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Grey Academic Degree Market in India

A Mixed Method Study

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This document represents part of the author's study programme while at the Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

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List of Acronyms

B.Ed	Bachelor of Education
CV	Curriculum Vitae
IGNOU	Indira Gandhi National Open University
LLB	Bachelor of Law

Abstract

In India, there exists a grey market of degree certificates, where legal degree certificates can be bought. The local agents work as mediator between the certificate seekers and the certificate providing universities. This research combines qualitative ethnographic research and quantitative field experiment to uncover the various dimensions of the grey degree certificate market in India. The grey degree market is a complex and densely networked contour of numerous socio-economic and cultural factors. The grey certificates have symbolic meaning and economic meaning. The calculative buyers buy these grey degrees for numerous reasons and in diverse ways they incorporate these grey certificates in their life goal. Reproductive role plays important role, so the social acceleration. They are rational but the notion of rationality here goes beyond the arena of pure judgement.

The field experiment data reveal that those who can afford to buy grey credentials are in better position in the job market. In the field experiment, fictitious CVs with grey credentials are sent and these are controlled with another two CVs, one with an authentic credential and another one with no graduation degree credential. We measure callback rates as proxy to the employability of different types of certificates. On average grey degrees receive 8.33% more callbacks than having no graduation degree certificates. However, grey degrees receive on average 13.67% less callback than the callbacks. In terms of economic return women are in far better position in terms of return on grey credentials.

Relevance to Development Studies

Development studies questions the mainstream and often homogeneous representation of the subjects and, so the current research. This research contributes to the development studies by investigating how 'education' at the grey zone finds its meaning within the broad intersection of market forces, gender role, reproduction, social acceleration etc. In tradition of development studies, this research looks at the phenomenon of grey degree market in interdisciplinary way to uncover the various dimensions of the market.

Keywords

Education, Degree Certificate, Grey Market, Commodification, Calculative Agent, Reproduction, Social Acceleration, Field Experiment.

Chapter 1: Prologue

1.1 Introduction

“You get only what you pay”¹ utters one agent whom I met as a prospective buyer of an academic credential. Student who intends to avoid the study and still want to receive a legal certificate, must be ready to pay. To the agent this is plain logic and, yet he insists that his work is not easy. “I must say that this is not an easy job for us, we have to make connections, keep connections with the universities, update ourselves on regular basis on the loopholes of the legal procedures”. Possibly, most people would see this as an offence and these agents are villains. But he thinks differently. “I believe we are not paid accordingly. In that sense also should we not call it a social service?” Lack of school to job transition opportunities added more fuel into the fire. “Sometimes students find it useless to do full time courses, except some professional courses. They want to earn, but also require certificate. We are cleaning out that gap”. According to him some unnecessary hurdles created by government are harming students. “Let’s talk about LLB. You cannot do this on part time basis. But honestly tell me is it worth to spend three years in doing LLB after three years of graduation, unless you get a good university? We are providing this. At Rs. 60,000 you can get a LLB. That would be a regular course. You necessarily have to sit in exam, but you can carry your books. We arrange that. If you pay a little more, then you'll find that your answer script ready and you just need to sign.” (Partha, Agent).

Indeed, I am talking about the grey market of academic credentials in India. Media reports in their ways. The eye catching headline “Degrees on sale: Jaipur study centres offer bachelor degree to PhD for money” (Kumar et al. 2011) reported in *indiatoday.in*, to the satirical one “Fake degree scam: No sweat, you can get a university degree in 10 days” (Ullas and Prasher 2013) reported in *The Times of India* and the soberer one “PhDs, Bachelor's degrees on sale in Punjab” (Chowdhary 2011) reported in *NDTV*, indicates the extension of this grey market. These journalistic engagements together with my research results emphasize that this phenomenon is a public secret. But, it may seem awkward that how can there be a market of academic credentials? After all, we tend to believe that, at least academic credentials are not commodities. But, there exists a market of academic credentials in India, where credentials can be bought. But these bought credentials cannot be exchanged as the degree credentials are issued to a particular identity. In that sense these are not a pure commodity. The local agents mediate between the potential buyers and willing sellers. They advertise in local newspapers, in local railway coaches and also distribute leaflets. The sellers are the universities, in most cases privately funded universities. These credentials are legal credentials and cannot be differentiated from authentic credentials but sold through the grey zone.

¹ Most of the conversations originally are in Bengali and in some cases in Hindi. These are reported here in English, translated by Author.

The market is a fundamental instrument and place of economic and social life. The classical economic idea of the market revolves around economic activities and is conceptualised as a place for economic activity. The classical economics' perception of market is often criticized because of its lack of 'social' dimension. However, economists have routinely updated the notion of market. Market is envisaged as "institutions that make available to interested parties the opportunity to negotiate mutually advantageous courses of action" (Dasgupta 1996: 172) and he adds that the actors "need to know the extent to which they are empowered to negotiate, the extent to which the other parties are empowered to negotiate, and so on" (ibid: 172). Idea is that the market is perfect and the demand-supply mechanism gives equilibrium price. Economists further extend the equilibrium mechanism in imperfect market and relaxed the assumption of perfect and complete information. The sociological criticism, which alleged that the economists' conceptualisation of the market is narrow, claim the embeddedness of economic life in 'social' (Granovetter 1985). The economic sociologists try to put 'social' within the economic actions. Embeddedness "capture many forms of social, political, and cognitive structuring within the economy" (Fourcade 2007: 1017). On the other hand, the performativist school blurred the boundary between market models and market practices (Berndt and Boeckler 2012). The calculative agents frame the market. But what kind of market this grey academic certificates market is? How the social and economic life is intermingled here?

The existence of grey market signals the loopholes in the traditional academic system. The basic economic model of education would predict that, probably the grey market exists because of a demand-supply mismatch (Brown 2006). In line with many international experiences, there are growing number of private degree providers in India in the domain of tertiary education. Also the distance education system in India is well-developed, robust and affordable. But in spite of availability of options, the question remains unanswered is why do people buy these degrees? How different actors engage in this market? These questions call for thorough academic research.

In any advanced society, arguably, a robust university system is necessary, where prospective job seekers can acquire skill training and get their credentials. Degree certificates, as economists understand, mediate as signals to resolve the information asymmetry in the job market (Akerlof 1976). These credentials signal the credibility of the job applicants, which is known as 'sheepskin effect' (Ferrer and Riddell 2002), and these credentials signal the characteristics of the prospective employees which are otherwise unobservable to the employers. Another important question is that if these grey credentials have any return in the labour market? Or in another sense, how employable those are with these grey credentials? The efficient labour market should identify these grey credentials. But very often labour market operates at the sub-optimal level amidst imperfect and incomplete information.

I conducted a qualitative exercise with ethnographic approach to apprehend the deep structural foundation of the market and nature its actors. In total I interviewed 28 participants. It is necessary to contextualise the phenomenon and we should try to understand it through the realm of particularities of social relations and networks formed by them. The grey academic certificate market is a complex assemblage of various actors and networks. But the market is

‘true’. It consists of buyers and suppliers and the calculative agents produce price. I observe how competition keeps the prices standardized.

The qualitative study identifies multiple dimensions of the grey market. Then I take a one dimensional study to investigate the problem of employability of these grey credentials. I zoom into the economic dimension of the functioning of the grey market. I conduct a field experiment, where I send fictitious CVs with grey credentials to see the employability of these grey credentials, proxied by callback rates. CVs with grey credentials are controlled with another two CVs, one with an authentic credential and another one with no graduation degree credential.

The chapter is organised as follows. Section 2 presents research questions of my study. In section 3, I present the study context and study setting. Methodology of our study follows in section 4.

1.2 Research Questions

In sum, in this research, I aim to understand the grey academic degree market in India and also aim to uncover various dimensions of the grey market. Amidst the emergence of grey academic degree market, I ask following sub questions:

- (1) *What kind of commodities are grey certificates?*
- (2) *How do different actors incorporate grey certificates in their life goals?*
- (3) *How much do grey certificates increases the chance of employment, proxied by callback rates?*
- (4) *Is it economically worth to buy grey certificates?*

Chapter 2 tries to answer the first two sub questions whereas chapter 3 tries to investigate the last two sub questions. The research paper, as a whole, aims to provide a holistic view of the grey market.

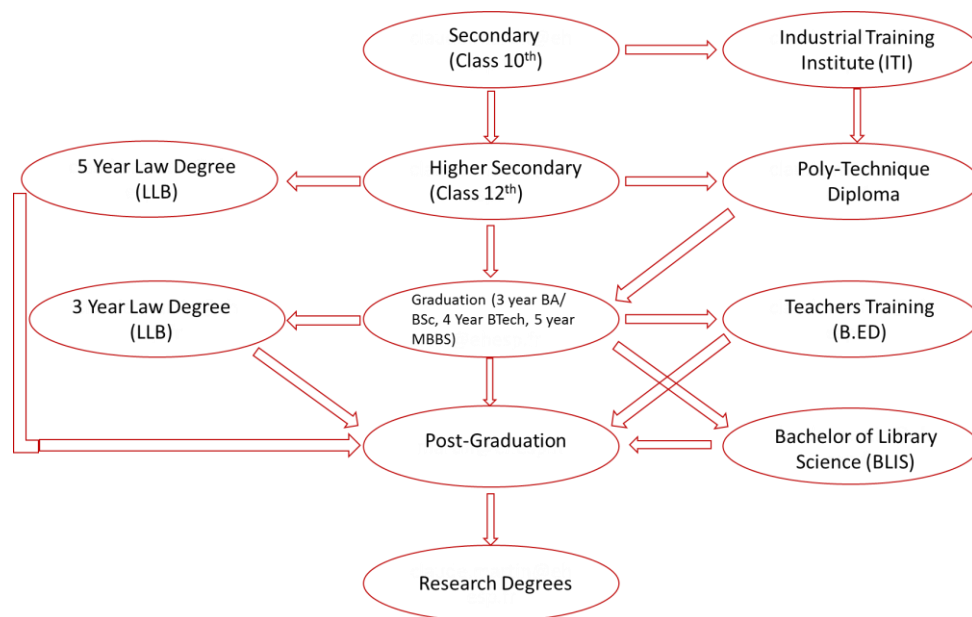
1.3 The Context and Study Setting

Previous work has argued that Indian higher education system is not robust and not ready for future challenges (Jayaram 2004) but, at least the higher education in India is affordable (Agarwal 2007). Youth often find the educational curriculum obsolete, and so do employers (Agarwal 2007, Desai 2009). There is also growing concern regarding the labour market gap in the global south (Dobbs et al. 2012). Either there are shortages of demand for labours or there are demands but lack skill matching (McGowan and Andrews 2015, Sodhi 2014, Thite and Russell 2010). Recently the Government of India has launched national skill development plan to cater this growing mismatch in skills. What constitutes a vital role, is the value of the diplomas. The large chunk of young people at the age group of 15-24 years are waiting for the job market entry. However, in India, labour force participation of this group has fallen from 47.1% to 35.3% between 2005 to 2013 (Gaba and Li 2015). The management of school to job market transition has become one of the central policy questions.

On the other hand, interestingly, in most cases college seats in Arts and Social Science subjects remain vacant or occupied by students whose main aim is to prepare for the public sector jobs, but there is high demand for university level post graduate education and also science subjects at the graduation level which is in short supply. Beyond higher secondary education level only 10% of the university-age population have access to higher education (Nagarajan 2014). It has become increasingly necessary to update oneself and remaining in line, with as many degree certificates as possible. On the other hand, it is becoming more difficult to be in ‘line’ in the globalised world and the burden of self-development is incessantly becoming heavier across cultures (Abelman et. al. 2009). Employers are demanding ready to be hired skills, already present in employees, which results in growing demand for education and training for the corporate market and universities are adapting to this increasing demand (Watling et al. 2003, Zemsky et al. 2005). Also, those in the public jobs, quite often need higher education for promotion.

Before further enquiry it is beneficial to have a brief discussion of the Indian higher education system. Indian higher education is far less complicated than the higher education systems in economically developed world. Figure 1 represent the most common pathways available to an Indian student who has passed the 10th standard or secondary exam.

Figure 1: Common Pathways in Indian Higher Education System



The crucial difference of the Indian higher education system from those in economically developed countries are fewer pathways and less interconnectedness between different nodes in the figure. It is worth noting here that most participants who are buying grey degrees are situated in various pathways. There is no uniform pathway. A more systematic understanding of different pathways is beyond the scope of current exercise.

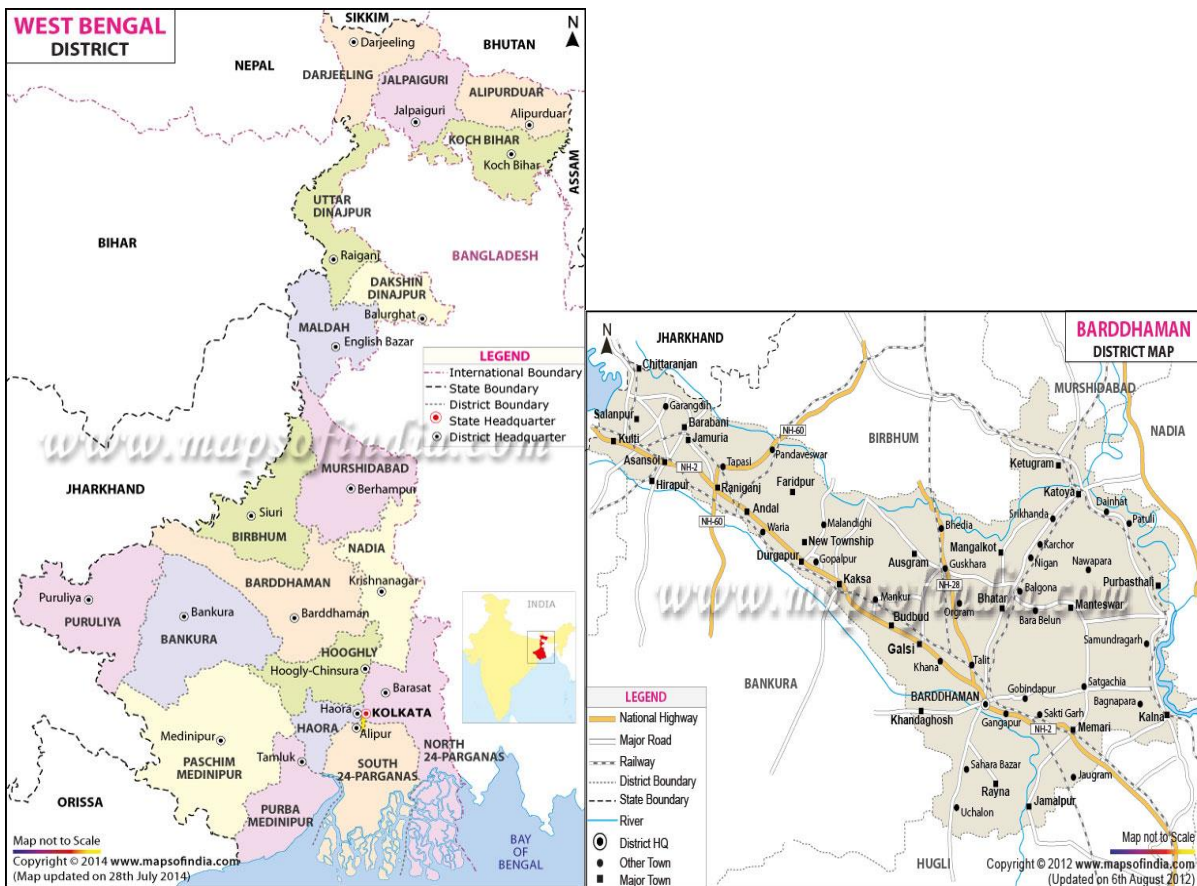
In developing countries, especially in India, structural barriers to the entry to the formal education system are well-known and well-documented (Buchmann and Hannum 2001, Drèze and Sen 2002, Kingdon 2007, Reddy and Sinha 2010, Sharma and Desai 2002). I find in most

cases, participants are buying or bought degree certificates under the open and distance learning mode. Distance education has noble purpose. But the same distance and open learning mode is being used by the edupreneurs (Partha wants to be called himself) to create a grey market, where these certificates are sold. In developing countries, to cater the need of those who cannot attend formal education system because of structural reasons, the open and distance learning system tries to fill the vacuum (Gulati 2008, Perraton 2008, Zhang and Shin 2002). India also has a robust system of open and distance learning (Gupta and Gupta 2012). At the national level IGNOU was established long ago, in 1985, and which is claimed to be the largest university in the world. In IGNOU alone, in 2013, 722390 students enrolled in various courses (Gaba and Li 2015). Almost every state in India has at least one state funded open and distance learning university. Appendix 1 depicts enrolment and growth in enrolment in distance education system in India.

1.3.1 Study Setting:

The setting of this analysis is the employed or employment seekers, pursuing degree certificates in peri-urban or rural West Bengal. Most of my participants are from Barddhaman district and also the degree agent Partha is from Barddhamdan. Figure 2 depicts the political maps of the state of West Bengal and of Barddhaman district respectively.

Map 1: Political Map of West Bengal and Barddhaman District



Source: <http://www.mapsofindia.com/maps/westbengal/westbengal-district.htm#> & <http://www.mapsofindia.com/maps/westbengal/districts/barddhaman.htm#>

But this phenomenon has Pan-India base. All the participants bought or are buying certificates from the universities based in other states.

The experimental study has wider coverage in space. The employers whom I send fictitious CVs have Pan-India existence. However, for the purpose of internal validity I excluded out of the state job advertisements, but most employers have their head office out of West Bengal.

1.4 Methodology²

Methodologically, my research adopts mixed method, i.e., combined use of quantitative and qualitative data. This intention to use mixed method is informed by epistemological considerations. The choice is based on particularities of the research problem and relative efficiency of various techniques, and these should be looked into an integrated manner. The qualitative research takes the ethnographic approach and for quantitative part I conduct a field experiment.

² This section is adapted from an assignment written by the author of this research paper for the course ISS-3303-1516 – Ethnographic Research and Reflexivity in Developing Contexts.

Ethnographies have high explanatory powers in explicating facts and processes, and, ethnographies are not employed to particularly test hypotheses (Hammersley and Atkinson 2007). My engagement starts with what Malinowski refers to as ‘foreshadowed problem’ of analysis. Good research involves clear choice of fieldwork practice backed with epistemological contemplation. Ethnographic orientation is my guiding framework here, as this gives me scope, and, guidelines for fieldwork practice (Huijsmans 2010). Ethnography involves “significant *development* of the ordinary modes of making sense of the social world that we all use in our mundane lives, in a manner that is attuned to the specific purposes of producing research knowledge” (Hammersley and Atkinson 2007: 4, emphasis original).

The experimental research uses the long traditions of experimental research in economics. Here, in this research I use field experiment. Field experiments use controlled experiment in a natural field context. The controlled experiment has explanatory power and often helpful in situation where it is difficult to get revealed preference data. Because of controlling power in field experiments, I can claim certain degree of causality. The collection of primary data could have been an alternative, but arguably cannot uncover the discrimination based on credentials. In field survey it is also not possible to conduct survey under fully controlled setting, so degree of causality cannot be claimed. The field data has no or limited controlling power. In this case control of personal characteristics are of colossal importance to uncover the research question.

1.4.1 Epistemological Guidance

The rich tradition of academic research involves numerous philosophical and epistemological traditions. Within social science the battle between positivism and naturalism are quite well fought. Positivism gives primary importance in logical sequences, in most cases it relies on measurable and quantifiable variable. Positivist techniques are employed, mainly, to test quantifiable hypotheses. Naturalism gives primacy to the natural state of the subject of the study. Naturalism draws from many philosophical traditions, most notably from symbolic interactionism, phenomenology and hermeneutics (Hammersley and Atkinson 2007). In this research, I see the positivism and naturalism in an integrated way. Both traditions have advantages and limitations. Here, I combine both to get a novel picture of the study. The experimental study is, undoubtedly, rooted in the positivist tradition, whereas, ethnographic orientation is leaned towards naturalism. Different research questions in this research require different approaches. Some questions can be answered with the description of processes and hidden meanings, while some need quantification.

1.4.2 Sampling Strategy of Qualitative Research

Sampling strategy is quite different in two methods. Here and in the next section on the methods of data gathering, I primarily discuss the strategy of qualitative research. The experiment is discussed in detail in chapter 3. I used chain sampling, which is also referred as snow-ball sampling (Biernacki and Waldorf 1981), to recruit research participants in qualitative exercise. In this technique consecutive participants are recruited through the referral of the previous participants. Idea is to create a chain of participants. The main shortcoming in

qualitative research, as often argued, is the problem of representativeness and generalisability. But, in qualitative research generalisability is not often designed. Two alternatives are suggested in literature to counter the problem of representativeness and generalisability: extended case studies and sequential interviewing. I employed sequential interviews, where every participant faces different question sets. In this approach “the number of units (cases) is unknown until the study is completed; the collection of units is, by design, not representative; each unit has its own probability of selection” (Small 2010: 25). Here, the case selection process stops when we reach a point of saturation. After 22nd interviews the different pathways and reasons of buying grey credentials started to converge. But to get robustness of my findings I conducted some more interviews and stopped after 28th interview. Another critique is the small-n problem. To overcome the small-n argument, I’ll rather say my cases are ‘set of cases’ not ‘small sample’ of cases. I’ll argue this is not small sample study, but multiple case studies (Small 2010).

1.4.3 Methods of Data Gathering in Qualitative Research

I used participant observation along with interviews. Participant observation is “defined as a field strategy that simultaneously combines document analysis, interviewing of respondents and informants, direct participation and observation, and introspection” (Denzin 1989, quoted in Flick 2009: 226). I approached to the degree certificate agents as a prospective buyer of these certificates. To uncover the process and mechanism of the grey market at the bottom of the chain, this observation as a prospective buyer was very relevant. I also accompanied some of the degree certificate buyers to the agents. I also used ethnographic and semi-structured interviews along with participant observation. Ethnographic questions are different from the questions typically asked in other kind of interview techniques and these are “structural questions (answering them should show how informants organize their knowledge about the issue), and contrast questions (they should provide information about the meaning dimensions used by informants to differentiate objects and events in their world)” (Flick 2009: 170). I used ethnographic interviews primarily with the buyers, while to the degree agents I used semi-structured interviews as this gave me some degree of flexibility along with ‘guided focus’ (Ackerly and True 2010). These guided focus was necessary as it was very difficult to access to the agents, and they usually gave very limited time for the interviews.

1.4.4 Challenges

My research has several challenges; some are very specific for the particular research technique I use. I note the following challenges.

1.4.4.1 Accessibility and Critical Field Relation

In my experimental research, I use randomised control experiment and the accessibility is not a challenge. But in the case of qualitative research, this was challenging. In spite of ‘open secret’ nature of my research topic, we must acknowledge the fact that this is a grey area. Reaching to my participants was critical. I took phone numbers from various advertisements and started calling the agents, but all refused. Then, I changed my identity and reached to an agent as a prospective buyer. I had to encounter with several gatekeepers. Gatekeepers need

not be formal, institutional actors but can also be informal actors. The first gatekeepers were the agents. I asked the agent, to whom I went as a prospective buyer, for contacts of one of his buyers. I told him that I need to test his authenticity and I got one. Later, surprisingly, I also found out the one of my childhood friends and one relative in my extended family also bought these certificates.

These grey certificates are earned through the grey zone and not in legal way, and the buyers know this. This knowledge was my second gatekeeper. It was necessary to create rapport and extensive trust so that they find comfortable to share their stories with me. No participants allowed me to record their interviews and I respected their views. Protecting my participants is of absolute necessity here. I think I started with some degree of suspicion from their side. But this goes away with time while building rapport. I'm fortunate in this research as I speak the languages and I'm familiar with the local norm and culture. Gender does not play the central role in my research, but in field relations I cannot escape the gender role. In some cases, I had to take a female friend with me to interviews female participants.

1.4.4.2 Positionality and Reflexivity

I understand my privileged position vis-a-vis my research subjects. Being trained in global north and also in a very elite post graduate school in my own country, my relation vis-a-vis with my subjects are not linear, but a privileged one. Who are my participants? They are either struggling job seekers, people on job but situated at the bottom of the hierarchy of the job profile, housewives etc. But, in some sense, I'm also one of them. The research problem is not alien to my own life struggle. I grew up facing similar struggles and questions, I played with them and my habitat, arguably, was not very different from them. Positionality (Crossa 2012, Rose 1997) plays critical role in ethnographic tradition as this generates a balanced understanding of the subject. In a nutshell I do not pretend to speak for them neither claiming to represent them.

All knowledge is situated (Haraway 1991). In ethnographic tradition "all knowledge is produced in specific circumstances and those circumstances shape it in some way" (Rose 1994: 305). Ethnographer herself is posited within socio-economic-political and epistemological structure. Here comes the problem of reflexivity. Reflexivity can be seen "as a means of avoiding the false neutrality and universality of so much academic knowledge" (Rose 1997: 306). I am not neutral, unapologetically I am in favour of my participants, who are struggling and making their own way in this dwelling which one participant identified as a global mess. It questions the possibility of value-free research (Ng 2011). It demands conscious political awareness. As Cerwonka (2007: 26) notes that "potentially endless number of aspects or dimensions of an object or phenomenon can only be understood from a particular vantage point" and he adds "a vantage point means having a socio-historical location, but it might also be understood as a set of priorities, questions, or even hypothesis that one inevitably brings to bear in trying to understand an object or phenomenon".

1.4.4.3 Ethical Dilemmas

I have to deal with many ethical dilemmas. In anthropological and development studies research we run with motto of ‘do no harm’. We should always be asked not to involve in anything which can cause potential harm. There are also ethical issues in accessibility e.g., “to do with whose permission *ought* to be asked, as well as whose *needs* to be obtained” (Hammersley and Atkinson 2007: 42, original emphasis). The problem of informed consent is critical here in my research. I built sufficient rapport and trust so that I can have informed consent particularly in qualitative interviewing part. As I discussed earlier, privacy is substantially important here. But, often, there are rarely any concrete suggestion on how to counter the ethical dilemmas (Ferdinand et al. 2007). Anonymity is my weapon to counter the ethical dilemma. All the case studies that I use in my analysis are anonymous. I have stated that most of my participants are from Bardhaman district, but the Bardhaman district is home of more than 7,750,000 people. Stating the original place at the district level is no harm in my research. Ethical considerations of the experimental research are discussed in more detail in chapter 3.

1.4.5 Summary of Participants in Qualitative Research

As I mentioned earlier, I interviewed 28 participants; five agents and twenty-three buyers. Some of them has already bought and some of them are buying grey degrees. The socio-demographic profiles of the participants are summarised in Table 1.

Table 1: Sample Characteristics of Qualitative Data

	Males (N=17)	Females (N=11)
(1) Agents		
(Age)		
Range	22-40	32
Mean	30.75	-
(SD)	(7.12)	-
Sample Size (N)	4	1
(2) Buyers		
(Age)		
Range	24-41	24-31
Mean	30.85	26.70
(SD)	(5.71)	(2.61)
(Qualification Buying or Bought)	(N)	(N)
Higher Secondary	2	3
Graduation	4	4
Post-Graduation	5	3
Professional	2	0
Two or More	2	1
(Mode of Instruction of Degrees)		
Distance	9	8
Fulltime	4	2
(Occupation)		
Public Sector	4	2
Private Sector	5	1
Self Employed	3	1
Unemployed	1	6
Sample Size (N)	13	10

Notes: Section (1) presents sample characteristics of the agents and section (2) present summary of the buyers. All the numbers here represent number of participants, expect the row represents 'age', which are in years. Professional degree represented in my sample is only LLB and I present B.Ed degree as graduation level degree.

For my analysis, I present purposively selected eight case studies to present deep analysis and complexities. These case studies are selected based on their representativeness and also based on their explanatory power. I present six case studies of buyers Amit, Wasim, Sumitra, Anita, Soham, Dipayan and case of two agents, Anil and Partha for our analysis apart from experimental data.³ Following chapters describes the phenomenon of grey academic degree market in India, as I found in this research exercise.

³ Names are used anonymously.

Chapter 2: The Grey Market

2.1 The Market

The central tenet of economic sociology is the embeddedness of social in economic life. The three most popular traditions (Beckert 2009, Berndt and Boeckler 2012, Fligstein and Dauter 2007, Fourcade 2007), i.e., social network analysis, institutionalists and performativists, backs this point of embeddedness of social life within economic activities. The network analysis theorists try to find social structures within the economic activities whereas institutionalists are interested in “how field-level phenomena diffuse to make fields isomorphic” (Fligstein and Dauter 2007: 107). They are interested in formal and informal rules through which the actors connect in various activities. The performativists, drawing their inspiration from science studies, focus on the how the actors “link up with other actors (as well as nonhumans or collective actors) through activities” (Fourcade 2007: 1025). These are fundamentally different from the classical economic understanding of market in which market is viewed as the exchange of goods and services. The ‘social’ understanding of market emphasises on the production and the role of social relationships in the market exchanges.

The debate goes on, for the neo-classical economist market is the solution of all problems, on the other hand to the political economists especially those working in the world system tradition, market is the problem. The performativists believe the market as neither problem nor solution, as Callon (1998) conceptualised market as ‘real’. The degree agents are not villain who manipulates the legal codes and have created a grey market. Neither they are social heroes, serving the community voluntarily. The market of grey degrees is a ‘real’ market. This is a ‘perfect business’, where the law of supply and demand generate equilibrium price and competition keeps the prices standardised. Different actors have created this market through their different activities. The agents have clear role in the market but their roles are often fluid. They are the centre of ‘trust’. The market itself is always changing and often market is defined as ‘reproducible role structure’ (Fligstein and Dauter 2007).

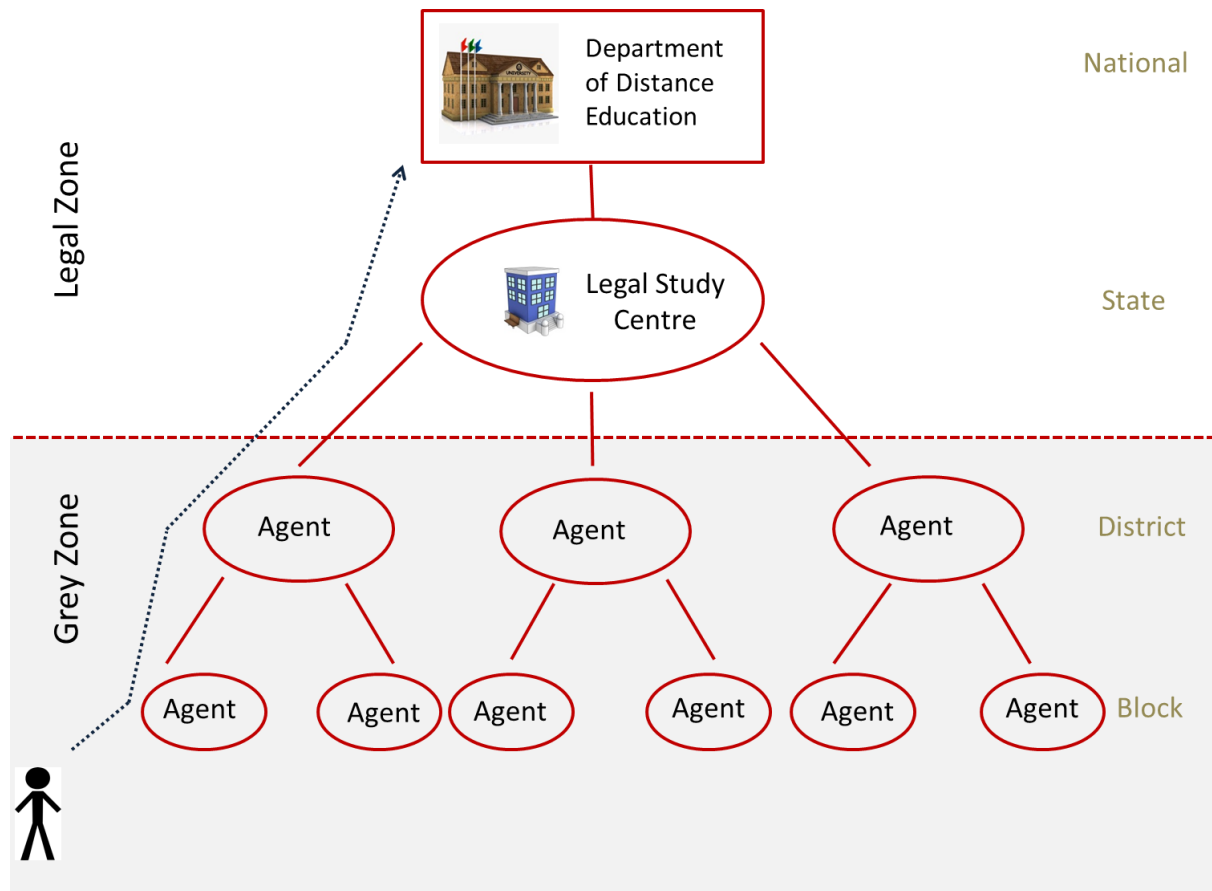
Berndt and Boeckler (2012: 205) defines marketization as the “process of designing, implementing, maintaining, and reproducing specific socio-technical agancements that embrace a calculated and monetarized exchange of goods and services”. However, we are not looking into the historical process of marketization of academic grey credentials; this is beneficial to draw some theoretical inspirations from the marketization process. Berndt and Boeckler (2012) borrow the concept of ‘agancement’ from Callon (2007) which is the “arrangements of people, things, and socio-technical devices that format products, prices, competition, places of exchange, and mechanisms of control” (Berndt and Boeckler 2012: 204). ‘Agancement’ is a French word and the closest English word probably be ‘assemblage’ or ‘arrangement’ (Callon 2007). Michel Callon, arguably the most prominent figure in the performativist circle, argues for the existence of homo-economicus but this should be seen as the relational calculative process opposed the conceptualisation of homo-economicus as fundamental human behaviour.

Three framings are necessary for the existence of market (Berndt and Boeckler 2009, 2012). Borrowed from Callon’s work Berndt and Boeckler (2009: 543) notes three framings: “the conversion of goods into commodities”, “the formatting of calculative agencies”, and, “the identification of the formative settings”.

2.2 Mechanism of the Market

We really need to understand the mechanism of the grey certificate market. As discussed above, the grey certificate market is an assemblage of various actors and networks with different motives and roles. Figure 3 depicts the mechanism of this grey market.

Figure 2: Mechanism of the Market



In most cases mechanism of the market is as follow: A university has a distance education department, which is legally entitled to provide degrees under the name of the university. They have study centres across states for state universities and they can legally open study centres across nation if the university is federally funded. The university has its legal study centre at the state capital, but they sub-contract the student enrolments to the agents sitting at the district level and they again sub-contract to the agents sitting at the block level. A student approaches

to the agent at the block level and the agent then communicate with the agent at the district level and it goes on.

The universities, in my research, are based in out of West Bengal. Local agencies at Kolkata take affiliation and become study centre. The study centres are meant to provide learning support and also conduct exams at the presence of the invigilators from the University. But in reality, they do not provide anything and most learners, who are buying or bought certificates have no idea about the real and legal study centres. These study centres sub-contract to the local agents, mostly based in the district centres. These agents are the main contact points of the students in most cases. But in some cases I found some agents at the block level, who got sub-contract from the district level agents. But this may not always be the case:

I know one instance, where the legal study centre is not even in West Bengal. It is in Visakhapatnam. So, a student in Barddhaman, who contacts me, I take all the documents and forward to Kolkata. They then forward to Visakhapatnam. So, legally the student is registered in Visakhapatnam. We arrange her exam in Kolkata or if we have sufficient number of students, then in Barddhaman. Off course exams happen only if she wants to sit in exam (Anil, Agent).

It is worth noting that the Visakhapatnam centre only has the legal right to conduct exam. This is not necessary to sit in exams. The agents manage that. But in some cases students need to sit in exam. In that case

We manage her (student's) signature much before exam in the answer sheet that we manage much before exam days. In exam days she can send anybody to sit in exam. Only requirement is that it needs to be female if the original student is female. She may wish to write something or may not. We manage a certificate (Anil, Agent).

Competition plays critical role in the functioning of this market. Competition keeps prices comparatively low, as perceived by the agents.

In this area, you can find several agents. We have very tough competition but we all have different network of sub-agents based in districts. I cannot charge very high price; the buyer would move the next one. (Partha, Agent)

This is true, I visited several 'shops' and observed that prices are standardized.

2.3 Grey Degree Certificates as Commodity

I call these 'grey' degrees as these degrees are legal but bought as opposed to earned. Simply calling these as 'bought degrees' do not capture the complexity of these degree certificates. People can buy fake degrees. But these are not fake degrees; there is no way to differentiate these degrees with authentic degrees apart from private knowledge. The public sector cannot discriminate based on these degrees and the holder of this degree can sue the public entity in case of any discrimination. I call this 'grey' as this term capture the deep complexity at the same time differentiate from 'fake' degrees.

The commodification of goods plays the central role on our framing. There is need of conversion of goods into the stable and tradable objects. The grey degree certificates are perceived as commodities but we argue that these should not be seen as perfect commodities. One of the fundamental feature of the commodity, i.e., tradability is missing here. The degree certificates carry the true identification of the buyers and for obvious reason these true identifications cannot be altered. The grey degrees cannot be exchanged. These can be bought and sold once. Once it is sold, it has no exchange value left within it. After being sold, the degree certificates carry only tangible economic and symbolic value to the buyers. The transformation of goods into commodities requires “substantially altering *established concept of “belonging”*, including considerable “investments” in codified rules and law” (Berndt and Boeckler 2012: 208, emphasis added). There is additional requirement of value addition to the grey degrees, which are not earned but bought. The actors do this by adding tangible economic and symbolic value.

As I find, these credentials, no doubt, have economic value to the buyers. Buyers often buy these grey degrees to show their higher education, which in turn they believe effect their perceived future income. As one of the buyers said in the job market “experience matters most. But it is always good to have a degree certificate” (Soham, Buyer). Buyers often think these credentials as economic commodity. These can help them in job promotion, changing jobs, opening new consultancy business etc. Take the example of B.Ed (Bachelor of Education) degrees. In West-Bengal there is huge shortage of B.Ed college seats. But traditionally in West Bengal, teaching in secondary schools is very lucrative, both economically and socially. Having B.Ed was always advantageous in entry to the teaching profession and they are paid higher. But recently, the supreme court makes having B.Ed compulsory for entry to the teaching profession.

B.Ed is a huge business and as of now this is the largest business. Students cannot get admission in the colleges have no option but to consult us. We have arrangement with colleges in other states. They do no need to attend classes, but they require to travel to the college and sit in exams (Partha, Agent).

B.Ed has the largest economic value in terms of grey degrees as perceived by both the agents and buyers. On average, a B.Ed grey degree cost around Rs. 70,000. The procedure is little different for B.Ed than for other degrees discussed earlier. These B.Ed degrees are grey not because they do not sit in exams but because they are enrolled in full-time study but they are not required to attend classes as the agents arrange that. Agents have contact with local private schools and these private schools certify for some money that the student has undergone mandatory practical training in their schools.

These credentials also have symbolic values. The idea of symbolic capital can be attributed to Pierre Bourdieu (1977). The symbolic capital is conceptualized as a capital which has symbolic function and symbolic capital “increases the family’s social standing by displaying the quality of its goods, which is in turn linked to the attributes of its members” (BliegeBird and Smith 2005:223). The symbolic capital generates as David Moose (1997)

rightly pointed out ‘domains of influence’. Credentials here are cultural objects, symbolise symbolic capital.

I met Amit in his office, if it can be said office, of this family business. He is involved in his family business, which works as middleman to the framers and whole-sellers of potato. He grew up in a middle class neighbourhood with three sisters and his family lacked, as he told me, a good environment to study. He finished his secondary (class 10th) but much longer time than his peers. After secondary education he took admission in higher secondary (12th), but could not finish. He tried for public sector job. In India, the public sectors jobs are regarded the dream jobs and most sought after (Anjaria 2006). “Nothing was happening. I tried but always failed”. What I understand ‘failure’ is embedded into his psyche. “I tried, but could not pass higher secondary. All my friends, quite easily, passed higher secondary exam”. After some time, he decided to buy a higher secondary diploma. He paid around, he recollects, around Rs. 17,000. He was impressed by the service of the agent and later bought another BA (Hons) degree in Political Science with another Rs. 18,000. “Now, I say I am a graduate and I say I did it from Calcutta University” (Interview 21st July). University of Calcutta is a prestigious university with high status in society. Amit is not the only one, but he is a typical case of ‘failure’ perception, who bought degree certificates. Although, very few of the participants bought secondary or higher secondary diplomas, most of them have bought or are buying graduation or post-graduation degrees.

Amit’s perception of enhanced social status makes complete sense to him to invest for certificates and these certificates signal the enhanced social status. Amit mentioned “I feel confident now, that I am not inferior to my friends”. The perception of capability or successful need to be material. It is often argued that the idea of educated person is socially and culturally produced (Cook-Gumperz 2006, Levinson et al. 1996). As Levinson and Holland (1996: 1) notes that “on a more personal level, subjection to the school’s ministrations can yield a sense of self as knowledgeable, as “somebody”, but it may also encourage a sense of self as failure”. Amit’s perception of somebody now is deeply embedded into the socio-economic and cultural sphere in which he is posited. Amit’s position is simple; bought certificates fulfilled his need of ‘status’ and something which cover-up his ‘failure’.

Marriage market plays a critical role here. Degree credentials signal the quality of the prospective bride but also of the groom. Marriage market in the Indian society is complicated and economists often conceptualise marriage as yet another market (Banerjee et al. 2013). Prevalence of ‘arranged marriage’ system makes the educational signals indispensable. For groom there is the added stipulation of masculinity.

What my family would say to my prospective parent-in-laws? This is totally unacceptable that my bride has higher educational qualification than me. My family asks for an educated bride, but for that they also need to show that groom has the sufficient qualification (Amit, Buyer).

Marriage, as an institution, interact with the market of grey degrees and actor’s engagement with marriage market and grey degree markets are sometimes overlap with each

other. Fligstein and Dauter (2007: 115) note that the “products are cultural objects imbued with meaning based on shared understandings and are themselves symbols or representations of these meanings”. The commodity is created out of social trust and trusts are created through social networks.

People are afraid to buy these certificates. They know they are not earning through right procedure. We need to create sufficient trust. In this market, the relationship between buyers and sellers are very personal (Anil, Agent).

“We keep in touch with our buyers. They are the source of our authenticity” (Partha, Interview). These buyers create a dense social network and the agents add the new buyers in this network. ‘Trust’ flows in the network. They understand the vulnerability of the network as can be assumed that the network cannot be expected to be sufficiently strong and the buyers once receive the certificate cannot be expected to have sufficient interest in the network.

Sumitra’s husband contacted one of his ‘educated’ extended family member for an authentic agent. The extended family member knew one of his friends, who bought a grey degree. He contacted that friend and made connection Sumitra’s husband with an agent. Anil, that agent, told me the story. Most buyers come through network. The market functions through the guise of different social relations; trust, friendship and dependence. For market to function “both buyers and sellers have faith that they will not be cheated. Such faith often implies informal (i.e., personal knowledge of the buyer or seller) and formal mechanisms (i.e., law) that govern exchange” (Fligstein and Dauter 2007: 113).

2.4 The Calculative Agents

The second framing of marketization process is attributed to the formation of the calculative agents. The rational agents who are able to calculate is fundamental to the process of marketization. Idea of calculative agents is far more complex, ‘infinitely’ more complex, than the economics tend to believe (Callon and Muniesa, 2005). The ‘pure’ calculability of economic agents in the economics has its own limitations. But what we mean by a calculative agent? Callon and Muniesa (2005: 1231) note that “calculation starts by establishing distinctions between things or states of the world, and by imagining and estimating courses of action associated with those things or with those states as well as their consequences” and they add further that this position “usefully blurs the boundary between pure judgement and pure calculation”. This proposition goes far away from the economists’ understanding of ‘pure’ calculative agent. So, the homo-economicus exist, but not as a fundamental human behaviour but far more than that in this anthropological understanding of market. To fulfil the marketization process, the calculative agents should be equipped with tools so that they can value objectified goods.

To illustrate further, meet Dipayan. Dipayan is from a well-to-do middleclass family. He did his graduation in Commerce and currently working in a ‘good’ job. He did his graduation from a ‘good’ college in Kolkata and it was not difficult to get a job. He is posted at the regulatory affairs department of the company. He found his job interesting. But after some time he found that he can start his own consultancy later in his life. In his own word:

I learned a lot while working at the regulatory affair. I'm much converse of law now. I'm planning to start my own consultancy firm in near future. My experience should be helping me a lot (Dipayan, Buyer).

But experience is just one thing. With his graduation in commerce he cannot appear or represent his clients in the court of law. He needs to have a law degree. In India law education through distance education is not legal and Bar Council of India does not recognise law education through distance mode. The structural barrier compelled him to buy a LLB degree.

I want to study and get the degree. But I cannot commit three-year full time study now. Distance education is not legal. I decided to buy a LLB. I have to sit in exam but I can take help of books, my agent arranges that (Dipayan, Buyer).

He is spending around RS. 60,000 as fees for the degree certificate. I accompanied him to his agent and surprised to see that substantial number of people taking this path and their stories are similar. Dipayan's perceived benefit of a LLB far exceeds his perceived cost. This is a rational decision. His perception of opportunity cost of three-year full time commitment exceeds perceived benefit of full-time LLB.

I need a LLB, so that I can represent my client in the court. It does not matter if I am pursuing this from a reputed university or not. I have experience and hopefully, when I start my consultancy I would already have some client base (Dipayan, Buyer).

Dipayan's case depict centrality of economic rationality in buying decision which is apparent also in the case of Amita.

Amita's case is interesting as it depicts how the calculative agency interact within the structural barriers to higher education. Amita is preparing to sit in examinations for public sector jobs. The public sector jobs or *sarkari naukri*, are the most sought after jobs in most developing countries. Amita is no different. She is from a middle class family living in a suburb. Amita did her graduation in Economics honours with minors in mathematics and statistics. But she could not keep the honours title. She needed at least 40% grades to keep the honours. She could not but passed the graduation with three pass subjects, i.e., economics, mathematics and statistics. She could not get admission at the post-graduation level. "There is fierce competition for post-graduation study. In our system, universities do not give admission to those who do not have honours". But post-graduation is often required for many public jobs and even if it is not requirement, having a post-graduation is often helpful in interview. Then she decided to pursue post-graduation:

I was preparing for public job and was taking private coaching for preparation. Then, I thought why not pursue a Master degree? I cannot get admission fulltime in any university. I had only option of distance education (Amita, Buyer).

But value of degree through distance education is not perceived as effective as full time degrees. To avoid study, she bought a post-graduation certificate in mathematics:

If I have option of only distance education, why should I study? It is much better to buy a degree. Everybody is doing this, you know (Amita, Buyer).

In post-colonial countries, academic hierarchy of subjects are well-known, where science subjects are much valued than the arts and social science subjects. This is clear to Amita:

If I need to buy a degree certificate, why should I buy a certificate in economics? Mathematics has prestige. This is a science subject and has much more value in society. I can proudly say I am a post-graduate in mathematics (Amita, Buyer).

She perceived that a post-graduation certificate is economically valuable and perceived benefit is much higher. She paid just Rs. 22,000 for the certificate and believes that if she manages a public job with post-graduation requirement this would be less than her half-month salary. It would not be an exaggeration to claim the economic motive behind Amita's decision to buy a certificate and which is much fuelled with systematic failure of Indian tertiary education system.

Economic understanding of 'pure' rational calculable agent gives theoretical inspiration to the human capital approach. Economists believe that the rational human being is able to perceive the expected cost and benefit of education and maximise utility. Education is a rational decision. Human Capital Approach (Becker 1985, Grossman 2000, Mincer and Polachek 1974), developed by the late Chicago economist, Gary Becker, is the one of the most influential approach to understand education and more importantly investment in education within the policy circle. Education is a private decision to invest in human capital. Everyone has separate return to the education. According to this approach education is "relevant in so far as education creates skills and helps to acquire knowledge that serves as an investment in the productivity of the human being as an *economic production factor*, that is, as a worker" (Robeyns 2006: 72, emphasis added). Human capital theory relies excessively on economic determinism. But the calculative agent has far more complex calculation than the rational human capital theory suggests. Dipayan and Amita's case and also cases described later emphasise this point. The Marxist criticism is worth to note here. The Marxist approach criticises human capital theory by arguing that that "labor is not a commodity, but rather an active agent whose efforts on behalf of its own objectives must be channeled, thwarted, or used to generate profits" (Bowles and Gintis 1975: 76).

2.4.1 Social Dimension of Calculative Agents

As I argued before, the homo-economicus exist but not as a fundamental human behaviour, but as a calculative agent deeply embedded in social life. The 'social' makes calculation often complex. To illustrate further, Sumitra's case is interesting. Sumitra was married at the age of nineteen in a nearby village. Her marital family is politically active. She had to leave schooling after higher secondary because of marriage, as she said. Her husband was the local coordinator of MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) programme. But, in 2011 the political landscape changed and the opposition party took over the power after thirty-four-year rule of left-front government. He lost job. But recently her husband made a political arrangement and bribed a leader of the ruling party for a

job for Sumitra. Public sector jobs are most lucrative in India and corruption is wide-spread. 'Jugaad', or 'arrangement', is part of everyday narrative in India (Jauregui 2014). But she needed graduation certificate. "I had no other option. One of my cousins told me that I can buy a degree certificate". She bought a BA (Hons) in History certificate from Anil at Rs. 19,000. "It was very good experience. I did nothing. I signed in the admission form in July and got my certificate in September". But what constitute this decision to buy a degree certificate? Sumitra's case is not unique; I found similar case with many housewives. "I wanted to study, but after marriage I just do not have enough time to study. I am a proud mother; I cannot even think of studying". Young ladies married at a very young age, fall into motherhood at the young age, paying 'reproductive tax' (Harcourt 2009, Palmer 1991) that make them unable to continue or pursue study.

Social reproduction and unpaid care work by women does not find its place in national income accounting (Elson and Cagatay 2000). The reproductive work carried out by women are not recognised in policy circle and often not recognised within the household economy. Reproductive cost, pioneered by Ingrid Palmer (1991), encompasses this idea of unpaid work like a tax levied on domestic economy in order to reproduce the economy. The 'reproductive tax' is a tax "that women must pay before they can devote time to income-generating work" (Elson 1993: 242). The social construction of gender, brands the gender roles naturalised in a way that the women are supposed to carry out these unpaid works. There is substantial empirical evidence to show the significant gender differences in unpaid domestic and caring work. In general women spend more time on unpaid work but the time of crisis the unpaid work carried out by women increases considerably (Razavi 2007). As this this apparent from the words of Sumitra:

I need to take care for my baby, cook, collect water and take care of my parent-in-law. Sometimes I need to collect ration². I simply do not have time for study. The duty of a married woman is to take care of her household. If I start studying, who will take care of my household. (Sumitra, Buyer).

This is also important to note the contradiction here. A proud mother and housewife has many burdens when it comes to full time study, but the same household buy her an educational credential, which may get her into full time job. This is an interesting engagement of calculative agent in creating calculating agency. The monetary award of 'public' job is indispensable for reproduction. Social reproduction "encompasses that broad range of practices and social relations that maintain and reproduce particular relations of production along with the material social grounds in which they take place" (Katz 2004: X). The social system is so rigid that I had to accompany one female friend to the interview. Sumitra's mother-in-law was always present while interviewing. When we asked whether she ever planned to join college full time after her marriage, it was deep silence. But when it comes to the 'public' job it is different. Sumitra is convinced with her destiny. Her maternal family is very poor. She beliefs she is getting more than she deserved.

2.4.2 Social Acceleration and the Calculative Agents

The reckless world compelled the young students to join the labour market as soon as possible. This is particularly true for those who come from bottom of the pyramid. In developing countries these trends are likely to be more chronic than the economically developed world. Soham is now working in a call centre in Kolkata. He is far away from his native place. After the higher secondary examination, he came to Kolkata to study at the degree level. He did not get his desired subject to study. "I got chance in a college with Sanskrit honours. What can I do with a degree in Sanskrit? This has no relevance to job market and I had no plan to go for higher study". He started working at the call centre while studying. "I left college. I decided not to continue full time college and concentrate fully on job". After some times he decided to pursue a degree through distance education system.

I enrolled in IGNOU, but could not finish. It was lot of work. I had to write assignments and then give exams. Most importantly it required serious study and I did not have enough time. I had to work in night shift most of the time. Simply this was not working (Soham, Buyer).

But he perceived that a degree certificate is necessary and he has not enough time to pursue a degree certificate. Then he decided to buy a degree certificate.

I want to borrow here the concept of social acceleration, which is a compulsion to increase the speed of circulation. 'Speed' is the central terrain of this, not the secular trend but constant demand for exponential growth (virilio and Polizzotti 2006). As a consequence, all spheres of human life, comes under enormous competition, enormous threat and constant tension of staying ahead of the trend. With the endless utterance of the narrative that "everything conceivable must be done to boost economic growth" (Rosa 2009: 77), the acceleration process plunges subjects into relentless daily struggle in the economic sphere. As Rosa (2009: 90) ascertains "we can no longer afford to wait to send our children to school until they are six or to leave them in school for thirteen years (as was the norm in Germany until quite recently)". These two forces of dynamisation i.e. principle of growth and principle of acceleration are in endless interplay and, indeed, Rosa (2009:77) correctly identifies that "economic growth and social acceleration are tightly interwoven in a reciprocal logic of escalation". This acceleration process accompanied with the process of *Landnahme*, i.e. "capitalism turns out to be, as it were, a 'greedy engine of incorporation and discharge'" (Dörre et al. 2009: 241). The logic of social acceleration is not to reduce the autonomy at the face value but "it employs governance via fixed terms and deadlines, via appointments and filing deadlines, and especially through increasingly unbridled competition (not only for jobs, money and positions, but also for respect, friends and acquaintances, fitness and beauty), in which competitors 'never sleep', thereby forcing us to invest more and more time and energy in the maintenance of our competitiveness without being able or even willing to ask ourselves what our quest in life should be, what goal(s) in life we should pursue beyond economic competition and struggle for existence" (Rosa 2009: 91). Acceleration plays important role in determining the buying decision of the degree certificate buyers. The dynamisation process has left little time and energy to pursue full time study. This can be one of the central determinants to buying decision. This is apparent from the word of Soham:

In this fast and competitive world who can afford a full time study! I run constantly. How can I stay quite a bit and study? (Soham, Buyer)

Employers rarely invest for skill training particularly of those who are working at the bottom of the hierarchy. People like Soham never expects study leave to study full time:

Forget about study leave. If you ask for leave of more than seven days, they will throw you out. Most of us are not in the payroll of the parent company but working at the sub-sub contract level (Soham, Buyer).

But do they see any value addition with the bought degree? One thing I found from most the participants that they are not expecting new job with the bought certificate. For Soham:

If I want to change my company, quite often they ask for graduation. In most cases they do not care from where I got my degree. Experience matters most. But it is always good to have a degree certificate (Soham, Buyer).

To illustrate further, let us delve on the case of Wasim. Wasim is employed in a public sector undertaking. This is relatively well-paid, stable job which carries lot of social prestige in his community, especially when muslims are disproportionately represented in the public sector jobs. He told his story: “After my graduation in Physics, I prepared long time for a job in the public sector. It was difficult time, as you know there are huge competition for the public jobs. I took private coaching. In our community, we are supposed to marry early. This put lot of pressure on me. I needed immediate job and thanks to God, I managed it”. He got married. After some times he found that he is lacking behind his colleagues:

At first, it was good. But after some time I found that most of my colleagues have post-graduation. I found myself inferior to them, but most of them also behave in a way that I'm inferior to them. At my level of job, a post-graduation is not a requirement. But it is socially required. I got this impression that I need more education for better communication with my colleague (Wasim, Buyer).

He continuously fears of lagging behind his colleague and also from the new generation.

You see this new generation. They all have higher education than me. I feel I'm lagging behind them. All the time, new cohort in our office has much higher education than me and they are smarter than us (Wasim, Buyer).

But social acceleration and time poverty compelled his to buy a post-graduation degree:

In our community we are married early and we become parent early. I have no time to go for further study neither I have mental energy to do that. I already have a job and I am not going to use my new post-graduation for new job. I need a certificate, a piece of paper, so that I can feel equal with my colleague and not far behind from younger generation (Wasim, Buyer).

He bought a MA in History with RS. 22,000. I accompanied him to the degree agent, the day when he was getting his degree certificate. I wondered why a MA in History and not in Mathematics! His response was critical:

My agent said that, for a MSc in Mathematics I need to wait for two years to get the certificate. But here I paid money on April this year and now I am getting the certificate. It was not possible to wait further and why should I wait when I am getting the certificate now! I just need a post-graduation certificate (Wasim, Buyer).

This contradicts the case of Amita. Amita bought a MSc in Mathematics certificate emphasizing the academic hierarchy. But here, Wasim is buying a certificate in History, contradicting the academic hierarchy. The academic hierarchy of various disciplines are situated in particular context and social acceleration can break the academic hierarchy. In that sense, social acceleration reproduces the calculating agents with different calculating frames.

2.5 Technological Embeddedness of Formative Setting

To function a performative market, the format settings are quite important and there are often necessities to innovate. Old formats can be rather obsolete for new kind of market and new kind of calculative agents. The formative setting is a crucial place where the market model and practices cannot be separated. Formative settings are the medium in which goods and agencies encounter with each other. As Berndt and Boeckler (2012: 208) notes that “Encounters of goods and agencies also have to be framed and formatted, to achieve the qualification of objectified commodities (first framing) by calculating agencies (second framing)”.

To function the grey academic certificate market, the actors created innovative format setting. Traditionally, the student need to attend the exams physically, be it in full time study or distance education study. It is worth to note here that Indian universities lack virtual infrastructure. But, one university, from which grey degrees can be bought, does an innovative thing. Once a student get admission, they provide a smart card with password. When student registers for the examination, they get another one, which works as admission ticket. They can write their paper from anywhere online, by putting the smart card identification number and password. There is no way to check who is actually writing the paper. This is quite innovative in Indian standard. What happens in practice, the degree agents keep the admission ticket and arrange a person who write the paper for the student, obviously for some extra cash.

The market quite truly understands the obsolete nature of old settings. They actors innovate new ways of transaction. Technology plays very important role.

The task is very difficult. When a student needs a certificate immediately, we need to work hard. We need to show that the student had registered three years back, if it is a three-year degree. The university officials put their registration in old documents to show that they student had registered earlier (Partha, Agent).

As Berndt and Boeckler (2012: 209) have rightly observed that “a market is a bundle of practices (structured spatial and temporal manifolds of action) and material arrangements

(assemblages of material objects, persons, artefacts, organisms and things)”. Innovative format setting facilitate this interplay.

2.6 Discussion

The multiplicity of calculative agencies and the performative nature of the market intertwined the various dimensions of the grey academic degree market in India. Agents, together with buyers, make and evolve the market. I find the complexity of the nature of the market and numerous ways the buyers integrate grey degrees as commodities in their life goal. Economics is there, but embedded in social life. I find how the calculative capacities and dimensions adapt amidst social acceleration. Gender is important here, social reproduction leaves little opportunity for women to pursue their life goal, especially where the participants pay huge reproductive tax. The heterogeneity generates further questions. The economic dimension is undeniable in spite of our acceptance of more complex calculative agents. The one sided story of economic motivation of buying grey degree certificates should be coupled with explanations from employers’ side to get the complete picture. The qualitative research exercise uncovered the perceived economic benefits of buying grey certificates from the buyers’ perspective but it cannot uncover the employability or value of these credentials in reality. We need further enquiry.

Chapter 3: Economic Dimension of the Grey Market

3.1 Experimental Study

The grey degree certificate market is a complex assemblage of different actors. The grey degree certificates are bought for various reasons by different participants, but what is apparent from our qualitative study is that economic motivation is one of the crucial reasons if not the primary one. The calculative agents make calculation and continuously update their calculation in the course of their engagement with the market. Now let us zoom into the economic dimension of the market and ask if these grey certificates have any economic benefit in the job market. Are the buyers economically rational? Do economic returns compensate the economic costs of these degrees? Do the employers perceive credentials bought in grey market and if they place similar values to these certificates same as authentic certificates? To answer the questions, I propose a field experiment based on the long tradition field experiments primarily used in labour discrimination literature.

I use the methodology that are primarily used for research related to labour market discrimination (Bertrand and Mullainathan 2004, Carlsson and Rooth 2007, Correll and Benard 2007, Kaas and Manger 2012, Pager et al. 2009) and also in credit and housing market (Pager and Shepherd 2008). The experiments vary in terms of objectives and also focus areas. For example, in a similar field experiment, Kaas and Manger (2012) found substantial differences in callback rates between German names and Turkish names in Germany. Similarly, Carlsson and Rooth (2007) found significant differences in callbacks between Swedish and Middle-Eastern names in Sweden and Swedish names got 50 percent more callback. Whereas the study by Pager et al. (2009) conducted in New York city was focused on low-wage market and found significant racial differences in callback. Interestingly, White applicants, who are just released from prison did no worse than Black and Latino applicants with clean background. I draw my motivation from the explanatory power of field experiment. Another possibility is to conduct audit study (Altonji and Blank 1999, Heckman and Siegelman 1993). In these audit studies researchers send real persons with fictitious identities to the employers. This is different from field experiments in senses that in experimental studies there is no need of physical appearances. But in-person audit studies are expensive and time consuming and full control is not possible. Employers also judge physical appearances with educational qualifications while physical interviews.

To develop the economic understanding of the phenomenon, I look into the literature on fake degrees. Although phenomenon of grey credentials is inherently different from the phenomenon of fake credentials, which is well-researched; we can borrow some insights from the literature on fake degrees. There is mounting literature on fake degrees (Attewell and Domina 2011, Brown 2006, Grolleau et al. 2008). Attewell and Domina (2011) used the theory of 'innovative deviance' to explain the phenomenon of fake degrees. This implies according to

the authors that “those who are blocked from attaining degrees through normal means are those most likely to employ false credentials” (ibid: 59). Grolleau et al. (2008) have developed an economic model to explain the phenomenon of fake degrees. They borrow three economic drivers, i.e., signalling, human capital and delivery status to explain the phenomena of fake degrees (ibid). This is important here. In this framework if the employers identify that the job seeker has bought degree because of structural reason, she may not discriminate the job seeker based on credentials. This may go contrary to the signalling hypothesis.

In this experimental study, I send 396 applications to 132 job applications and note callback rates. I choose three broad sectors, which require no specific skill training or at least those skills can be easily learned through learning by doing for our study. Each job applications receives three resumes, one with a graduation degree from a university from where the degrees can be bought, another resume with a graduation degree from an authentic university from where it is not possible to buy credentials and third one with no graduation degree which reports only 12th qualification. I identified the universities from where degrees can be bought through our qualitative research work. I use three universities from where degrees can be bought and randomize our resumes to the job applications.

Experimental result suggests the impact of grey credentials on the employability at the labour market. On average grey degrees receive 8.33% more callbacks than having no graduation degree certificates. This is statistically significant. However, grey degrees receive on average 13.67% less callback than the callbacks attributed to the authentic credentials and this is also statistically significant. Callback rates vary largely across the sectors and gender, but I observe similar pattern across sector and gender. The remainder of this chapter is structured as follows. Section 2 presents testable hypothesis of this field experiment. In section 3 I elaborate theoretical background and develop a simple model to guide experiment. Section 4 explains methodology and includes a discussion on ethical considerations. Section 5 presents the results of the exercise. In section 6 I discuss experimental results and interpretation of results.

3.2 Testable Hypotheses

I test following hypotheses:

Hypothesis 1: Grey credentials have no impact on the employability of the participants. So, grey credentials have no impact over those who have no credentials.

Hypothesis 2: Authentic degrees have significant impact over the bought degrees and also over those lacking graduation degree credentials.

Hypothesis 3: The overall pattern of impact is consistent across gender and across sectors.

3.3 Theoretical Model

The theoretical basis of this field study lies on the literature on the education as signalling game. Education decision as signalling game (Altonji and Pierret 1998, Harmon and Oosterbeek 2003) is the one of the most influential approaches to understand education and

more importantly investment in education within the policy circle. In this framework education is understood as ‘signal’ to the potential information asymmetry in the market (Akerlof 1976). There is demand of jobs, but the employer cannot observe intrinsically the potential skill of the job-seekers and education plays the role of ‘signal’ here, which give a ‘proxy’, or in more economic sense, ‘revealed’ the potential of the applicants. The seekers of skills pursue education until a point where marginal benefit equals to marginal cost. The rational actors are able to perceive the expected benefits and costs, which includes opportunity cost. Here, education solves the potential demand supply mismatch. So, education has the capability to resolve market failure. Andrew Weiss (1995: 133-134) notes:

Students will choose a length of schooling to "signal" their ability to employers, and employers will demand a minimum level of schooling from applicants in order to "screen" their workers. Both signalling and screening serve to "sort" workers according to their unobserved abilities.

But if there is no sufficient signal, the labour market may end up in a sub-optimal equilibrium or in multiple equilibria with low level trap. But the story can be different if employers cannot identify the grey degrees.

To see how a rational employer can end up in a suboptimal equilibrium, let us consider a simple model. The existence of suboptimal equilibria under the presence of noisy signals are well debated in the literature (Baliga and Sjöström 2004, Bikhchandani et al. 1998, Knowles and Persico 2001, Persico 2002). In many discrimination models, e.g., in Coate and Loury (1993), employers’ prior belief of the probability of getting a noisy signal from actually qualified applicants play important role. If the employer has liberal belief, then she prefers to give callback after the noisy signal, but if she has conservative belief, she is more likely to ignore the CV after the noisy signal. The existence of multiple equilibria generates the sub-optimal solutions.

3.4 Experimental Design

The experiment was conducted between July 2016 to September 2016. This choice of field experiment is guided by the unavailability of secondary data. Data unavailability makes it impossible to test the research question empirically. In social science research the main challenge can be credited to the problem of unobserved variables. Differences in degree qualities is just one possible explanation and another is the unobserved characteristics. The rational actor must perceive the true return of this degree certificates in a complete and perfect market. We assume differences in attributes unobservable to the researchers can be observed by the employers. I use multiple channels to collect data. In total I send 396 applications to 132 employers. Each job profile receives three applications. I prepare a databank of profiles. I alternate profiles on the basis of control and treatments. Grey and authentic credentials are treated as treatment arms and having no graduation credential is treated as control.

3.4.1. Choosing the Vacancies and Occupations

The experiment focuses on the entry level jobs which do not require much skill training. To get feasible and practical requirements it is necessary to choose job titles which are mainly targeted to the relatively low skilled employers compared to the white collar jobs and also those sectors which have high demand. The selected occupations are sales with particular focus on insurance and personal loan sales jobs, administrative support, clerical support, call centre and medical representative. Some jobs are gender sensitive, e.g., the administrative jobs are dominated by females, medical representative by males but call centre jobs are mixed. I use three largest job portals in India: naukri.com, monster.com and timesjob.com. I apply most of the jobs at naukri.com. I take into account that I do not apply to the same job posted by the same employer at different job portals. These job portals ask the applicants to create profile and apply to the advertised jobs. There are also possibilities to include resumes and I add resumes of all the applicants. Employers also can send e-mail to applicants through the job portals. I apply to only jobs based in Kolkata and in some cases in some district towns within the state of West Bengal. I intentionally avoided those jobs which ask the applicants to relocate. In all the vacancies, it is clearly mentioned that fresher can apply with also option for the experienced applicants.

3.4.2. Construction of job applicants

At first step I design our resumes. To get the realistic applicants, I reviewed some typical resumes that I collected from a HR consultancy firm and I formatted our resumes accordingly. This process is important as it standardises resumes. The resumes I collected has Pan-India coverage. These applicants applied to the actual jobs. Unlike study by Bertrand and Mullainathan (2004) I standardise artificial resumes by level of other skills and experiences. Applicants have no relevant experiences. Next stage is to name the artificial resumes. Discrimination by caste, gender and ethnicities is well researched and documented in literature (Carlsson and Rooth 2007, Pager et al. 2009). In most research it is found that employers identify caste, religion and ethnicity by names of the job applicants and discriminate (Banerjee and Knight 1985, Deshpande 2011). To deal with this problem I use upper caste Hindu names. India is a large country with multiple states and there exist prejudice against people belong to some states. I use only Bengali names in our artificial resumes. I assign phone numbers and also e-mail ids to all the applicants. In mixed-sex occupations, male and female names are chosen at random.

3.4.3. Incorporating diplomas

I identified several universities from where the degree certificates can be bought. I use three most popular universities from which a degree certificate can be bought in this study. These universities need not be popular to the buyers but popular to the agents. I rank three universities by the ease of buying grey degrees to tackle attribution problem. So, it is easiest to buy a grey degree from the lowest ranked university. I also identify three colleges from which one can get only authentic degrees.

I also identify analogous schools from where secondary and higher secondary qualifications are earned. This is typical that students earn secondary and higher secondary

qualifications from the same schools; so, I keep same school for secondary and higher secondary qualifications. In rural and semi-urban Indian context students typically attend nearby schools of their residential area, so I linked every schools with a residential address. Then I randomize schools with the profiles.

In post-colonial countries hierarchy of academic disciplines are well known, some subjects are often valued higher than others. To standardise resumes I use two comparable academic discipline, i.e., history and political science, that I found comparable from my qualitative work.

3.4.4. Recording Responses

Responses by the employers to the fictitious resumes are measured through multiple channel. Every resume is linked with separate e-mail and mobile phone number. I avoid any job where applicants need to call and walk-in interview jobs. To make realistic resumes I place authentic residential addresses in all the resumes. Residential neighbourhood is one of the determinants of labour market discrimination. Bertrand and Mullainathan (2004) found that applicants from dominantly black neighbourhood receive less callback than the applicants from the white neighbourhood in US. To circumvent the neighbourhood based discrimination I use residential addresses from semi-urban areas in West Bengal dominated by Hindus. Because of fictitious nature of the applicants, in spite of authentic postal addresses, I cannot measure attempt by employers to contact applicants through postal mail.

3.4.5. Application

For each job, I send three resumes, one with higher secondary qualification, one with a degree certificate from a university from where degrees can be bought and another one with a degree certificate from a comparable college. For each job I use three different CV formats. Formats are chosen at random for each application and given name and graduation degree certificates or given no graduation degree certificate.

In total, I prepare eighteen CVs: nine male CVs with three different names and each with three different types and nine female CVs with three different names with three different types. Each CV, attributed to a particular fictitious identity, has three versions in three different formats; one with a grey graduation degree, one with an authentic graduation degree and another with no graduation degree certificate.

I randomly assign job applications with the formats fictitious CVs. Each job application gets three CVs of with three different credentials, but which application to get which format of the CV is randomly assigned. So, each application receives three different CVs with three different types and these are different types.

In conclusion I randomize our participants at five levels. At the *first* level of randomization I randomly assign school names to the factious identities and these school names are tied with residential addresses. Then I assign randomly particular formats to particular identities at the *second* level. These are separately done for male and female CVs. So, every format is assigned to two CVs, one male another female CV. I do not send male and female

CVs at the same time to any job application, so there is no overlapping. At the *third* level, I randomly assign job applications in mixed sex sector on the basis of gender. Then I randomly allocate graduation university names at the *fourth* level. Every CV gets one grey degree and one authentic degree in two different formats, but which CV gets which university and college is randomly allocated. At the *fifth* level, I randomly assign CVs on control and treatments.

3.4.6. Ethical Considerations

Field experiments are now a widely used research technique. These experiments are becoming increasingly popular, primarily in Economics (Harrison and List 2004, Levitt and List 2007) but also in many other disciplines including but not limited to Political Science (Butler and Broockman 2011, Gerber and Green 2000) and Sociology (Pager 2007, Pager and Shepherd 2008). The ethical issues of experiments are also debated in the literature (Desposato 2014). As far as of my knowledge there is no literature on field experiments on my research question, I discuss ethical issues. I claim that I ensure minimal risk of our participants while designing and conducting our research. The principle ethical aim of any research is ‘do no harm’ or ‘as little harm as possible’. I perceive at least three ethical issues.

First, I try to minimize the burden of time of the employers that I impose on them by sending them fictitious CVs. I try to keep our CVs simple and I keep these only one-page long. This should not have incurred much time. In this study, each employer receives only three CVs. Any big employer, who are working in these field, i.e., call centre jobs and sales jobs, probably review much more CVs on daily basis. The cost associated with the review time is miniscule. But on the other hand, benefit of this research is enormous, particularly to the business community. In this research, I find that grey degrees are performing better than having no degrees. So, eventually the employer would hire an employee with a grey degree and may ignore those who cannot afford to buy a grey credential. The employee, who the firm hired, is way better than those who lack grey degree.

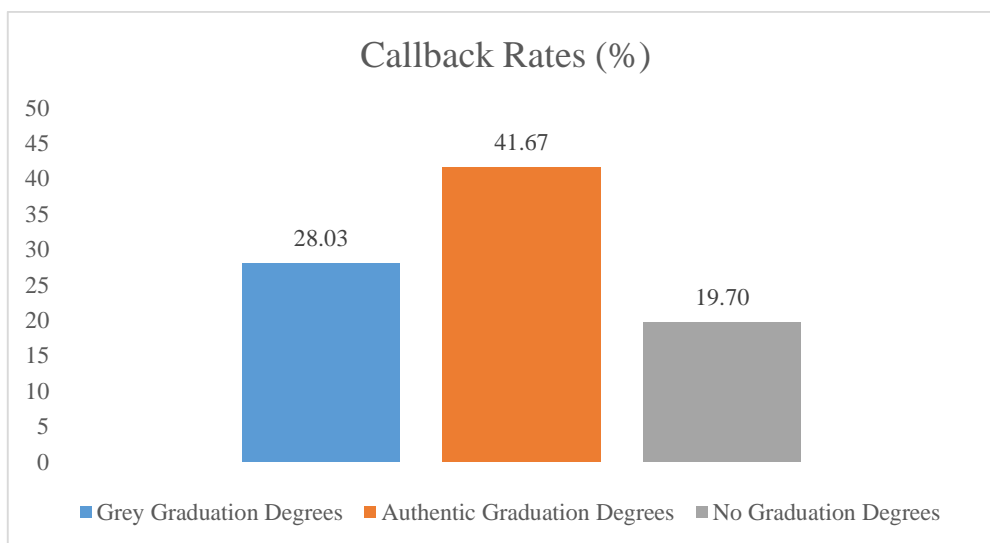
Second, I use fictitious CVs for this research. I am involved in some kind of deception to the employers. But the use of fictitious CVs is central to the field experiments, which gives absolute control. As Butler and Broockman (2011: 468) notes “While some deception was thus necessary for the completion of this particular experiment, we believe that researchers should employ deception with great care and attempt to minimize its use”. I take care to minimize the deception. My challenge is to design fictitious CVs, which looks like real but at the same time keeping the deception minimal.

Third, the names of the universities, I identified through the qualitative exercise, which I use in our factious CVs may find this research harmful to them. But, in our CVs we nowhere mention that a particular identity has bought an academic credential. I rely solely on the employers’ knowledge and this is also one of the research purposes to identify if the employers can identify fictitious credentials. I also disclose the names of those universities nowhere.

3.5 Experimental Results

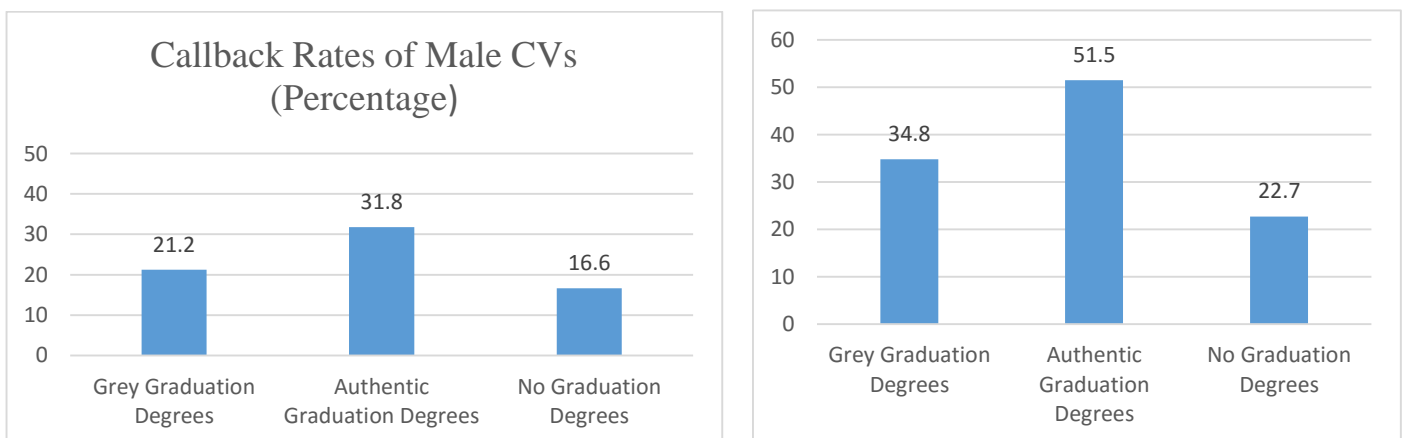
There are impacts of grey degrees on callback rates. I find significant impact of grey degrees on callback rates over having no graduation degree credential. However, the impact is not significant across sectors and gender. I find differences in callback rates across sector and these callback rates are also varying across gender. Our result suggests that there is significant impact of authentic degree certificates over having no degree certificate but the impact of grey certificates over having no certificates is not black and white. Both grey and authentic degree certificates have substantial impact over no certificate to females, but for male CVs this differs across sectors. Figure 4 depicts the differences in callback of credentials having grey graduation degree, authentic degree and no graduation degree.

Figure 3: Average Callback Rates



I find evidence that authentic degrees on average receive 21.97 percentage points more callbacks than those CVs lacking any graduation degrees. On the other hand, grey degree credentials worth 8.33 percentage point more than lacking a graduation degree certificate. Figure 5 segregated callback rates based on gender.

Figure 4: Callback Rates Segregated by Gender



On average female CVs are more likely to get a callback irrespective of CV types. Grey degrees receive 34.8% average callback when attributed to female CVs, opposed to 21.2% when attributed to the male CVs. I observe the similar pattern of callbacks with CV types across gender. The grey degrees are more beneficial to the female CVs than male CVs.

3.5.1 Differences in Callback Rates

Table 2 features average callback rates by CV types. Total number of CVs send by each degree types is presented in brackets. The different sectors have different callback rates. I also segregate the callback rates by gender. Row (I) represent result of the whole sample. Columns (IV), (V) and (VI) represent the overall impact of the credentials. Column (IV) represent the impact of grey degrees over those having no credentials and column (V) depicts impact of authentic credentials over lacking any credentials by degree types. We can see statistically significant impact of both grey and authentic credentials over lacking any credentials ($p=0.063$ and 0.000). But the percentage difference is much higher to the authentic credentials than having no credential. But how large is the effect of authentic credentials over grey credentials? Is this difference statistically significant? The impact of authentic credentials is much higher than grey credentials, which is illustrated in column (VI), and this impact is statistically significant ($p = 0.001$). But this pattern varies across sectors and gender. For example, the impact of grey credentials over no credentials for overall male CVs is not statistically significant, whereas the impact for female CVs is statistically significant at 10% significance level. Male CVs in both male dominated jobs and mixed sex jobs the effects of grey credentials over no credentials are not statistically significant similar to the female CVs. The impacts of authentic degrees over grey degrees and also over no credentials are statistically significant across sectors and gender. But, interestingly the authentic credentials are not statistically performing better than the grey credentials for male CVs in male dominated jobs ($p=0.161$) and also in male CVs in mixed sector jobs ($p=0.263$). In female dominated jobs the impact of authentic degrees over grey credentials is also not statistically significant ($p=0.134$).

The magnitude of effects is not similar across sectors and gender. On average female CVs has more impact of grey credentials over no credentials opposed to male CVs. In male dominated sectors grey degrees has 6.10 percentage points more callback over those who lack any graduation credential, while in female dominated sectors grey credentials have received 12.1 percentage points more callback over no credentials. On average female CVs with authentic credentials get 28.80 percentage points more callbacks than no credentials and 16.70 percentage points more than grey credentials. For male CVs, on the other hand, these impacts are 15.20 percentage points and 1.60 percentage points. In mixed sex sectors, where we send both male and female CVs, the impacts of authentic degrees over no credentials and also over no credentials are statistically significant. The impact of grey degrees over no credentials is also statistically significant. Row (5) and (6) segregate the mixed sex sector across gender. The impacts are much higher for female CVs than male CVs.

Table 2: Distribution of Callbacks

Sample	(I) Percentage Callback of Grey Graduate Degree Certificate	(II) Percentage Callback with No Graduate Degree Certificate	(III) Percentage Callback of Authentic Graduate Degree Certificate	(IV) Percentage Point Difference [(I)-(II)] (<i>p-value</i>)	(V) Percentage Point Difference [(III)-(II)] (<i>p-value</i>)	(VI) Percentage Point Difference [(III)-(I)] (<i>p-value</i>)
All Sample Sent	28.03 [132]	19.70 [132]	41.70 [132]	8.33 (0.063)	22.00 (0.000)	13.67 (0.001)
Male Dominated Jobs	18.20 [33]	12.10 [33]	30.30 [33]	6.10 (0.325)	18.20 (0.032)	12.10 (0.161)
Female Dominated Jobs	33.30 [33]	21.20 [33]	48.40 [33]	12.1 (0.254)	27.2 (0.005)	15.1 (0.134)
Mixed Sex Jobs	30.30 [66]	22.70 [66]	43.90 [66]	7.60 (0.254)	21.20 (0.001)	13.60 (0.011)
Male CVs in Mixed Sex Jobs	24.20 [33]	21.20 [33]	33.30 [33]	3.00 (0.745)	12.10 (0.103)	9.10 (0.263)
Female CVs in Mixed Sex Jobs	36.40 [33]	24.20 [33]	54.50 [33]	12.20 (0.211)	30.3 (0.006)	18.10 (0.012)
Males	21.20 [66]	16.60 [66]	31.80 [66]	4.60 (0.410)	15.20 (0.007)	10.60 (0.070)
Females	34.80 [66]	22.70 [66]	51.50 [66]	12.10 (0.088)	28.80 (0.001)	16.70 (0.007)

Notes: This table tabulate the callback rates across sectors and gender in segregated way. Column (IV), (V) and (VI) depicts the *p-values* out of t-test of the null hypotheses $H_0: [(I)-(II)] = 0$, $[(III)-(II)] = 0$ and $[(III)-(I)] = 0$.

3.5.2 Analysis at the Firm level

Table 3 represents result in a different way. I summarize outcome data based on the callbacks at the firm level. If a firm either callback all the participants or decides to callback none, we can say the firm equally treat all the CVs. Column (I) and (II) together represent extent of the equal treatment by firms. It can also either callback any one of the CVs or choose to callback two out of three CVs. Sectoral segregated analysis is reported in Appendix I.

Table 3: Callback by Firms (Percentage)

Sample	(I) No Callback	(II) All Three	(III) Only G	(IV) Only A	(V) Only N	(VI) G and N	(VII) A and N	(VIII) G and A
All Sample Sent	50.00 (132)	9.85 (132)	4.55 (132)	12.88 (132)	3.03 (132)	0.76 (132)	6.06 (132)	12.88 (132)
Male CVs in Mixed Sex Jobs	57.58 (33)	9.09 (33)	6.06 (33)	6.06 (33)	3.03 (33)	0.00 (33)	9.03 (33)	9.09 (33)
Female CVs in Mixed Sex Jobs	39.39 (33)	15.15 (33)	0.00 (33)	15.15 (33)	6.06 (33)	0.00 (33)	3.03 (33)	21.21 (33)
Males	60.61 (66)	7.58 (66)	4.55 (66)	10.61 (66)	1.52 (66)	1.52 (66)	6.06 (66)	7.58 (66)
Females	39.39 (66)	12.12 (66)	4.55 (66)	12.12 (66)	4.55 (66)	0.00 (66)	6.06 (66)	18.18 (66)

Notes: This table depicts distribution of callbacks by firms where absolute number of firms are in parenthesis. Column (I) implies the percentage of firms have not given any callbacks, column (II) reports the percentage of firms callback to all the CVs; (III) depicts the percentage of firms have given callback to the CVs with grey credentials only. 'G' implies grey credentials, 'A' implies authentic credentials and 'N' implies having no graduation credentials. Column (VI), (VII) and (VIII) illustrate the percentage of firms who have given callback to only two CVs.

Table 3 illustrate that 59.85% firms equally treat all the CVs with 9.85% of firms indeed callback to all the three types of CVs. 12.88% of firms callback to only authentic credentials, which is much higher than the 4.55% of firms callback only to the grey credentials and 3.03% of firms which have given callback to only those CVs without any graduation credentials. Most firms have given callback to the CVs with authentic and grey credentials. Around 12.88% of firms callback to the CVs with authentic and grey credentials at the same time but ignored the CVs with no graduation credential. This is much higher than the firms which chose to callback CVs with grey and no credentials, which constitutes only 0.76% of the firms. Our result also suggests substantial gender bias. 60.61 % of firms out of 66, do not give any callback to male CVs, whereas for female CVs this is only 39.39%. To see the gender based outcome this is beneficial to look at mixed sex sector jobs. In total we send applications to 66 firms in the mixed sex sectors. Male CVs do not receive callback from 57.58% of firms, whereas this number is just 39.39% in case of female CVs. There is also substantial gap in callback rates. For example, 15.15 % of firms callback to all the three types of female CVs in mixed sector opposed to just 9.09% of firms in case of male CVs.

Attribution problem is often argued as the central problem in empirical work. This refers to what degree changes in interest variable can be attributed to a particular causal variable. But do employers at any extent identify grey degrees? As I said, I ranked three universities from where grey degrees can be bought. On average, the lowest ranked university constitutes 20.45% of the total callbacks received by grey degrees; the middle and high ranked universities constitute 27.27% and 36.36% respectively. Appendix 3 reports in greater details. What signifies these results are that the employers are able to identify grey credentials at some extent. This suggests that this attribution problem is unlikely to contaminate experimental results.

3.5.3 Empirical Analysis and Robustness Check

In order to apprehend the callback rates by the CV types I conduct several estimations. Table 4 reports the result of our estimations. Model 1 to model 4 depict the regression output of the full sample, while model 5 and model 6 tabulate regression results of the male dominated and female dominated sectors. In each case the dependent variable is the callback dummy. Regression estimations of the mixed sector are reported in model 7. I find statistically significant results of the all the variables in models except the effect of grey credentials.

Table 4: Empirical Analysis and Robustness

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Grey Credentials	0.280*** (0.039)	0.280*** (0.039)	0.083 (0.052)	0.833 (0.052)	0.061 (0.099)	0.121 (0.115)	0.076 (0.080)
Authentic Credentials		0.417*** (0.043)	0.220*** (0.055)	0.220*** (0.054)	0.182* (0.099)	0.273** (0.115)	0.212*** (0.080)
No Credentials			Omitted	Omitted	Omitted	Omitted	Omitted
Gender [Male=1, Female=0]				-0.131*** (0.045)	Dropped	Dropped	-0.121* (0.065)
Sector	Full Sample	Full Sample	Full Sample	Full Sample	Male Dominated	Female Dominated	Mixed Sector
Constant	No Constant	No Constant	0.197*** (0.035)	0.262*** (0.043)	0.121* (0.070)	0.212** (0.082)	0.288*** (0.065)
R ²	0.088	0.282	0.039	0.446	0.400	0.469	0.460
Sample Size	396	396	396	396	99	99	198

Notes: Each column depicts the regression estimations where the dependent variable is the callback dummy. Robust standard errors are in parenthesis. *, ** and *** represent the ten percent, five percent and one percent significance level respectively.

Model 5 and 6 represent the regressions for male dominated and female dominated sectors respectively. Here also we are getting mostly statistically significant results but not all variables are not statistically significant at 1% significance level. The exercise also confirms the robustness of our result.

3.5.4 Cost Benefit Analysis

It is often beneficial to conduct a cost-benefit analysis of buying a grey credential. The economic rationality suggests that the expected benefit must exceed the expected cost for buying decision. Our experiment suggests that on average a participant has 8.33% more chance of callback with a grey degree credential opposed to having no degree credential. Table 5 tabulate the cost benefit analysis. I assume that an average participant earns 60,000 INR per year in this market. This figure may seem little conservative but may be a good assumption considering the fact that participants in our experiment have no relevant experience. If we assume 60% chance of callback to job offer the participants require 6.67 years to cover-up their cost. Our analysis suggests substantial variation across gender. In general women are in advantageous position in terms of return on grey degrees. Women require on average 4.59 years to equipoise cost, whereas for men this is 12.08 years. The male-female pattern is consistent across sectors, be it female and male dominated sectors or be it mixed sex sector. Men need on average 18.52 years to equipoise cost, which constitute almost half of their working life. This is apparent because we do not find much impact, actually no statistically significant impact of grey degrees on male CVs in mixed sex sector. A detailed cost-benefit analysis is reported in Appendix 4.

Table 5: Cost Benefit analysis of Grey Degrees

Sample	Improvement in Calback Rate with Grey Degree (%)	Expected Increment in Yearly Salary (with 60% callback to job transition)	Number of Years Required to Cover-up Cost (with 60% callback to job transition)
All Sample Sent	8.33	2,999	6.67
Male Dominated Jobs	6.10	2,196	9.11
Female Dominated Jobs	12.10	4,356	4.59
Mixed Sex Jobs	7.60	2,736	7.31
Male CVs in Mixed Sex Jobs	3.00	1,080	18.52
Female CVs in Mixed Sex Jobs	12.20	4,392	4.55
Males	4.60	1,656	12.08
Females	12.10	4,356	4.59

Notes: The expected annual salary is 60,000 INR and average cost of the grey degrees is 20,000INR. No future discount rate has been used.

3.6 Interpretation

Let us ask one crucial question, how our results relate to our theoretical model? We know from our theoretical analysis that it depends on the type of the employer and, her prior belief is the key. But how consistent is our result with the model? The literature on economics of discrimination suggest that firms may use ethnicities as the proxy to the unobservable characteristics of the prospective employees. Discrimination generates out of economic rationality, as the prior belief is sometimes so strong that it offsets the degree of qualities present in the discriminated identities. In our case, we find that grey credentials are substituting lack of credentials and it has significant positive impact. This is alarming because we find significant impact in the jobs where a graduation credential is not strictly necessary. The impact is much higher to the female CVs than male CVs. If we draw back from our theoretical model, an employer with liberal belief most is likely to give callback if she is not clear with the noisy signal. Indeed, these grey degrees are noisy signals as there are not much information available about it to the public. In qualitative research I found ignorance of the grey credentials in public. There are structural barriers to enter in higher education system in India and this is more chronic to the women. The employers may set their prior based on this understanding of the presence of structural barrier to entry in the higher education system by women. The employer may set their liberal belief opposed to conservative belief, which may be case for male CVs.

What is apparent from experimental result is the fact that grey degrees are performing better than those who do not have a graduation degree credential, even in those jobs where it is not required to own a graduation credential. Those who can afford to buy these grey credentials are in a better position in the labour market. But, on the other hand authentic credentials are doing much better across sectors and gender. This is a good sign and confirmsthat grey degrees are indeed noisy signals. Table 2 illustrate further. Most firms preferred authentic and grey credentials in terms of callback but ignored CVs with no credentials. This constitutes 13% of the firms, similar to the fraction firms which callback to only authentic credentials. This behaviour further strengthen our claim of noisy signal.

3.7 Limitations of Experimental Study

The field experiments have its own limitations. First thing in these experiments researchers use sterilized setting, which is far from reality. And, “how far the findings of such experiments extend to employer-worker interactions in the real-world labour markets is unclear” (Kaas and Manger 2011: 1). In the experiment we measured callback rates, but at what rate these callback rates would be transferred into real job offers cannot be inferred. But we can assume that callback rates are highly correlated to real job offers. I do not vary CVs based on gender a particular job application. A job application, which get female CV, get all the three version of female CVs. So, we cannot infer if the employer would have reacted differently, if we varied our CVs also on gender.

Chapter 4: Epilogue

This research tries to uncover the grey academic degree market in India. This research conceptualise the phenomenon of grey degrees as ‘market’, a ‘real’ business. I combine the qualitative work with a quantitative exercise to get a robust picture of the phenomenon. The qualitative exercise unearths the deep complexities exist in this market. The quantitative exercise then takes a one-dimensional study and investigate the economic dimension of the market. The quantitative field experiment investigates the employability of the grey degrees in labour market, proxied by callback rates.

I see the market through the lens of economic sociology, which has a much broader view than the neoclassical economic notion of markets. I particularly borrow ideas from the performativist school and argue for the performances of the calculative agents in this complex market. The grey degree certificate market is a complex network of actors. The market is what the actors create through their performances. Grey certificates, as commodities, serve various roles conditioned on the calculative dimensions of the actors. It has economic value with symbolic status. The commodities take shapes through the networks, where trusts are created. Actors innovate in terms of formative setting necessary for the function of this market. I also observe the technological innovation of the formative setting. Buyers come with different motives and life-goals and incorporate the grey certificates in heterogeneous ways. There is no homogenous feedback loop. The actors form, what Gibson-Graham (2005: 12) argues, “the dense networks of flow between people that contribute to community resilience, identity and wellbeing”, which in turn contribute to the performing market. The purchase of the commodity, grey certificates here, is incorporated into the foundation of the market. Talking about purchase of commodities, Callon and Muniesa (2005: 1234) notes that “the purchase is not the result of a subject-object encounter, both external to each other, but of a process of attachment, which, from qualification to requalification of the product, leads to the singularization of its properties”. And to function this market, there is requirement of a bundle of ‘professionals’ (ibid). The actors are not the silent takers of the market and nor the market is the silent protagonist. This is a complex process. Talking about economic practices and everyday experience, Gibson-Graham notes that “this is a chaotic landscape of complexity in which available theory has little to say to empirical experience” (2014: 148). The complexity of my research phenomenon and lack of academic engagement makes it more difficult to investigate in singular line. I borrow multitude of theoretical narratives to explain the grey degree market.

Those who buy degree grey credentials are rational in some extent, and if we take performativist notion, then we can say that buyers are calculative. The notion of calculative agents is more complex than the simplified doctrine of homo-economicus. In my research, I show this complexity of calculation and multiplicity of calculative agencies. I test the employability of these grey credentials, proxied by callback rates, in India through a field experiment. I send 396 fictitious CVs to 132 job applications. Each job application gets three CVs: one with grey degree, another with authentic degree and another one with no graduation degree. My results suggest that those who can afford to buy a grey credential are in a better

position in the job market. Both the grey and authentic credentials are of graduation degree level. My result further illustrates that the grey credentials are more employable in the labour market than those who do not have graduation degree credentials. I also find gender segregation and sectoral variances. On the other hand, on average, authentic credentials are performing much better than the grey credentials and no credentials. But experimental result suggests that employers are unable to statistically differentiate the grey credentials and authentic credentials particularly for male CVs.

I contributed in literature in several ways. First, as far as I know, this is the first systematic academic work on grey certificate market in India. Second, my research shows another application of anthropology of market in a not strictly legal market. The performative nature of market and its actors are applied in the grey market. Third, I go further and extend my analysis by actually testing the economic dimension of the grey degrees and test the employability of grey degrees in the labour marker, proxied by callback rates.

My study generates avenues of further research. First, it would be worth to look at the evolutionary process of the educational ‘certification’ and situate the emergence of grey market within the framework of institutional change (Mahoney and Thelen 2010, Pierson 2000), most notably how this phenomenon is related to the emergence of private degree providers. Second, it is often argued that the dynamic and innovative forces of capitalism continuously create new markets through the process of commodification (Appadurai 2011, Arnould and Thompson 2005, Cohen 2003). It would be interesting to situate the grey market within the capitalist dynamic and undertake a macro level study. Third, I do not variate gender within firm in my experimental study. It is worth to enquire the gender variation within firms with analysis between firms, which I exercised in my experimental study.

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Appendix 1: Enrolment in Distance Education System

Institutions	Total Enrolment in 2006–2007 (In Lakhs)	Total Enrolment in 2011–2012 (In Lakhs)	Increase in Enrolment from 2007-08 to 2011-12 (In Lakhs)	Growth Rate in Enrolment from 2007-08 to 2011-12 (In Percentage)
IGNOU	4.68	6.97	2.29	8.30
State Open Universities (SOU)	7.77	10.80	3.03	6.80
Distance Education Institutions (DEI)	14.96	24.24	9.28	10.10
Total	27.41	42.01	14.6	8.90

Source: Distance Education Council, GOI

Appendix 2: Sectoral Analysis of Firm Responses

Sample	(I) No Callback	(II) All Three	(III) Only G	(IV) Only A	(V) Only N	(VI) G and N	(VII) A and N	(VIII) G and A
All Sample Sent	50.00 (132)	9.85 (132)	4.55 (132)	12.88 (132)	3.03 (132)	0.76 (132)	6.06 (132)	12.88 (132)
Male Dominated Jobs	63.64 (33)	6.06 (33)	3.03 (33)	15.15 (33)	0.00 (33)	3.03 (33)	3.03 (33)	6.06 (33)
Female Dominated Jobs	39.39 (33)	9.09 (33)	9.09 (33)	15.15 (33)	3.03 (33)	0.00 (33)	9.09 (33)	15.15 (33)
Mixed Sex Jobs	48.48 (66)	12.12 (66)	3.03 (66)	10.61 (66)	4.55 (66)	0.00 (66)	6.06 (66)	15.15 (66)
Male CVs in Mixed Sex Jobs	57.58 (33)	9.09 (33)	6.06 (33)	6.06 (33)	3.03 (33)	0.00 (33)	9.03 (33)	9.09 (33)
Female CVs in Mixed Sex Jobs	39.39 (33)	15.15 (33)	0.00 (33)	15.15 (33)	6.06 (33)	0.00 (33)	3.03 (33)	21.21 (33)
Males	60.61 (66)	7.58 (66)	4.55 (66)	10.61 (66)	1.52 (66)	1.52 (66)	6.06 (66)	7.58 (66)
Females	39.39 (66)	12.12 (66)	4.55 (66)	12.12 (66)	4.55 (66)	0.00 (66)	6.06 (66)	18.18 (66)

Appendix 3: Attribution Problem

Universities Ranking	Number of CVs sent	Relative Contribution to total callbacks on grey degrees (%)	Absolute Contribution to total callbacks on grey degrees (%)
Low	44	20.45	6.82
Middle	44	27.27	9.09
High	44	36.36	12.12
Total	132	100.00	28.03

Appendix 4: Cost Benefit analysis of Grey Degrees

	Improvement in Callback Rate with Grey Degree (%)	Expected yearly gain with 100% callback to job transition (INR)	Expected yearly gain with 80% callback to job transition (INR)	Expected yearly gain with 60% callback to job transition (INR)	Number of Years Required to Cover-up Cost (with 100% callback to job transition)	Number of Years Required to Cover-up Cost (with 80% callback to job transition)	Number of Years Required to Cover-up Cost (with 60% callback to job transition)
All Sample Sent	8.33	4,998	3,998	2,999	4.00	5.00	6.67
Male Dominated Jobs	6.10	3,660	2,928	2,196	5.46	6.83	9.11
Female Dominated Jobs	12.10	7,260	5,808	4,356	2.75	3.44	4.59
Mixed Sex Jobs	7.60	4,560	3,648	2,736	4.39	5.48	7.31
Male CVs in Mixed Sex Jobs	3.00	1,800	1,440	1,080	11.11	13.89	18.52
Female CVs in Mixed Sex Jobs	12.20	7,320	5,856	4,392	2.73	3.42	4.55
Males	4.60	2,760	2,208	1,656	7.25	9.06	12.08
Females	12.10	7,260	5,808	4,356	2.75	3.44	4.59