? ☐ Yes ☐ No	
Company Type	☐MNC ☐Govt ☐Domestic ☐Other
Annual salary offered	
Joining (Month & Year)	

If no, answer the following:

80. When do you expect to start working after completing current course? ☐<1 month ☐ 1-6 ☐ 6-12 ☐>12 mon

81. Expected annual salary from first job……

THANKS FOR YOUR COOPERATION

APPENDIX – INTERVIEW SCHEDULE

Student Loans and Financing of Professional Higher Education in Delhi

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Dear friends,

I am Amit Kumar, currently pursuing PhD from Zakir Husain Centre for Educational Studies, School of Social Sciences, Jawaharlal Nehru University (JNU), New Delhi. The title of my thesis is *"Student Loans and Financing of Professional Higher Education in Delhi."* The main objective of this study is to examine the access to student loans among students pursuing professional higher education courses in Delhi. The information collected through this interview will be used in an aggregate form for my PhD study only.

I am seeking about 30 minutes of your time for the interview.

Thank you

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Interview Schedule

1. Student loan schemes aim to widen access to higher education among students from disadvantaged groups. Do you think student loans make professional higher education accessible? If yes, how? If not, kindly explain the problems associated with student loans market in India. Do you think the decision to take student loan affects the choice of discipline? What would be your suggestions to improve access to student loans in India?

2. Some studies have found that commercial banks grant student loans based on the socioeconomic and institutional factors of the applicants. Did you encounter any difficulties while accessing student loans? If yes, please share your experience. Do you think commercial banks engage in discriminatory practices based on the socioeconomic and institutional factors of the applicant?

3. Student loan take-up is argued to be associated with stress regarding academic performance. Do you feel any psychological stress due to student loan borrowing? If yes, does this stress hamper your studies? Do you participate in co-curricular activities? If yes, how often? Is there any difference between borrowers and non-borrowers in terms of participation in these activities? If yes, can you elaborate on how?

4. The transition from higher education to the job market is a complex process. What are your expectations from the job market? Do you feel any stress regarding securing a job? If yes, has the Covid-19 pandemic increased this stress?

5. It is often argued that student loan borrowers are stressed due to loan repayment. Will you be able to repay the loan amount in the specified time? If not, will you ask your parents to help repay your loan? Do you think student loan borrowings will affect your major life choices, such as further studies, career choices, marriage, buying a car, and financial contribution to family?