

School of Economics and Finance

Essays on the Economics of Human Trafficking, Migration and Remittances

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Statement of Contribution to Research

This thesis contains no material that has been presented for a degree in any other university. To the best of my knowledge and belief, it contains no copy or paraphrase of work published by another person, except where duly acknowledged in the text.

Chapters 2 and 3 (Human Trafficking and Migration) were written jointly by Professor Paul W. Miller and the candidate. Professor Miller's contribution in all aspects of these papers was essentially a supervisory one. Content presented in Chapters 2 and 3 were published in the *Journal of Development Studies*.

Chapters 4 and 5 (Migration and Remittances) were carried out under the supervision of Professors Paul Miller, Mark Harris, and Associate Professor Mike Dockery and represent work undertaken solely by the candidate.

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Dedication



This thesis is dedicated to my principal supervisor *Professor Paul W. Miller*, for his unwavering enthusiasm, support and inspiration from the very beginning of my PhD life till his last day on earth.

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Political and Social Science (vol.653 no. 1, pp.141-161). The ANNALS paper is particularly pleasing, as it results from a personal invitation to submit to a special issue of the journal on trafficking following a conference presentation that I made in Germany on the topic. “An Empirical Testing of Informational Efficiency in Bangladesh Capital Market” was written with MU Ahmed, T. Haque and S. Hasanuzzaman and was published in 2014 in *Economic Change and Restructuring* (vol.47 no. 1, pp.63 -87) and finally, “Does the Formation of RTA Support the Neoclassical Growth Theory and Convergence Hypothesis?” was written with N. Hossain and published in 2014 in the *Journal of Economic Studies* (vol.41 no. 1, pp.51 -70).

Also, this thesis has so far spawned four papers: “A Theoretical Perspective on Human Trafficking and Migration-Debt Contracts” (joint with Paul Miller); “Empirical Evidence on Human Trafficking and Migration-Debt Contracts in Bangladesh” (joint with Paul Miller); “Remittances: Migrant’s Obligation or Choice? Evidence Using Matched Samples” (joint with Mark Harris); and “Remittances and Happiness of Migrants and Their Home Households: Evidence Using Matched Samples” (joint with Mark Harris and Michael Dockery). The first two were published in the *Journal of Development Studies* and the last two, at the time of writing, are currently under review with major international journals.

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Thesis Abstract

The link between migration and human trafficking is an issue that has recently received a surge in international attention. Each year trafficking as a business generates between \$10 and \$12 billion, making it the third largest illicit business after drugs and the arms trade (Obuah, 2006). Despite a migration flow of this magnitude, human trafficking is an under-researched topic. Among the empirical literature on human trafficking and migration, the majority deal with rather simple aggregates (such as, trends, major routes, and so on). However, very little research has been conducted using micro level data. This thesis provides findings that address this gap in the literature, and highlights areas for future research and data collection. Human trafficking issues are investigated both theoretically and empirically in the first part (Chapters 2 and 3) of this thesis, with particular reference to Bangladesh (which can be taken as a representative example of a developing economy).

In Chapter 2, a theoretical model of human trafficking and migration-debt contract is developed. It pays particular attention to the organisational process of human trafficking. In this model traffickers seek to exploit the trafficked individuals. A key component of the model is a queue order of prospective migrants. Traffickers expect additional sums beyond the initial contracted price in order to alter this queue order. The optimal additional amount that a prospective migrant should pay is derived: it is a function of the effort that the traffickers will apply in the migration process.

In Chapter 3, two aspects of the illegal migration process are examined. The first of these relates to the total sums of money that trafficked individuals pay to their traffickers. The second aspect relates to the use of migration contracts comprising both an up-front payment and a deferred payment (that is, a shared contract) as opposed to the contract based only on an up-front component. The results show that the total payments made to traffickers vary with “easily” observed characteristics (such as gender, age, marital status) but do not vary with details of the migration process (such as training provided, time spent in the trafficker’s queue). The findings suggest that the trafficking environment is characterized by many so-called double-edged swords.

The second part (Chapters 4 and 5) of the thesis focusses on international migration, and the consequent remittances using matched samples of Bangladeshi migrants living in the UK and Malaysia and their origin families living in

Bangladesh. Chapter 4, considers a migrant's remittances as purely private transfers, these private transfers are categorised broadly into two categories, obligation or compulsory and choice or voluntary. The motives to remit are examined based on these categories both theoretically and empirically. If the migrant remits for his origin household's consumption, the education of any children's and/or siblings', to pay for medical expenses and to repay loans and debts, then remittances are defined as compulsory transfers. If remittances are sent for purchasing land or building houses, to charity, to friends or non-relatives, or for religious purposes, these are referred to as voluntary transfers. Using a multinomial logit model, differentiate the motives for remitting compulsory and voluntary purposes in terms of observed migrants and home households characteristics. Findings of this chapter broadly suggest that remittances due to obligation are mainly motivated by altruism and insurance and voluntary transfers are motivated mainly by exchange and investment motives.

In the last chapter (Chapter 5), happiness functions are estimated to discover how remittances influence happiness among migrants and their households of origin based on matched samples of Bangladeshi migrant households. Empirical findings suggest that migrants' remittances play a significant role in stimulating the happiness of both the migrant and the household of origin, conditional on their demographic characteristics, human capital, social capital, various economic and psychological factors and also on the country of destination. For economically motivated migrants, having gained access to higher income abroad, sending more remittances at home makes them happier. Perceived cultural conflict and perceived discrimination are shown to be more important for immigrants' life satisfaction than economic gain. Strong ethnic identity and host country's language proficiency raise the migrants' probability to assimilate into the receiving society. If the migrant's spouse lives in origin, his life satisfaction reduces in spite of remitting more. A major implication of the results is that the measurement of economic welfare of migration should consider both the conventional economic analysis and the subjective considerations such as the status utility of migrants.

CHAPTER 1: INTRODUCTION

1

The link between migration and human trafficking is an issue that has recently received a surge in international attention. The International Labour Organisation (2012) estimated the number of persons in forced labour as a result of trafficking over the period 2002–2011 at 20.9 million. Each year trafficking as a business generates between \$10 and \$12 billion, making it the third largest illicit business after drugs and the arms trade (Obuah, 2006). Despite a migration flow of this magnitude, human trafficking is an under-researched topic.

Human trafficking has two broad categories: labor trafficking and sex trafficking. Most of the existing literature deals with sex trafficking (both women and children) may be due to the domination of feminist approaches (Di Tommaso, 2009; Hausner, 2005; Dessy *et al.*, 2005; Jakobsson and Kotsadam. 2013; Rao and Presenti, 2012; Cho *et al.*, 2013). Relatively little concrete research has so far been done considering the migration perspective. According to Piper (2005, p.17), “..... numerous studies on international labour migration have been produced, with increasing attention being paid to irregular flows and the documentation of abusive practices involved. But these two strands of literature – trafficking and irregular migration – have hardly engaged with each other which might to some extent explain the little recognition of male victims of trafficking. What invariably happens is that reports or research papers start off by acknowledging the fact that victims of trafficking can be male and female, in a sex and non-sex work context (as also defined by the 2000 UN Convention against Transnational Organized Crime),

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but subsequently they all focus on trafficking in the context of sexual exploitation and thus, on women and children.”

In the case of migration, any abuse and exploitation is expected to end once the migrant has arrived at the destination, while in the case of trafficking it continues (Derks, Henke and Vanna, 2006). Trafficked migrants are generally cast as criminals but ‘traffickers’, the root causes of trafficking, predominantly remain safe and invisible. At present the academic literature on human trafficking is relatively sparse [see, for example, Cho (2012) and Orrenius and Zavodny (in press) for overviews]. Empirical investigation is seemingly limited by the scarcity of data on the illegal activity. Among the empirical literature on trafficking and migration the majority are deal with the trends, routes, issues, activities and processes involved with trafficking. However, very little research has been conducted using micro level data.

Human trafficking issues are investigated in the first part (chapters 2 and 3) of this thesis, with particular reference to Bangladesh. The neglect of human security by Bangladesh has made her low-skilled citizens particularly vulnerable to traffickers as they seek a better life away from their current conditions. Bangladesh is a source and transit country for men, women, and children subjected to forced labour and sex trafficking. An estimated 25,000 women and children are trafficked annually (Masci, 2005). At the same time, a significant share of Bangladesh’s trafficking victims consists of men recruited for work overseas with fraudulent employment offers who are subsequently exploited under conditions of forced labour or debt bondage (US Department of State’s Trafficking in Persons Report, 2011). Illegal, undocumented migration and the consequent human trafficking in Bangladesh placed her in Tier 2 of the US Department of State’s Trafficking in Persons Report (2011).

The second part (Chapters 4 and 5) of the thesis comprises of two chapters on international migration, and the consequent remittances using matched samples of Bangladeshi migrants living in the UK and Malaysia and their origin families living in Bangladesh. International migration lies at the core of labour economics because the analysis of labour flows that improve labour market efficiency is a central ingredient in any discussion of labour market equilibrium. According to Stark (2005), remittances are both the cause and consequence of migration. Remittances and their determinants are both strongly linked to the economic growth and development of labour-exporting, remittance-receiving economies as workers’ remittances could easily be treated as an alternative capital flow.

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International migration has become one of the most important features of Bangladesh. More than 250,000 people migrate each year to different parts of the world. The economic growth and development of Bangladesh appear to have been heavily influenced by the remittances associated with international migration. Remittances contribute approximately *six percent* of Bangladesh's total national income, and are possibly of greater importance than all other sources of foreign exchange combined. Most of the remittances originate from Middle Eastern countries, Malaysia and the United Kingdom. The research on remittances in Bangladesh has shown that the steady flow of remittances has not only reduced poverty and unemployment but also resolved foreign exchange constraints, improved the balance of payments, and helped to increase the aggregate savings (Quibria, 1986; Murshid *et al.*, 2001; Siddiqui and Abrar, 2001; Afsar, 2000; Puri and Ritzema, 1999; Siddiqui, 2005; Barua *et al.*, 2007). At the micro level, remittances in Bangladesh have been shown as a household strategy for improving recipients' standard of living, providing resources for food, housing improvements, education and small household appliances (Mahmood, 1991; Joarder and Hasanuzzaman, 2008; Azad, 2003; De Bruyn and Kuddus, 2005). The flow of remittances in Bangladesh was about US\$ 1 billion in 1993, which doubled by the end of the decade. However, from 2000 the trend shows a dramatic rise and exceeded an eightfold increase to US\$ 15.187 billion in 2013 (World Bank, 2014). The share of remittances to GDP is 12.2% and account for 95% of current transfer, equivalent to 62% exports and could finance 48% of imports value in 2009 (Economic Trends, 2009).

1.1Part A

As previously outlined, Part A (consisting of Chapter 2 and Chapter 3) of this thesis investigates two human trafficking related topics, namely a theoretical perspective on human trafficking and migration-debt contracts and empirical evidence on human trafficking and migration-debt contracts in Bangladesh.

► **Chapter 2: A Theoretical Perspective on Human Trafficking and Migration-Debt Contracts**

This chapter develops an economic model of human trafficking and migration-debt contracts. The theoretical model constructed in the chapter differs from the existing literature by its more detailed consideration of the organisational process of human trafficking, and by being based on incomplete information. It uses optimal contract theory, and focuses on the maximum likely profit of the traffickers. The traffickers are seen as seeking to exploit the prospective migrants. They can deceive the migrants not only by altering the parameters of the migration-debt contract, but also by establishing a queue order of the prospective migrants. By doing so, they gain reputation on the one hand, and yet on the other hand, they are able to charge the migrants an amount beyond the contracted price to expedite the migration process, which involves moving the migrants up the queue order. The model is motivated through reference to human trafficking in Bangladesh though it should be applicable to most instances of human trafficking.

► **Chapter 3: Empirical Evidence on Human Trafficking and Migration-Debt Contracts in Bangladesh**

In this chapter, two aspects of the illegal migration process are examined. The first of these relates to the total sums of money that trafficked individuals pay to their traffickers. The second aspect relates to the use of migration contracts comprising both an up-front payment and a deferred payment (that is, a shared contract) as opposed to the contract based only on an up-front component. The data used in this chapter comprise trafficked individuals identified in three field surveys—conducted from April 2009 to November 2010—of illegal Bangladeshi migrants who had returned to Bangladesh. The sampling frame was based on information on returned

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illegal migrants from the Immigration Authority at Hazrat Shahjalal International Airport, Dhaka.

The results show that the amounts of monies paid to the traffickers are related to the age, gender, educational attainment, marital status and wealth of the trafficked individuals, as well as the nature of the migration contract (shared or up-front payment only), whether the individual was made a job offer prior to departure, and the country of destination. The characteristics of the trafficked persons (their age, gender and educational attainment), and the main features of the trafficking process (costs of migration and the additional payments beyond the contracted price) are the key determinants of the incidence of shared contracts, and of the amount of the deferred component under these contracts. The migrant's labour and asset endowments are also influential in this regard, but to a far lesser extent than the individual characteristics and the cost and extra-payment factors. Even where variables are statistically insignificant, which may arise simply due to the relatively small sample size, the direction of impact is in accord with expectations.

1.2 Part B

This part represents the first attempt to present a disaggregated view of international remittance flows among one of the top ten remittance receiving nations, Bangladesh, using a matched sample of international migrants and their origin families. To test the related hypotheses, data were collected through personal interview and from three different countries: UK (a developed country), Malaysia (a middle income country) and Bangladesh (the source country).

► Chapter 4: Remittances: Migrant's Obligation or Choice? Evidence Using Matched Samples

Considering a migrant's remittances as purely private transfers, remittances can be categorised into two broad categories: "obligation" and "choice" (or "voluntary") and examine the determinants and motives to remit based on these categories. In the case of obligatory transfers, migrants remit only to their parents, siblings, children or spouse. Thus obligatory transfers are between close family members. In the case of voluntary transfers, migrants remit not only to persons outside their own household (such as poor relatives or friends) but also to the

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community (such as to charitable organisations, and even to political parties). This chapter differs from the existing literature by considering intra- and inter-household transfers and also by considering the specific reasons for remitting. If the migrant remits for his origin household's consumption, children's or siblings' education, to pay for medical expenses and to repay loans and debts, then remittances are defined as compulsory transfers. But if remittances are sent for purchasing land or building houses, to charity, to friends or non-relatives, or for religious purposes, then these are termed voluntary transfers.

Obligatory and voluntary transfers may be substitutes if both provide similar services such as informal mutual insurance. However they may be complementary due to altruism, unobserved heterogeneity and other factors such as resource constraints, social norms, demonstration effect, technology, and shocks (LaFerrara and Wolff, 2006; Deb *et al.*, 2010). Despite a growing literature on private transfer behaviour, there exists a large gap concerning the motives for remitting to family members and giving to non-family or community. Both types of transfer behaviour may be motivated by exchange and/or 'warm glow' considerations but the true nature is still an empirical question.

In this chapter, the conditions under migrants are compelled to remit to their households of origin are examined. In addition, we also investigate what motivates the migrants to remit not only to persons outside their own household (such as poor relatives or friends) but also to the community (such as to charity organisations, and even to political parties). The latter category is known as the voluntary transfers. To test the relevance of our theoretical model, we have collected a matched sample of Bangladeshi migrant households living in the UK and Malaysia and their origin families living in Bangladesh. Using a multinomial logit model we try to differentiate the motives for remitting compulsory and voluntary purposes in terms of observed migrants and home households characteristics. Our findings broadly suggest that compulsory remittances are mainly motivated by altruism and insurance and voluntary transfers are motivated mainly by exchange and investment motives.

► Chapter 5: Remittances and Happiness of Migrants and Their Home Households: Evidence Using Matched Samples

The literature on international migrants' remittances has focussed on the determinants, motives to remit, the utilization of remittances and the impact of remittances on both the source country and the host country. A number of studies

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point out the negative effects of remittances by arguing that remittances may discourage the supply of labour and reduce the recipient's incentive to work or increase current consumption, thereby promoting dependency of receiving countries (Chami *et al.*, 2005; Funkhouser, 1992; Glytsos, 2002; Le, 2011; Lianos, 1997; Taylor *et al.*, 1996). On the other hand, proponents of remittances have shown that remittances help improve the recipients' standard of living, reduce poverty, encourage economic growth and development by enabling households to overcome liquidity constraints and invest in education and healthcare (see Rapoport and Docquier, 2006). So, remittances and their determinants are both strongly linked to the economic growth and the development of labour-exporting, remittance-receiving economies as workers' remittances could easily be treated as an alternative capital flow (Joarder and Uddin, 2010). But how this private transfer behaviour affects the subjective well-being (otherwise termed as '*happiness*' or '*life-satisfaction*') of international migrants and whether they improve or deteriorate the level of well-being of their households of origin has not yet been explored.

We estimate happiness functions to explore how remittances influence happiness among migrants and their households of origin based on matched samples of Bangladeshi migrant households living in the UK (a developed country and a destination of skilled migrants) and Malaysia (a middle income country and a destination of semi-skilled or unskilled migrants) and their origin families living in Bangladesh. The data were collected from September 2012 to February 2013. To estimate the impact of remittances on the well-being of migrants and their home households, we used an ordered probit technique. Our empirical findings suggest that remittances play a significant role in promoting migrants' happiness conditional on their demographic characteristics, human capital, social capital, various economic and psychological factors and also on the country of destination. Households of origin's life satisfaction not only depends on receiving remittances but also other factors such as number of migrants from the household living abroad and the migrants' country of destination.

► Publications Arising from the Thesis

The contributions to the literature of this thesis are, in part, reflected by the publications that have already arisen from Chapter 2 and Chapter 3. Chapter 2 (A Theoretical Perspective on Human Trafficking and Migration-Debt Contracts) has been published in the *Journal of Development Studies* in volume 49(10):1332-1343,

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2013 and Chapter 3 (Empirical Evidence on Human Trafficking and Migration-Debt Contracts in Bangladesh) has also been published in the *Journal of Development Studies* in volume 50(3):399-412, 2014. These two chapters were also presented at the Workshop on Human Trafficking, International Crime and National Security: A Human Rights Perspective, held in the Goettingen University, Germany, February 2012. Chapter 4 was presented at the 26th PhD conference in Economics and Business, held in November 2013, in the Australian National University (ANU). Chapter 4 was also presented in the PhD Colloquium, 2014 held in Curtin University and received the '*Best Paper Award*'.

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PART A
HUMAN TRAFFICKING AND
MIGRATION

PAPER I: CHAPTER 2

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A Theoretical Perspective on Human Trafficking and Migration-Debt Contracts¹

ABSTRACT

This chapter presents a theoretical model from economics perspectives that develop understanding of the illegal migration process. A key feature of the theoretical model is the payment of additional sums beyond the initial contracted price to alter the trafficker's queue order. The optimal level of such payment is derived. The types of data needed to rigorously test the model are discussed, together with policy implications.

Keywords: Human Trafficking; Migration-Debt Contracts; Illegal Migration

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2

2.1 Introduction

Human trafficking is a complex process. According to the International Organization for Migration (1994), trafficking in migrants can be said to exist if an international border is crossed; departure, transit, entry and/or stay are illegal; the migratory movement is voluntary; one or more traffickers are involved in the movement of the migrants; and the traffickers profit from such activities. Put more simply, as suggested by Bales (2007), human trafficking is a process by which a person ends up entering into slavery, as the people concerned find themselves in a situation of forced labour or debt bondage or are tricked into doing work they otherwise would not choose and for which they are low paid or unpaid. In 2000, the United Nations, in adopting the Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children, defined trafficking as follows:

Trafficking in persons shall mean the recruitment, transportation, transfer, harbouring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs.

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Trafficking involves a diverse range of people, each with their own specialisation. Some of these people may unknowingly participate in trafficking, such as airline pilots and train drivers. Others know full well what they do, such as document forgers and recruitment agents who use false promises of employment, while others, such as travel agents, are in a grey zone. Bajrektarevic (2000) and Schloenhardt (1999) portray the organisation of human trafficking as needing the involvement of up to 10 sets of specialists. These are investors, who put forward funding for the operation; organisers, who oversee the entire operation; recruiters, who seek out potential migrants; transporters, who assist the migrants leave the source country through land, sea or air; corrupt public officials, who accept bribes to enable migrants to enter or exit illegally; informers, who gather information on border surveillance and transit procedures; guides and crew members, who are responsible for moving illegal migrants from one point to another; enforcers, who are responsible for policing staff and migrants; local people in transit points, who provide accommodation and other assistance; and debt-collectors and money launderers, who launder the proceeds of crime.² These groups need to be kept in mind when constructing and evaluating models of the human trafficking process.

At present the academic literature on human trafficking is relatively sparse - see, for example, Cho (2012) and Orrenius and Zavodny (in press) for overviews. Empirical investigation is seemingly limited by the scarcity of data on the illegal activity. Di Tommaso, Shima, Strøm, and Bettiol. (2009, p.147), for example, note ‘...we are dealing with trafficking, i.e., with a crime, and it would be impossible to have a representative sample of the population’. The number of theoretical papers is also quite small, though several valuable studies have appeared in recent years: for example, Omar Mahmoud and Trebesch, (2010); Wheaton, Schauer, and Galli (2010); Tamura (2010); Friebel and Guriev (2006); Akee, Bedi, Basu, and Chau (2011); Dessy, Mbiekop, and Pallage (2005). These papers have addressed a number of interesting issues, including the ways migrants are exploited, migration-debt contracts and the role of institutions. Many of the models presented have a focus on the interaction between migrants and the traffickers. This interaction is a key element of the theoretical approach presented in the current article, the major aim of which is to develop an understanding of why some migrants pay traffickers monies beyond

² For a detailed analysis of the business of trafficking and exploitation, see Salt and Stein (1997).

the price that was initially agreed, and the factors that determine the level of these extra payments. To this end a game theoretic approach is used, based on incomplete information.

2.2 Literature Review

Despite the policy relevance, theoretical analysis in the area of human trafficking, migrant smuggling and/or debt-financed migration is relatively scarce, and it has only been in the past few years that comprehensive models have been developed. Two papers, by Omar Mahmoud and Trebesch (2010) and Wheaton *et al.* (2010) have proposed models based on conventional demand-supply frameworks.

Omar Mahmoud and Trebesch (2010) sketch a model in which human trafficking is an unavoidable side effect of migration in a world with large income disparities and binding restrictions on legal migration. They see human trafficking as being positively related to legal flows of migrants. This is due to both demand-side and supply-side considerations. On the demand side, large stocks of people seeking to move lower the recruitment costs of traffickers. This can occur through agglomeration effects (where businesses have been established to provide the many services required in the movement of peoples, including travel agencies and document forgers) and free-riding opportunities, such as free-riding on the activities of people smugglers.³ Omar Mahmoud and Trebesch's (2010) supply-side perspective is based on areas characterised by high rates of out-migration being particularly deprived, which provides the basis for the intending migrant to take high degrees of risk in the migration process. Hence, due to these demand- and supply-side factors, the main prediction of the model is that trafficking will be more prevalent in regions of large-scale migration.

Wheaton *et al.* (2010) viewed human trafficking as a monopolistically competitive industry, and used rational choice theory to present a model which identified the heterogeneous workers seeking illegal passage as the labour supply, and employers in the destination country as the source of the demand for the labour of trafficked persons. Traffickers are intermediaries in this model. The traffickers gain some control over the price of trafficked persons because of their heterogeneous

³ People smugglers are different from traffickers in that people smugglers move people across national borders illegally, but without exploiting them. Traffickers are associated with movement across national borders and exploitation.

nature, and hence different potential uses (for example, unskilled manual labourers, prostitution, domestic work). The model sketched by Wheaton *et al.* (2010) follows the standard theory of a monopolistically competitive firm, both in its short-run and long-run positions. The model is, however, quite rich, in that it allows analysis of the effects of increases in the cost to human traffickers, by way of ‘coordinated international law enforcement and legal cooperation as well as increased punishment for those caught transporting individuals illegally and against their will...’ (Wheaton *et al.*, 2010, p.130). Also, demand side policies are investigated:

‘Reducing the demand for trafficked humans means decreasing benefits to employers of employing trafficked labour, whether on-site or through subcontracting. If information is used to educate consumers about the horrors trafficked individuals face, consumer boycotts of certain products and services can be used to decrease benefits to employers’ (Wheaton *et al.*, 2010, p.131).

Both increases in cost and decreases in demand were shown to be associated with a reduction in the quantity of human trafficking victims.

The models of Tamura (2010), Friebel and Guriev (2006), Dessy *et al.* (2005) and Akee *et al.* (2011) are more complex than those described above. Tamura (2010) focused on the interaction between potential migrants and human smugglers, with an emphasis on whether the smugglers exploit the migrants after they arrive in the destination country. His model is based on homogeneous potential migrants and heterogeneous smugglers, where the smugglers differ in the capacity to exploit the migrants in the destination country. Information in the model is complete and perfect. Each potential migrant is randomly matched with a smuggler in the country of origin, and the potential migrant either accepts or rejects the fee for the illegal border crossing that is proposed by the smuggler.⁴ This fee is payable only following successful entry into the destination country. It is assumed in this model that potential migrants are not wealth constrained in financing their migration, thereby ruling out migration-debt contracts. Importantly, potential migrants are required to submit to their smugglers during the illegal migration process.

⁴ Tamura (2010, footnote 28) notes that the model can be generalised to consider an expanded range of services being offered by the smuggler, such as border crossing and employment in the destination.

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Where a contract for the illegal border crossing is entered into, and the clandestine entry into the destination country is successful, the smuggler is then viewed as deciding whether to exploit the worker through forced labour, defined in the study as the use of labour without full remuneration. The profitability of such exploitation depends on the probability of apprehension, and the penalty imposed on convicted smugglers. Migrants do not pay any penalty if they are caught beyond the forfeiture of the fee, and such forfeiture is only required in cases where their capture happens after a successful entry into the destination country. Post-smuggling exploitation will occur only among those smugglers for whom it is expected to be profitable, and given the heterogeneity of smugglers, post-smuggling exploitation can co-exist with non-exploitative smuggling. Based on this model, Tamura (2010) argues that increases in the post-arrival apprehension probability can increase non-exploitative smuggling, both by causing a switch from exploitative to non-exploitative smuggling, and by attracting unemployed smugglers into non-exploitative smuggling.

Friebel and Guriev (2006) also theoretically investigate the interaction between potential migrant workers and smugglers. However, in this model some of the potential migrants have difficulty financing the cost of the border crossing (that is, they are wealth-constrained) and hence enter into migration-debt contracts. Where the potential migrants are wealth-constrained, and do not have sufficient collateral, they need to commit to work for the smuggler in the destination country until the debt is covered. A second feature of this model is that the illegal migrant can be employed in either the legal or illegal sectors in the destination country. Enforcement of migration-debt contracts is more difficult in the legal sector, though the migrant experiences a higher apprehension probability.

The model of Friebel and Guriev (2006) is based on complete information, and is described as covering voluntary migration-debt contracts rather than human trafficking, 'which involves manipulation of information and kidnapping or coercion' (Friebel and Guriev, 2006, p.1087). The smuggling market in this model is competitive, so that the potential migrant can be viewed as offering the smuggler a 'take-it-or-leave-it' offer involving a down-payment and a further payment in the destination country. Under the assumptions that the migrant is wealth-constrained and has no collateral, this further payment in the destination country will need to be paid by resorting to a migration-debt contract. Following successful entry into the

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destination country (which is dependent on the extent of border control) the migrant either stays in the illegal sector working off his migration debt, or attempts to move into the legal sector, where he can avoid repayment of the migration-debt contract, albeit at the cost of a higher risk of deportation. Stricter post-arrival apprehension and deportation policies are shown to have the potential to increase the migration of low-skilled, wealth-constrained workers, and decrease the migration of high-skilled workers.

One distinguishing feature of the more recent model of Akee *et al.* (2011) is that there are two groups of buyers of the services of trafficked workers: those in the origin country and those in the destination country. The trafficker is viewed as an intermediary who services these two markets from a single source, the origin country. The price that buyers are prepared to pay depends on the overall supply of trafficked workers, and the risk of apprehension and conviction. These factors, in turn, are seen as depending on the law enforcement and the legal protection offered to trafficked workers. Added to this, the trafficked workers can self-report in the destination country, which is probable if the destination country offers trafficked victims an amnesty.

Akee *et al.* (2011) view the net expected value per victim trafficked as an amount that is bargained over between the buyers of the trafficked workers and the traffickers, as the intermediary. In this regard, the traffickers are viewed as being of heterogeneous quality (in terms of search costs and reservation income levels). The trafficker in this model engages in a two-level decision-making process. At the first level, the trafficker decides whether to engage in trafficking or not. At the second stage, the trafficker decides whether to service the origin or destination markets. The interaction between the trafficker and buyers of the services of trafficked workers is modelled as a two-way Nash bilateral bargain. As a result of the model set up, the markets for trafficked workers in the domestic and destination countries become linked. This linkage provides the basis for consideration of the impact of both source and host country policies on human trafficking, and specifically the circumstances where such policies reinforce or offset each other.

The model of Dessy *et al.* (2005) has a focus on the trafficking of children, but it can be viewed as being applicable to most forms of trafficking. They consider an economy where entrepreneurs can provide a legal consumption good or engage in child trafficking. Both parents and the government invest in child protection. These

forms of investment are assumed to be complementary. The level of this investment affects a child's vulnerability to traffickers.

Child traffickers in this model can engage in tacit collusion, an act that is argued to follow real-world behaviour. Dessy *et al.* (2005) solve their model for the optimal household investment in child protection, and for the level of effort applied to trafficking by entrepreneurs. The equilibrium numbers of entrepreneurs in the legal (consumption good production) and illegal (child trafficking) sectors of the economy are also derived.

The theoretical model constructed in the current article differs from the existing literature by its more detailed consideration of the organisational process of human trafficking, and by being based on incomplete information. It uses optimal contract theory, and focuses on the maximum likely profit of the smugglers. The traffickers are seen as seeking to exploit the prospective migrants. They can deceive the migrants not only by altering the parameters of the migration-debt contract, but also by establishing a queue order of the prospective migrants. By doing so, they gain reputation on the one hand, and yet on the other hand, they are able to charge the migrants an amount beyond the contracted price to expedite the migration process, which involves moving the migrants up the queue order. The model is motivated through reference to human trafficking in Bangladesh though it should be applicable to most instances of human trafficking.

2.3 The Model

We consider human trafficking as a game between two agents: a prospective migrant (M) and a recruiting agency as the trafficker (T). In this view of the world, M wants to migrate to the host country with the help of T. We assume that T has unlimited access to the credit market at zero cost, while M is wealth-constrained: M is endowed with wealth of 'a'. This is consistent with what is known of labour migration from Bangladesh. Martin (2010), for example, notes that many Bangladeshi migrants turn to private money lenders for loans to cover all or some of their pre-departure costs.⁵

⁵ Martin (2010) also draws attention to the very high interest rates, of 10 percent a month, on such loans.

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The two agents in this model are viewed as entering into a contract which specifies that T takes M to the host country, and in exchange M makes either one or two payments: a down payment of p_1 while still in the country of origin, and a second payment of p_2 after arrival in the host country. When M enters into this contract with T, he is unsure as to whether T is an honest or dishonest agent. The vast majority of those in Bangladesh seeking passage to a foreign country apply through personal connections or private recruiting agents rather than go through the government-run organisation, the Bangladesh Overseas Employment Services Limited. The provision of ‘free visas’ is prevalent under both types of non-government providers. According to Rahman:

‘This unofficial category of visas allows a potential migrant to enter a Gulf Cooperation Council country for work under the *kafala* system, but the sponsor-employer (*kafeel*) who officially sponsors the migrant does not offer paid work...In other words, a ‘free visa’ is legal but, paradoxically, when a free-visa holder starts working for others, he becomes illegal by law and vulnerable to deportation’ (Rahman, 2012; p.224)⁶

p_1 covers all the upfront costs of the migration. It can be viewed as covering the fees that recruiting agencies, such as those belonging to the Bangladesh Association of International Recruiting Agencies, can legally charge a migrant. According to the US Department of State’s Trafficking in Persons Report (2011), the recruiting agencies belonging to this Association are legally permitted to charge workers up to US\$ 1,235. The upfront payment will also cover the trafficker’s rent. Martin (2010) notes that recruiters often charge more than twice the official maximum recruitment charge. This is consistent with data presented by Rahman (2012), which indicate an average fee of BDT 195,237 (or US\$ 2,750 at 2010 exchange rates) for Bangladeshi migrants recruited to work in Gulf Cooperation Council countries. The US Department of State’s Trafficking in Persons Report (2011) notes that migrants are sometimes charged up to US\$ 6,000.

p_2 is only payable by illegal migrants, and can be thought of as the additional monies that need to be outlaid in order to subsequently secure legal status.

⁶ The *kafala* system refers to sponsorship of a potential migrant by an employer in the destination country. Under this system the migrant is tied to the particular sponsor, or *kafeel*.

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As p_2 is a payment to be made in the destination country, it will usually be associated with a form of collateral in the country of origin, such as the trafficker holding deeds to the migrant's land.⁷ It is acknowledged that some legal migrants may make payments from the destination country; though these payments are typically repayments on loans taken out with private moneylenders to cover their pre-departure costs (see Martin, 2010). This structure of the relationship between M and T thus follows Friebel and Guriev (2006). It sets in place a migration-debt contract. Slightly more than one-half of the illegal Bangladeshi migrants in the sample studied by Joarder and Miller (2013) had entered in a migration-debt contract with their trafficker.

In addition to this first set of payments M may seek to expedite the migration process by offering T an additional sum of money, β , while in the origin country. As most migrants borrow to cover the upfront costs of migration, and the typical borrowing costs (see footnote 4) mean that the level of debt under this loan arrangements can double within a year, the migrant has a monetary incentive to migrate as quickly as possible. The differential in earnings between the potential host country and the country of origin also provides an incentive to migrate sooner rather than later. β is in the form of a bribe while in the origin country, and thus is distinct from p_1 (a legal payment while in the origin country), and p_2 (a payment made from the host country).⁸ Additional payments of this nature are a characteristic of many migration flows. In Joarder and Miller (2013), close to 60 percent of Bangladeshi illegal migrants had made an additional payment to their trafficker before they departed Bangladesh. There are, of course, other reasons for offering the trafficker additional sums of money. For example, due to the uncertainty as to the status of T, the prospective migrant may offer additional money to reduce the chances that the down payment will be misappropriated. As this would essentially drop M to the bottom of the queue, this type of payment can be viewed as being covered by the description outlined above.

⁷ In the absence of collateral the illegal migrant may need to resort to debt-labour contracts involving temporary servitude, though these are more difficult to enforce.

⁸ Rahman (2012) also notes that kickback fees (payments to those abroad organising an employer-sponsored visa) are a characteristic of most applications processed by migrant brokers in Bangladesh.

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The interaction between the trafficker and the potential migrant portrayed here could also be viewed as reflecting market power asymmetries. This would amount to exploitation per se, whereas the description provided above, while containing elements of exploitation, is based on the premise that M is obtaining a service, specifically priority in the migration process, through the payment of the monies beyond the contracted price. The qualitative evidence in the survey analysed by Joarder and Miller (2013) indicates that traffickers generally demand extra monies by arguing that: (a) they have to pay additional sums to the immigration authority; (b) if the illegal migrants pay the extra money, they can recoup the outlay within a very short time after arrival in the destination country, otherwise they have to wait in the queue, and forego the earnings opportunities available abroad; (c) previous migrants have generally paid bribes (this type of social network phenomenon sometimes also compels those in the trafficker's queue to pay additional monies); and (d) the extra money is needed to bribe the police for necessary clearances, or for forging a passport, or for Bureau of Manpower, Employment and Training clearance. Both exploitation and the expectation of obtaining a service pervade these types of claims. For convenience, we have incorporated these in **appendix 2** (Table 2.3).

The reservation price for the trafficker is R . This is the minimum amount that must change hands before the trafficker will alter a potential migrant's place in his queue order. The reservation price is uniformly distributed as $[0, \alpha]$. This assumption is made purely for analytical convenience.

The trafficker (T) in this model finds and attracts people willing to leave their home country, using a broad spectrum of methods that could range from advertising in local newspapers to contacting people on an individual basis. In this way the trafficker also plays the role of the middleman (see Akee *et al.*, 2011; Rahman, 2012). Thus, T is viewed as conducting the whole process of migrant trafficking, including all illegal passage, preparation of the migrants, the provision of fraudulent documents, departure (emigration), the arrangement of accommodation at all transit points, arrival (immigration) and the introduction of migrants into the destination country (Salt and Stein, 1997; Schloenhardt, 1999; 2001), as outlined in Section 1. The traffickers in our model can also be viewed as the sub-agents in Rahman's (2012) description of the temporary migration process in Bangladesh, namely:

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‘The sub-agents approach the prospective migrants and convince them to take up the particular job offer in Gulf Cooperation Council countries. The true challenge of this job is the sub-agents’ need to earn the trust of prospective migrants...Sub-agents assist prospective migrants with a wide range of activities, such as paperwork, passports, bank accounts, medical check-ups and transportation to the airport.’ (Rahman, 2012, p.222).

The level of service sought changes depending on the individual migrant’s preferences, and is represented by the parameter z .

If the migrant receives a valid work permit visa through the recruiting agent, we can consider T as honest. This occurs with probability π . In contrast, where the migrant is provided with a work permit which is fake, or where the migrant is deported, then we consider the trafficker as dishonest. This occurs with probability $(1 - \pi)$. An example of this practice is the ‘free visa’ described above. In the case of an honest trafficker, there is no need for the migrant to outlay the second payment of P_2 .

T’s objective is to maximise his earnings. To do this he will try to solicit as many M as possible, so that he can act as a monopoly.⁹ T will typically establish a queue order of the prospective migrants. Places in this queue will initially depend largely on the deferred payment component of the full cost, though they may also be affected by the operational requirements of the trafficker’s network (such as the training of M for facing the emigration, production/supply of false travel documents, photo substitution, visa transposing, and producing forged visas or waiting for the ‘go-ahead’ signal from corrupt government officials in immigration and law enforcement authorities).

To expedite the migration process, or equivalently to alter the place in the queue of M, the traffickers demand an additional amount of money (that is, a bribe), which can be either high (θ^H) or low (θ^L). Without any loss of generality, we can interpret this as the level of effort. Assume that θ^H is the maximum level of money that T can demand, or the greatest effort they can apply. For simplicity, we set $\theta^L = 0$. Moreover, assume there is no cost to T from applying θ^H instead of θ^L .

⁹ Given that M has already made his down payment by this stage, there is no real opportunity to shop around for a T who might accept a lower β . M is essentially trapped, and T has monopoly power.

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Only the traffickers know their own types, that is, whether they are high effort or low effort providers. In other words, the organisational process of human trafficking considered here is based on incomplete information. Therefore, the strategy space of the traffickers can be defined as:

$$S^{IL} = \{\theta^H, \theta^L\} \quad (1)$$

and

$$S^{LS} = \{\theta^H, \theta^L\} \quad (2)$$

for T for performing the illegal (S^{IL}) and legal migration (S^{LS}) processes, respectively. Note that the superscripts LS and IL are used to denote the legal (LS) and illegal (IL) status of the middleman's activities.

If the prospective migrant decides to offer T an additional amount of money to remove the time constraint but the agent turns out to be an honest one, M gets a disutility of amount $(-\mathcal{G})$. This parameter $(-\mathcal{G})$ may be viewed as any perceived cost of offering an additional amount of money to expedite the migration process. If M proceeds with the additional money and T observes that it is below his reservation price, T will reject the offer and M will find that his place in the queue has been lowered, and as a result there will be further delays in his migration process.¹⁰ If M does not offer any additional money, he will also go through the upfront down payment process, that is, the delayed process. Thus, the strategy space of the migrants can be represented as:

$$S_{m1} = [f: \{\theta^H, \theta^L\} \rightarrow \{\beta, \tau\}] \quad (3)$$

where β is the additional amount of money the migrant is willing to offer in order to expedite the migration process, and τ represents not offering any additional amount and going through with the initial contract. S_{m1} is an element of the strategy space of the migrant.

If the recruiting agency is honest, then the expected utility function will be:

¹⁰ This need not necessarily represent punitive action on the part of the trafficker, but can simply be a shuffling down the queue order as a result of other potential migrants offering greater additional payments. Related to this, Martin (2010), when describing the situation in the Philippines, states "Fees paid to private recruiters represent the largest cost of working overseas. The Philippine Overseas Employment Administration limits private recruiter fees to one month's wages abroad, but migrants who know that there are more applicants than jobs sometimes pay more..." (Martin, 2010, p.11).

$$EU^{LS} = \begin{cases} 0 & \text{if } \theta = \theta^H \\ 0 & \text{if } \theta = \theta^L \end{cases}. \quad (4)$$

This function indicates that, in cases where a valid work permit is provided when the contract is agreed, there is no benefit to the trafficker from altering the level of effort. In this case, the trafficker's payoff will be:

$$U^T = p_1 - C \quad (\text{as } p_2 = 0) \quad (5)$$

where C is the actual migration cost incurred, and the difference between p_1 and C is the trafficker's rent.

Now, if the recruiting agency is only dealing with illegal migrants, then his expected utility depends on the combination of the bribe offered and the level of effort supplied. For a high level of effort, the level of utility differs according to whether the prospective migrant pays a bribe that exceeds the trafficker's reservation level, or the prospective migrant either fails to offer an additional payment or offers a payment that falls short of the trafficker's reservation price R . The expected utility function will therefore be:

$$EU^{IL}(\beta, S_{m1}, \theta) = \begin{cases} \beta & \text{if } \theta = \theta^H \text{ and } S_{m1} = \beta \text{ and } \beta > R \\ 0 & \text{if } \theta = \theta^H \text{ and } S_{m1} = \beta \text{ and } \beta \leq R \\ 0 & \text{if } \theta = \theta^H \text{ and } S_{m1} = \tau \\ 0 & \text{if } \theta = \theta^L \end{cases} \quad (6)$$

The payoff for the trafficker in this instance becomes:

$$U^T = \beta + p_1 + p_2 - C \quad (7)$$

In this case, p_1, p_2 and C are known to each party but β is unknown.¹¹

There is also the need to consider the contract from the perspective of the illegal migrants. Thus, consider the expected utility of the prospective migrant. This will depend on three broad factors. First, it will depend on whether an additional payment is offered to the trafficker (that is, whether the strategy space involves β or τ). Second, where an additional payment is made ($S_{m1} = \beta$), the level of utility is affected by the type of trafficker the migrant is contracting with (that is, the trafficker

¹¹ The payoff without β is $a (= p_1) \geq C - p_2$. If $a < C$ the migrant remains at home. In this case, p_2 could be thought as a 'migration-debt-contract' (Friebel and Guriev, 2006).

handles legal migrants or illegal migrants). Where the trafficker deals with illegal migrants, there is the extra consideration of whether the additional payment offered (β) exceeds the trafficker's reservation price, R . Third, where the migrant does not offer any extra money to the trafficker ($S_{m1} = \tau$), then the only thing that matters is the level of effort the trafficker actually applies. The expected utility function of the prospective illegal migrant (indicated by the superscripts PM) can thus be defined as:

$$EU^{PM}(\beta, S_{m1}, \theta) = \left[\begin{array}{ll} P(LS|\theta^H)(-\vartheta) + P(IL|\theta^H)(z - \beta)\frac{\beta}{\alpha} + P(IL|\theta^H)\frac{\alpha - \beta}{\alpha}(z - \theta^H) & \text{if } \theta = \theta^H \text{ and } S_{m1} = \beta \\ z - \theta^H & \text{if } \theta = \theta^H \text{ and } S_{m1} = \tau \\ z - \theta^L & \text{if } \theta = \theta^L \text{ and } S_{m1} = \tau \end{array} \right] \quad (8)$$

where $\frac{\beta}{\alpha}$ is the probability that the extra amount offered is greater than the reservation price of T, and $\frac{(\alpha - \beta)}{\alpha}$ is the probability that the extra amount offered is less than the reservation price of the trafficker, T (since the reservation price is uniformly distributed between 0 and α). We assume that $(z - \theta^H) > 0$.

A perfect Bayesian equilibrium game will now be examined. To do this, we need to examine the last stage; that is, the decision of the prospective migrant regarding the optimal amount of the additional payment needed to avoid the usual delay in processing.

Now,

$$P(IL|\theta^H) = \frac{P(\theta^H|IL)P(IL)}{P(\theta^H|IL)P(IL) + P(\theta^H|LS)P(LS)} = \frac{(1-\pi)}{(1-\pi) + \mu\pi} = \Phi \quad (9)$$

and

$$P(LS|\theta^H) = 1 - P(IL|\theta^H) = 1 - \frac{(1-\pi)}{(1-\pi) + \mu\pi} = \frac{\mu\pi}{(1-\pi) + \mu\pi} = (1 - \Phi) \quad (10)$$

where Φ and $(1 - \Phi)$ are the posterior probabilities of observing illegal and legal activities of the recruiting agents. μ denotes a threshold level of effort on the part of the recruiting agency that the migrant considers. The legal migrant updates his belief according to the strategy of the recruiting agency he observes, such as the

commission the agent charges for visa processing, ticket issue and so forth. The migrant will engage in forward induction and try to deduce information about the trafficker's type. Thus, μ captures the proportion of honest recruiting agencies or travel agents that apply θ^H for the migration process.

We can now write the participating constraint for the illegal migrant for getting a higher level of effort by the trafficker and outlaying additional money. This follows from the first two lines of the expected utility function outlined in equation (8), where the expected utility from offering additional payments must exceed the level obtained where such payments are not offered, namely:

$$\begin{aligned}
 & P(LS|\theta^H)(-\vartheta) + P(IL|\theta^H)(z - \beta)\frac{\beta}{\alpha} + P(IL|\theta^H)\frac{(\alpha - \beta)}{\alpha}(z - \theta^H) > z - \theta^H \\
 \Rightarrow & \frac{(1 - \pi)}{(1 - \pi) + \mu\pi}(z - \beta)\frac{\beta}{\alpha} - \frac{\mu\pi}{(1 - \pi) + \mu\pi}\vartheta \\
 & + \frac{(1 - \pi)}{(1 - \pi) + \mu\pi}\frac{(\alpha - \beta)}{\alpha}(z - \theta^H) > z - \theta^H \\
 \Rightarrow & \Phi(z - \beta)\frac{\beta}{\alpha} - (1 - \Phi)\vartheta + \Phi\frac{(\alpha - \beta)}{\alpha}(z - \theta^H) > z - \theta^H \tag{11}
 \end{aligned}$$

If the participation constraint, Equation (11) holds, the prospective migrant will maximise her expected utility from offering additional money to remove the time barriers; that is, pay T an amount β to raise the level of effort:

$$\begin{aligned}
 & \max_{\beta} \quad \Phi(z - \beta)\frac{\beta}{\alpha} - (1 - \Phi)\vartheta + \Phi\frac{(\alpha - \beta)}{\alpha}(z - \theta^H) \\
 \Rightarrow & \max_{\beta} \quad \Phi\left(\frac{z\beta - \beta^2}{\alpha}\right) - (1 - \Phi)\vartheta + \Phi\left[\frac{\alpha z - \beta z - \alpha\theta^H + \beta\theta^H}{\alpha}\right] \tag{12}
 \end{aligned}$$

Now, differentiating Equation (12) with respect to β , we get:

$$\begin{aligned}
 & \frac{\Phi z - 2\beta\Phi}{\alpha} + \frac{(-\Phi z) + \Phi\theta^H}{\alpha} = 0 \\
 \Rightarrow & \Phi z - 2\beta\Phi - \Phi z + \Phi\theta^H = 0 \\
 \Rightarrow & 2\beta\Phi = \Phi\theta^H \\
 & \beta^* = \frac{\theta^H}{2} \tag{13}
 \end{aligned}$$

Thus, the amount of additional payment to the trafficker incurred by the prospective illegal migrant while still in the origin country increases as the amount of maximum effort applied by the trafficker rises. As θ^H increases, the maximum level of effort by the trafficker increases, so the prospective migrant becomes more willing

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to pay additional money and as such avoid the time constraint. Since Φ , α , \mathcal{G} and z are not related to β they can affect the offer/not offer decision of the prospective migrant but not the magnitude of the additional payment.

If the constraint holds and the illegal migrant offers β^* , his expected utility will be $\frac{(\theta^H)^2 \Phi}{4\alpha} - (1-\Phi)\mathcal{G} + \Phi(z - \theta^H)$, and the traffickers expected utility is $\frac{\theta^H}{2}$ if $\beta > R$ and 0 if $\beta \leq R$. If the (posterior) probability of observing illegal activity by T (Φ) increases, the utility level of the illegal migrant increases, but an increase in the reservation price (R) will decrease the migrant's utility. An increase in the disutility M gets from erroneously offering a bribe to an honest agent (\mathcal{G}) will also decrease the migrant's level of utility. In the case where a bribe is not offered ($\beta = 0$), illegal migrants get utility of $z - \theta^H$, where z is the level of service the migrant seeks from the trafficker. Therefore, if z increases, the incidence of trafficking should decrease, *ceteris paribus*.

The description of human trafficking described here be most applicable to migration from rural areas, where a trafficker could be expected to have the monopoly power that is assumed in the model. Rahman (2012) notes that most prospective migrants in Bangladesh are from villages, and the middlemen who undertake much of the migration processes would therefore have some degree of market power over the village market. In the multi-layered approach outlined by Rahman (2012), the additional payments made could either stay with the middleman, or be channelled to the recruiting agency. They could be viewed as part of the fees paid in that structure (see, in particular, Rahman [2012, fig. 1]).

Hence, the key component of this model is β , the additional monies paid to traffickers while in the origin country. These are linked to the effort applied by traffickers. This level of effort cannot be measured directly by the researcher. As noted by Tamura:

‘...although increasingly available surveys of smuggled and trafficked migrants reveal the demand side of the market, its interaction with the supply side, and the consequences, they do not inform us of much about the supply side, i.e., smugglers and traffickers. Very little information comes from smugglers and traffickers themselves, and hence our knowledge of the supply side of the market seems limited’. (Tamura, 2010; p.541)

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However, the factors that determine the trafficker's level of effort will eventually determine the level and magnitude of β .

Information on a trafficked migrant's propensity to offer these types of bribes, and their capacity in this regard could therefore be obtained from survey data. The type of data required would cover the trafficked migrant's demographic and economic characteristics. It would also extend to information on the trafficker's activities, such as the provision of a job offer, training, the choice of destination, and the total amount charged. Analysis of variations in β using such information would provide important insights into the behaviour of traffickers, and permit the central theoretical finding of the model developed above to be tested.

An important aspect of the model that will need to be kept in mind when engaging in empirical testing is that the relevant population is all migrants, both legal and illegal. The legal migrants will pay only p_1 . Illegal migrants pay p_1 and p_2 . Only some of the illegal migrants will outlay β . Data collection in a host country, for example, Malaysia or the United States, that focuses on migrants in a particular community, for example Bangladeshis in Malaysia or Hispanics in the United States, has the potential to yield observations on the various groups required for rigorous testing of the model. As short-haul migration is less likely than long-haul migration to require the migrant to resort to migration-debt contracts, a focus on migrants who move some distance from their origin may have merit.¹² The respondent-driven sampling method outlined in Zhang (2012) may be appropriate for this type of data collection. This involves offering subjects financial incentives to refer others for interview, with predetermined limits on the number of such referrals per subject. This provides a framework for data collection that aims to reduce the biases that characterise the typical chain-referral sampling method. For example, it minimises the bias associated with researchers seeking particular subjects, and it essentially eliminates bias associated with some subjects having larger personal networks. The proponents of this method argue that the sampling strategy is characterised by an equilibrium, where the final set of recruits have characteristics that differ from those

¹² Friebel and Guriev (2006, p.1087) note that their theory of migration-debt contracts '...applies mainly to long-haul migration, for instance from China or South Asia to the US or EU, where migration costs are too high to be paid up front. It may be less appropriate for short-haul migration, for instance, between Mexico and the US, or Albania and Italy...'

of the subjects who were approached in the first round of data collection (see Zhang [2012] for further details).

2.4 Conclusion

Human trafficking is one of the major economic and social problems facing contemporary society. The International Labour Office (2012) estimated the number of persons in forced labour as a result of trafficking over the period 2002-2011 at 20.9 million. Despite a migration flow of this magnitude, human trafficking is an under-researched topic in the academic literature. This article provides findings that address this gap in the literature, and highlights areas for future research and data collection.

A theoretical model is constructed which pays particular attention to the organisational process of human trafficking. In this model traffickers seek to exploit the trafficked individuals. A key component of the model is a queue order of prospective migrants. Traffickers expect additional sums beyond the initial contracted price in order to alter this queue order. The optimal additional amount that a prospective migrant should pay is derived: it is a function of the effort that the traffickers will apply in the migration process. The theoretical analysis shows that a model can be developed that is well aligned with key features of the trafficking process and which yields predictions which should be open to empirical testing.

From a policy perspective, the implications of the current article are similar to those of previous theoretical studies reviewed in Section 2. Any policies, whether unilateral, bilateral, or multilateral, that facilitate legal migration between countries will reduce the amount that potential migrants will be prepared to pay for illegal border crossings, and hence reduce trafficking (see also Wheaton *et al.*, 2010). Unfortunately, recent developments along these lines, such as the H-1B visas in the United States, and the 457 temporary visas in Australia, are aimed at skilled migrants, who can more readily afford to pay migration costs up front and so do not need to resort to migrant-debt contracts and illegal payments (Friebel and Guriev, 2006). Coverage of unskilled migrants needs to be considered in this regard. However, the concerns of Tamura (2010) and Omar Mahmoud and Trebesch (2010) that illegal migration flows are positively related to legal migration flows, suggest that less-restrictive migration policies in destination countries may not offer a realistic

solution to this problem. Nevertheless, Omar Mahmoud and Trebesch (2010) argue that knowledge of this pattern at least allows for other anti-trafficking policies to be targeted on the regions more prone to human trafficking. More intense border control, and increases in post-arrival apprehension rates, which result in trafficking being less profitable (as they drive up the trafficker's costs, C), will result in high up-front and deferred prices, and hence reduce trafficking (see also Tamura, [2010], Wheaton *et al.*, [2010]), though this could also result in a higher incidence of migration-debt contracts within a given stock of illegal migrants (Friebel and Guriev, 2006).

Empirical testing of the models developed in the literature seems to be a priority at the current time. The model outlined in this article should be tested based on data that covers both legal and illegal migrants. This will enable the data to be aligned with the selection process inherent in the model. Such data would permit a focus on variations in p_1 , the payment of p_2 (that is, on the use of migration-debt contracts), as well as allow for examination of β , with appropriate accommodation of the selection process into this category of migrants (that is, illegal migrants who pay a bribe). Unfortunately, such a data set does not appear to exist at present, though it is argued above that the data could be collected from migrant communities in host countries known to have significant illegal populations. The respondent-driven sampling technique outlined in Zhang (2012) would be an appropriate method to employ in such data collections.

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Appendix 2

Table 2.1: Main Features of the Costs of Migration in BDT, by Destination Country
(% distribution in parentheses) (N= 386)

Destination	Average up-front costs in BDT	Average debt to the trafficker in BDT	Average additional amount beyond contract in BDT	Average total costs in BDT
Saudi Arabia	78363 (43.31)	69000 (38.14)	33557 (18.55)	180920 (100.00)
United Arab Emirates	100881 (55.30)	54000 (29.60)	27532 (15.09)	182413 (100.00)
Qatar	81668 (43.39)	75550 (40.14)	31019 (16.48)	188237 (100.00)
Kuwait	94501 (46.55)	82000 (40.39)	26500 (13.05)	203001 (100.00)
Bahrain	91201 (49.46)	69000 (37.42)	24191 (13.12)	184392 (100.00)
Oman	94243 (44.38)	90000 (42.38)	28102 (13.23)	212345 (100.00)
Libya	101200 (50.68)	66000 (33.05)	32470 (16.26)	199670 (100.00)
Malaysia	130000 (59.46)	68595 (31.38)	20022 (9.16)	218617 (100.00)
United Kingdom	290033 (47.52)	270000 (44.23)	50362 (8.25)	610395 (100.00)
Italy	333093 (46.39)	300000 (41.78)	85007 (11.84)	718100 (100.00)
United States	347918 (67.04)	134090 (25.84)	37000 (7.13)	519008 (100.00)
Other	89901 (49.21)	63500 (34.76)	29270 (16.02)	182671 (100.00)
<i>Average Total</i>	<i>152750 (50.92)</i>	<i>111811 (37.27)</i>	<i>35419 (11.81)</i>	<i>299981 (100.00)</i>

Note: Row percentages may not sum to 100 due to rounding.

Table 2.2: Reasons for Return, Gender, and Contract Type, by Country of Destination

Destination (number of respondents)	Reasons of Return				Gender		Contract Type
	Migrated with legal documents, but at destination the documents were found to be fake (%)	Violation of the contract by the employer (passport taken away, salary below the contracted amount, or employed as maid servant when not in the contract) (%)	Sexual harassment (%)	Long working hours without overtime payments, and no holidays, low or no payments (%)	Salary was not paid by the employer for at least six months (%)	Number of males trafficked (%)	
Saudi Arabia (106)	57 (53.77)	87 (82.08)	42 (39.62)	91 (85.85)	47 (44.34)	61 (57.55)	59 (55.66)
United Arab Emirates (104)	68 (65.38)	74 (71.15)	61 (58.65)	88 (84.62)	38 (36.54)	42 (40.38)	64 (61.54)
Qatar (37)	23 (62.62)	11 (29.73)	16 (43.24)	32 (84.49)	24 (64.86)	19 (51.35)	22 (59.46)
Kuwait (19)	11 (57.89)	7 (57.89)	10 (52.63)	16 (84.21)	14 (73.68)	9 (47.37)	13 (68.42)
Bahrain (7)	3 (42.86)	4 (57.14)	5 (71.43)	6 (85.71)	4 (57.14)	2 (28.57)	4 (57.14)
Oman (10)	5 (50)	8 (80.00)	6 (60.00)	8 (80.00)	5 (50.00)	3 (30.00)	2 (20.00)
Libya (14)	4 (28.57)	12 (85.71)	0 (0.00)	14 (100.00)	6 (42.86)	14 (100)	4 (28.57)
Malaysia (18)	13 (72.22)	6 (33.33)	7 (38.89)	18 (100.00)	9 (50.00)	11 (61.11)	9 (50.00)
United Kingdom (43)	42 (97.67)	0 (0.00)	0 (0.00)	5 (11.63)	0 (0.00)	41 (95.35)	17 (39.53)
Italy (8)	6 (75)	3 (37.50)	0 (0.00)	6 (75.00)	2 (25.00)	8 (100)	6 (75.00)
United States (6)	6 (100)	0 (0.00)	0 (0.00)	3 (50.00)	0 (0.00)	6 (100)	4 (66.67)
Others (16)	10 (62.5)	9 (56.25)	2 (12.50)	13 (81.25)	7 (43.75)	15 (93.75)	4 (25.00)
Total (386)	248 (64.25)	221 (57.25)	149 (38.60)	300 (77.72)	156 (40.41)	231 (59.84)	209 (54.15)

Table 2.3: Reasons for Paying Additional Money to Traffickers, by Country of Destination

Reasons for paying money beyond the contracted price to the trafficker		To bribe the immigration authority (%)		Due to the ex-ante expectation that they can recoup the outlay a short time after arrival in destination country (%)		Paid following i.e., due to social network (%)		To get necessary clearances, such as police passport, or for BMET clearance (%)		To get a visa with job contract/Akamah (%)		Had no other alternatives but to pay the additional amount, as upfront costs were paid 8-12 months earlier (%)	
Destination (number of respondents)													
Saudi Arabia (63)	38 (60.31)	43 (68.25)	51 (80.95)	44 (69.84)	37 (58.73)	29 (46.03)							
United Arab Emirates (55)	31 (56.36)	42 (76.36)	47 (85.45)	45 (81.81)	29 (52.73)	23 (41.82)							
Qatar (19)	7 (36.84)	14 (73.68)	13 (68.42)	16 (84.21)	12 (63.16)	5 (26.32)							
Kuwait (12)	8 (66.67)	10 (83.33)	9 (75.00)	11 (91.67)	8 (66.67)	2 (16.67)							
Bahrain (3)	3 (100.00)	2 (75.00)	3 (100)	2 (75.00)	3 (100.00)	1 (33.33)							
Oman (5)	4 (80.00)	5 (100.00)	3 (60.00)	2 (40.00)	5 (100.00)	0 (0.00)							
Libya (7)	4 (57.14)	5 (71.43)	6 (85.71)	2 (28.57)	7 (100.00)	4 (57.14)							
Malaysia (10)	8 (80.00)	9 (90.00)	5 (50.00)	6 (60.00)	10 (100.00)	2 (20.00)							
United Kingdom (36)	23 (63.89)	32 (88.89)	0 (0.00)	26 (72.22)	0 (0.00)	19 (52.78)							
Italy (6)	5 (83.33)	6 (100.00)	1 (16.67)	4 (66.67)	6 (100.00)	6 (100.00)							
United States (6)	6 (100.00)	6 (100.00)	0 (0.00)	3 (50.00)	0 (0.00)	5 (83.33)							
Others (6)	4 (66.67)	6 (100.00)	2 (33.33)	3 (50.00)	4 (66.67)	5 (66.67)							
Total = 228	141 (61.84)	180 (78.95)	140 (61.40)	164 (71.93)	121 (53.07)	101 (44.30)							

PAPER II: CHAPTER 3

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Empirical Evidence on Human Trafficking and Migration-Debt Contracts in Bangladesh¹³

ABSTRACT

This article presents an analysis of the payments illegal migrants make to traffickers. It covers the total amounts of these payments, the incidence of migration-debt (or shared) contracts, and the value of the deferred payment component under these shared contracts. Data on illegal migrants from three field surveys conducted in Bangladesh from April 2009 to November 2010 are used. The results show that the total payments made to traffickers vary with easily observed characteristics (gender, age, marital status) but do not vary with details of the migration process (training provided, time spent in the trafficker's queue). These relationships are consistent with exploitation. Migration-debt contracts are more prevalent when the costs of illegal migration are relatively high, which adds empirical support to theoretical models such as Friebel and Guriev (2006). Contrary to existing reports, we document variations in fees for illegal passage across individuals.

Keywords: Human Trafficking; Migration-Debt Contracts; Bribes; Bangladesh

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3

3.1 Introduction

Human trafficking has been identified in the literature on illegal and undocumented migration as one of the most rapidly growing forms of transnational crime (Okubo and Shelley, 2011). The International Labor Organization (ILO, 2012) recently estimated the number of persons in forced labor as a result of trafficking over the period 2002-2011 at 20.9 million. Obuah (2006) reported that human trafficking is the third most organised crime, exceeded only by drugs and the arms trade. Consequently, since the early 1990s non-government organisations, international and governmental agencies, law enforcement authorities, and policy makers around the world have given considerable attention to human trafficking, with leading international organisations such as the ILO, International Organization for Migration (IOM), and the United Nations giving the fight against human trafficking top priority.

At present, however, owing to the shadow nature of the activity, little is known about most aspects of the illegal migration process. This includes the more general matters, such as the overall number of illegal migrants discussed above, and more detailed matters, such as the types of contracts that the illegal migrants enter into with human traffickers, and the value of the payments they make to these traffickers. Two of these issues are investigated in this article. The first of these concerns the nature of the contract that the illegal migrant entered into: specifically,

whether it is a shared or a fixed contract. The second issue is the total payment made by the illegal migrant to their trafficker. Friebel and Guriev (2006) report that fees for the China-US smuggling route are US\$40,000-US\$50,000, and for the China-Europe route over US\$20,000.

The analyses in the current article are undertaken with reference to Bangladesh, a less-developed country that has become a major source and transit country for men, women and children subjected to forced labour and sex trafficking. Rahman (2012, p. 225) reports fees of US\$2,500-US\$3,100 for passage from Bangladesh to Gulf Cooperation Countries, and similar levels are established in our survey data. The GDP per capita of Bangladesh is currently only around US\$2,000; hence the fees that we examine are substantial. We examine whether these fees differ according to the characteristics of the migrants and the nature of the migration process. Friebel and Guriev (2006, p.1059) note that “It is interesting that within the same route (e.g., Fujian-New York) fees do not seem to vary substantially across individuals”. Our data suggest otherwise, but they do indicate that the fees charged by traffickers do not vary with details of the migration process.

3.2 Literature Review

3.2.1. The Background

Migration (legal or illegal, internal or international) and human trafficking have been argued to be driven by both ‘push’ and ‘pull’ factors. Language, cultural affinity, labour shortages, the existence of networks, negative selection and the existence of an underground economy where irregular immigrants readily find work were identified by Van Liemt (2004) as the most prominent pull factors. Van Liemt (2004) argued that both political and economic factors play vital roles as push factors, while Gunatilleke (1994) saw inequalities in living standards between the more developed and less developed countries, and rising expectations, as the major push factors that induce people to migrate in search of opportunities for a better life.¹⁴ Mahmoud and Trebesch (2010) argued that relative deprivation was a major push factor, and that human trafficking will be more prevalent in areas with high rates of emigration as traffickers benefit from lower recruitment costs and the free-

¹⁴ See also Okubo and Shelley (2011) and Bales (2007).

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riding opportunities there, and/or because migrants departing from high-migration areas are negatively selected and can easily be deceived. Many of these suggested causes are prominent features of empirical studies.

Akee, Basu, Chau, and Khamis (2010) examined the determinants of human trafficking with an emphasis on the potential roles of ethnic, religion and language fragmentation, and conflict. The dependent variable was a binary indicator of whether there had been trafficking reported between a particular pair of countries. Indices of fragmentation were entered (in quadratic form) into an estimating equation that included a range of descriptors of the source and destination countries, including GDP, a rule of law index, the presence of refugees and internally displaced persons in the source country, the type, number and intensity of internal conflicts, geographical descriptors, and an indicator of whether prostitution was prohibited. Trafficking increased with both ethnic fragmentation and religious fragmentation at a decreasing rate. The situation with respect to language fragmentation was mixed. Income was indicated as significant as both a push and a pull factor, and the presence of refugees and internally displaced persons in the source country increased the likelihood of trafficking. The results in relation to conflicts were described as paradoxical: internal conflicts reduced the likelihood of trafficking while external conflicts increased the incidence of trafficking.

Using a similar empirical framework, Akee, Bedi, Basu, and Chau (2011) show that countries that grant legal amnesty to immigrants have an increased likelihood of experiencing human trafficking. Prostitution laws in the host and source countries, as a proxy for institutional efforts against illegal sector employment in general, and trafficking in particular, were also shown to enhance the likelihood of human trafficking, although the estimated effects were weak and varied across methods of estimation. Akee *et al.* (2011, p.29) conclude ‘...domestic and international trafficking activities are simultaneously determined...domestic legislation can spill over to impact international trafficking, but likewise international enforcement of anti-trafficking initiatives can impact domestic trafficking activities as well’.

In an exploratory test of a theory of global trafficking based on a regression model containing 76 variables, Bales (2007) identified corruption, the country’s infant mortality rate (an indication of population pressure), the proportion of the population below the age of 14, the country’s food production index (an indication of

poverty), population density and conflict and social unrest as significant push factors, and the permeability of the country's border, the male population over the age of 60, governmental corruption, food production, energy consumption and infant mortality as the major pull factors.

Cho (2012) recently undertook an encompassing analysis of the importance of 70 push factors and 63 pull factors used in 19 empirical studies of human trafficking. This was done using an extremes bounds analysis, applied to three macro-level data bases. The robust push factors were income, the size of the food, beverage and tobacco industries, fertility rate, the percentage of Muslims in the population, being a transitional economy, and information flows. All factors other than the final two were associated with reduced human trafficking. Only three variables were reported to be robust pull factors: income (positive effect), language fractionalisation (positive effect) and information flows (negative influence). In each instance, a wider range of factors influenced trafficking outflows and inflows as less stringent criteria were applied (for example, significant in only two out of the three data sets as opposed to significant in all three data sets). Included among these were the crime rate, various institutional (control of corruption, rule of law) and regional variables. In some instances the significance of variables varied across samples distinguished by the inclusion of countries of different levels of development. For example, while legalised prostitution was not linked to significant increases in human trafficking when all countries were considered, it was a significant influence in studies for the more developed countries (see also Cho , Dreher, and Neumayer, 2012; Jakobsson and Kotsadam, 2013).

The studies reviewed above have a focus on 'why' there is human trafficking. Other studies address the issue of 'who' is trafficked. The approach in this latter group of studies is to document the characteristics of those who relocate, such as gender (Ehrenreich and Hochschild, 2003; Klueber, 2003), education (Richard, 2000; Kelly, 2002), and age (Green, 1998). Clear patterns in the trafficking propensity according to individual characteristics have been reported.

Turning to the particulars of the contractual arrangements between the illegal migrants and their traffickers/middlemen, it is noted that Friebel and Guriev (2006) and Tamura (2010) provide theoretical coverage of several key features of migration-debt contracts. They also provide some empirical support, though this is in relation to smuggling rather than trafficking (see Jureidini [2010] on the distinction between

smuggling and trafficking). In particular, Friebel and Guriev (2006) report that smuggling fees range from US\$20,000 to US\$50,000, and were over two and one-half times higher for the China-US route than they were for the China-Europe route. Down payments on these fees were typically 20 per cent of the total fee, with the balance repaid by working for the intermediary over an average of 26 months in the destination country. Further details on the contracts entered into by trafficked persons are found in Rahman (2012), Jureidini (2010) and Jureidini and Moukarbel (2004). Jureidini and Moukarbel (2004) and Jureidini (2010) examine issues associated with migrant domestic workers in Lebanon. The first of these studies was based largely on case studies of 70 migrant domestic workers, and focused on the personal hardships they were enduring. These women were subject to violence, exploitative working conditions, and denial of freedom of movement: their passports were held by their employer in the majority of cases, and many reported being locked in their employer's house when the employer was absent, and not being allowed to leave the house unless accompanied. The authors described these migrant women as contract slaves. Similar issues are addressed by Jureidini (2010) in an examination of whether domestic workers in the Middle East should be categorised as trafficked as frequently as is the current practice.

Rahman (2012) has a focus on the recruitment processes of Bangladeshi migrants in the Gulf Cooperation Council countries. While much of the migration discussed was legal, there are several findings of relevance to the current study. Included are the report that females are more likely to enter into migration-debt contracts than males, largely due to the nature of their typical work (domestic services) in the destination countries, the widespread practice of employers confiscating the migrants' passports and other travel documents, and the prevalence of dubious practices, such as the arrangement of "free" visas that lack legal status once the migrant commences work with an employer other than the fabricated sponsor-employer nominated on the visa. Kickbacks, and the large costs involved, ranging from US\$2458 (Bangladesh-Kuwait route) to US\$3132 (Bangladesh-Bahrain route) are also prominent features of Rahman's (2012) discussion. Of the typical total fee, 23 percent was for formal fees and expenses, and the remainder for payments to intermediaries, including kickbacks.

Like Rahman (2012), the current study has a focus on Bangladesh. However, while Rahman (2012) examined mainly legal migrants, the individuals investigated

here are the trafficked subsample of a group of illegals who had returned or were returned to Bangladesh.

3.2.2 The Case of Bangladesh

As noted in the Introduction, Bangladesh is an ideal testing ground for models of human trafficking as human trafficking is rife in that country.¹⁵ The oil boom in the Middle East in the early 1970s generated a demand for a large quantity of labour in a wide range of activities, including domestic servants as maids, nannies, and cooks. Migrant labour from South Asia turned out to be a cheap and convenient way to meet this demand: Large-scale migrations of both male and female Bangladeshi labourers to the Middle Eastern countries commenced around 1976. That was also the beginning of illegal trafficking of Bangladeshi migrants to the Middle East. According to Paul and Hasnath (2000, p.270):

The trafficking oddly and counter intuitively intensified in early 1982, when the Bangladesh government passed protective legislation to deter the migration of women workers to the Middle East. This restrictive policy was in response to the problems generally faced by maids employed there. Many women who legally entered Middle Eastern countries prior to 1982 decried unequal norms of behaviour and discriminatory lifestyles, including inferior food and living arrangements. Other complaints of ill-treatment and abusive behaviour included overwork, beating, humiliation, inadequate food, sexual harassment, and rape (Hossain, 1993, p.42).

Currently Bangladeshi men and women migrate willingly to Saudi Arabia, Bahrain, Kuwait, the United Arab Emirates (UAE), Qatar, the Maldives, Iraq, Iran, Lebanon, Malaysia, Singapore, Libya, Europe, and other countries for work, often under legal and contractual terms. Most of them are working as painters, construction workers, agricultural workers, taxi drivers, carpenters, and salesmen. A large number of the legal migrants are also engaged in small businesses, such as restaurants, departmental stores and in the services sector (Joarder and Uddin, 2010; Ahmad and Zohara, 1997). But the jobs using human trafficking victims typically include a narrower range of activities, like prostitution, domestic services, agricultural work, work in small factories and workshops, mining, land clearance, cleaning, selling in

¹⁵ Bangladesh's low standard of living (36.8 percent of her population live below the poverty line according to the CIA World Factbook, 2011) will also contribute to the migration and human trafficking pressures in this country.

the market and begging (Bales, 2005). According to the US Department of State's Trafficking In Persons Report (2011),

Most Bangladeshis who seek overseas employment through legal channels rely on the over 1,000 recruiting agencies belonging to the Bangladesh Association of International Recruiting Agencies (BAIRA). These agencies are legally permitted to charge workers up to \$1,235 and place workers in low-skilled jobs typically paying between \$100 and \$150 per month, but workers are sometimes charged \$6,000 or more for these services. Many Bangladeshi migrant labourers are victims of recruitment fraud, including exorbitant recruitment fees often accompanied by fraudulent representation of terms of employment; high recruitment fees increase vulnerability to debt bondage and forced labour among transnational migrant workers. Women typically work as domestic servants; some find themselves in situations of forced labour or debt bondage where they face restrictions on their movements, non-payment of wages, threats, and physical or sexual abuse.

Human trafficking of Bangladeshis is a highly prevalent phenomenon, having started and gained its momentum after the fall of the Bangladeshi military dictatorship regime in 1990, through political asylum and the selling and trading of fraudulent visas and work contracts. Human trafficking victims are typically engaged in activities like prostitution, domestic services, agricultural work, work in small factories, mining, land clearance, cleaning, and begging (Bales, 2005). The main trafficking route has been from Benapole to Calcutta to Turkey, or to Dubai and then to most European countries. While trafficking statistics are problematic, an idea of the dimension of the problem can be gained from several studies. İçduygu and Toktas (2002) used survey data to show that from 1995 to 2001 a total of 11,336 Bangladeshi irregular trafficked migrants were apprehended in Turkey and subsequently deported. In 1996, 50,000 Bangladeshi illegal migrants were deported from Saudi Arabia and the UAE. In the subsequent year, 100,000 illegal migrants were deported from Malaysia (Kibria, 2004). Illegal, undocumented migration and the consequent human trafficking in Bangladesh placed it in Tier 2 of the US Department of State's Trafficking in Persons Report (2011).

In this study we attempt to enhance understanding of the position of these trafficked migrants through analysis of a data set that contains rich background information on trafficked migrants, and details on the payments they made to their traffickers. These data were collected from returned and deported illegal and trafficked migrants of Bangladesh.

3.3 Data Description

The analyses below are based on data on the trafficked persons subset of illegal migrants from three field surveys conducted from April 2009 to November 2010. The sampling framework was based on information on returned illegal migrants (returned between April 2009 and the time of final data collection) provided by the Immigration Authority at Hazrat Shahjalal International Airport, Dhaka. According to the information provided by the Immigration Authority used to construct the sampling framework, approximately two-thirds of returning illegal migrants were from Dhaka and Sylhet, and to facilitate the cost-effective administration of the survey, only returning migrants from these two divisions were targeted for interviews.¹⁶ A second screen that was used, for the same cost reasons, was to focus on respondents of these two divisions who supplied their mobile phone number at the time of their return. Based on these contact numbers, male migrants were contacted directly, and approaches were made to the parents/guardians of female migrants. Trust was built with the migrants who could be contacted in this way; subsequently they introduced the interviewer to other returned migrants, offering assurance that the data enumerator was not a secret agent of the immigration services. Where the initial successful contacts provided names and addresses of other returnees, these were checked against the information provided by the Airport Immigration Authority. Cases where a match was established with the official records were followed up, usually with direct assistance from the fellow returnee who had supplied the new contact information.¹⁷ Hence, the sample comprises all readily contactable returned migrants based on official records. A total of 638 respondents were contacted, and of these 518 agreed to provide the information requested (that is, a refusal rate of 18.8 per cent). Usable information was obtained from 476 respondents: the 42 individuals with ‘non-stated’ information comprise only 8.1 per cent of the potential usable responses. Hence, as with other researchers,

¹⁶ Data are not available to test whether the migrants from these two divisions are representative of all returned and deported trafficked Bangladeshis. However, more than 50 percent of all migrants live in Sylhet (Joarder and Hasanuzzaman, 2008).

¹⁷ Generally most of the trafficked migrants from the Middle East and Malaysia were returned on the same flight and had lived together abroad. In most cases their residence in Bangladesh was also in the same region.

we certainly do not have an ideal data set.¹⁸ However, given the reliance on the records of the Immigration Authority at Hazrat Shahjalal International Airport, Dhaka, the framework used in the data collection should provide a sample that broadly represents the main characteristics of returned illegal migrations in Dhaka and Sylhet.¹⁹

The questionnaire was administered via face-to-face interviews with either the migrant or, in case of females, with the household head, giving appropriate assurances of individual anonymity and confidentiality.²⁰ Brief details on the survey can be found in Joarder and Miller (2013). The information collected included details on the migrant's demographic and socio-economic status, such as education, marital status, gender, occupation abroad, household size etc. and the cost of migration, financing of the migration trip, the payments made to traffickers, and whether the contract with the traffickers was a shared or a fixed contract, reasons to return, and the value of assets. Information on the month of the survey, which might capture differences in the mix of migrants returning over time, perhaps in response to global events, was available, but its inclusion in the estimating equation used below did not add to the explanatory power of the model. Similarly, a variable for the length of time the migrant had spent abroad was included in the initial estimations, but was not statistically significant in any of the models considered. Consequently, these time-related variables are not included in the estimations presented below.²¹

The IOM's (1994) definition of trafficking in migrants was followed. Hence, the sample was restricted to only the 386 migrants who reported that they felt that they were going abroad with legal documents but when they reached the host country they came to know that the documents were fraudulent; or those who returned due to a violation of their contract by the employer in the host country, or those who mentioned that they returned voluntarily due to factors such as sexual harassment, long working hours without overtime payment, no holidays, low or no payment,

¹⁸ In relation to data issues, Di Tommaso *et al.*, (2009, p.147) note "...we are dealing with trafficking, i.e., with a crime, and it would be impossible to have a representative sample of the population". Likewise, Akee *et al.*, (2011, p.17) state "By necessity, observed trafficking flow represent the number of discovered victims either through law enforcement, or self-reporting, rather than the actual magnitude of the number of trafficked victims". The focus on returned illegal migrants is consistent with Kibria (2004).

¹⁹ The information provided by the Immigration Authority at Hazrat Shahjalal Airport, Dhaka does not contain the details needed to rigorously test for randomness of the final data sample.

²⁰ An Overview of the questionnaire is given in Appendix C.

²¹ Tables of results from models that include these variables are available upon request.

payment of a salary that was much below the contracted amount, and those whose salary was not paid by the employer for at least six months. Table 3.1 lists the definitions of the variables used in the empirical models estimated below. Table 3.2 provides descriptive statistics.

The mean age of the trafficked individuals was 26 years. 59.8 per cent were male.²² Only around 35 per cent of the respondents were married at the time of migration, about 58 per cent were from rural areas, and the average household size of the trafficked individuals was 6.92 individuals. Regarding the skill composition, around 30 per cent of the trafficked migrants were either illiterate or had completed only the primary level of education (up to class five). About 54 per cent were found to have some secondary school experience, but of these fully 82 per cent had not completed the secondary education degree. Ten per cent had completed the higher secondary school degree and vocational education. Only five per cent had completed tertiary studies. About 56 per cent of the trafficked migrants reported that they received training from the trafficker regarding the route, language, immigration process and other details of the destination country.

The dataset is dominated by individuals who had resided in Middle East countries (74 per cent). This may indicate that due to geographical proximity and demand considerations, trafficking into Middle East countries from Bangladesh is highly profitable for traffickers. About 17 per cent of the total sample (that is, 65 respondents) had been in developed countries, such as the United Kingdom, United States of America, Italy, France, and Spain.²³

The main feature of Table 2 concerns the cost of migration. The average total cost for each trafficked migrant was BDT (Bangladeshi Taka) 299981, which was equivalent to US\$3947. To put this figure in perspective, the per capita GDP in Bangladesh in 2012 was only about US\$2000 (in PPP): hence it is clear that the migration process will require considerable organisation of the required funds. Of this amount, on average BDT 218,915 (or 73 percent) was required to be paid as an up-front payment prior to departure. More than 60 per cent of the respondents

²² Among the female respondents, 63 per cent reported that they were working in the household sector as maid servants or housekeepers and were compelled to return due to long working hours and sexual harassment. From the combined sample of males and females, 192 respondents reported that they were cheated by the recruiting agency, either through fake visas or through fraudulent work permit documents. 122 of the trafficked individuals had migrated voluntarily as illegal; they had a contract with the trafficker only to assist them to reach their destination country.

²³ Further detailed description is given in Appendix A, Table A.1.

reported that the funding source for the migration costs was selling agricultural land, while others mentioned loans from relatives, mortgage of houses, savings, remittances, selling a business at home, selling livestock and agricultural crops, and also the use of microcredit from the Grameen bank. About 54 per cent of the migrants reported that they had a shared contract with the traffickers. In most cases, the traffickers gave them the opportunity to repay the debt through instalment payments, but with higher usury. In addition, about 59 per cent of the respondents reported that they paid an amount in excess of the contracted price in order to expedite their departure. This choice, coupled with a liquidity constraint, is often associated with higher payments under the p_2 component of the shared contract, although such deferment will usually require suitable collateral and attract additional interest charges.

The average total cost for each trafficked migrant was BDT (Bangladeshi Taka) 299981, which was equivalent to US\$3947. To put this figure in perspective, the per capita GDP in Bangladesh in 2011 was only US\$1700: hence it is clear that the migration process will require considerable organisation of the required funds. Of this amount, BDT 218915 (or 73 per cent) was required to be paid as an up-front payment prior to departure. More than 60 per cent of the respondents reported that the funding source for the migration costs was selling agricultural land, while others mentioned loans from relatives, mortgage of houses, savings, remittances, selling a business at home, selling livestock and agricultural crops, and also the use of microcredit from the Grameen bank. Another interesting feature of human trafficking from Bangladesh is that it generally happens in the dry season (64.5 per cent). Finally, about 57 per cent of the trafficked individuals reported holding the view at the time of their departure that they had a valid work permit or job offer.

Table 3.1: Variable Definitions

Variables	Definition
Up-front payment, p_1	The price the migrant agreed under the contract to pay prior to departure.
Payment in destination, p_2	Amount of shared contract, or equivalently, the amount the migrant agreed under the contract to pay after arrival in the destination country.
Shared contract	Migration-debt contract. A dummy variable equal to 1 if the contract with the trafficker was a shared contract, and equal to 0 if the contract was a fixed contract.
Extra amount paid, β	The amount of any additional amount of money beyond the contracted price paid before migrating.
TCM	Total cost of migration, $(p_1 + p_2 + \beta)$. This is the total amount of money that the trafficker received from the migrant.
Age	Age in years.
Male	A dummy variable equal to 1 if the trafficked person was a male, otherwise equal to 0.
Married	A dummy variable equal to 1 if the individual was married at the time of migration, otherwise equal to 0.
Rural origin	A dummy variable equal to 1 if the individual was from a rural area at the time of migration, equal to 0 if from an urban area.
Primary education	A dummy variable equal to 1 if ≤ 5 years of schooling, otherwise equal to 0.
Secondary education	A dummy variable equal to 1 if 6–10 years of schooling, otherwise equal to 0.
Higher education	A dummy variable equal to 1 if >10 years of schooling, otherwise equal to 0.
Family size	The number of persons living in the household.
Middle East	A dummy variable equal to 1 if the migrant was trafficked to the Middle East, otherwise equal to 0.
Training provided	A dummy variable equal to 1 if the trafficked individual received any form of emigration-related training from the trafficking networks, otherwise equal to 0.
Departure wait time	Length of time (in months) to departure after the payment of p_1 .
Job offer	A dummy variable equal to 1 if the migrant was offered a job by the trafficker as part of the contract, otherwise equal to 0.
Source of funds	A dummy variable equal to 1 if the cost of migration was managed through selling land, otherwise equal to 0.
Productive assets value	Value of productive assets, that is, agricultural lands of the migrant's household in Bangladeshi Taka (BDT) during the survey year.
Livestock value	Value of livestock of the trafficked household (in BDT) during the survey year.
Crops value	Annual value of harvested crops (in BDT).
Financial assets value	Value of financial assets in Bangladeshi Taka (BDT) during the survey year.
Dry season	A dummy variable equal to 1 if the trafficked person departed in the dry season, and equal to 0 if he/she departed in the rainy season.

Table 3.2: Summary Statistics

Variable	Mean	Standard Deviation
Age	25.529	5.943
Male	0.598	0.491
Married	0.347	0.477
Rural origin	0.575	0.495
Primary education	0.293	0.456
Secondary education	0.539	0.499
Family size	6.920	2.914
Contract payment made in Bangladesh (p_1)	218914.50	190628.50
Contract payment made in destination (p_2)	60145.08	88453.49
Extra payment made in Bangladesh (β)	20920.98	26760.50
Total cost of migration (TCM)	299980.56	242557.10
Middle East	0.741	0.439
Training provided	0.562	0.497
Shared contract	0.539	0.499
Departure wait time	5.876	3.983
Job offer	0.573	0.495
Source of funds	0.606	0.489
Productive assets value	324624.40	257744.10
Livestock value	10860.10	24683.58
Crops value	42626.94	50444.78
Financial assets value	840272.00	746344.70
Dry season	0.645	0.479

Note: Number of observations equals 386.

3.4. Statistical Analyses

3.4.1 Empirical Strategies

Details on the econometric models used in this paper can be found in standard texts (*e.g.*, Greene, 1993; Wooldridge, 2003). Hence only brief comments are provided on how these models are applied in our particular application. There are two outcomes that are modelled, namely the total amount paid to the trafficker, and the use of a migration-debt (or shared) contract. The models of the total amount paid to the trafficker can be estimated using ordinary least squares (OLS). As the total payments to the traffickers are positive, the predictions are constrained to be positive by entering the total payment values into the model in natural logarithmic form.

In the second outcome, the focus is on whether a shared contract is used. Shared contracts are distinguished from fixed contracts by the trafficked individuals

needing to make payments to the traffickers after arrival in the destination country. The value of these payments is p_2 . The decision to use a shared contract is determined by the latent variable p_i , which is the propensity to make payments after arrival in the destination country. This is related in the model to a vector of demographic and human capital characteristics that includes age, gender, marital status, and the level of education (X_i), variables for the particular destination country, the source of funds to cover the costs of migration, whether any job was offered by the trafficker before receiving the down payment, and whether any training was provided by the trafficker (captured by the vector V_i), the value of trafficked person's household assets and endowments, such as livestock and agricultural crops, and a season dummy (denoted by Z_i). This model can be written as:

$$p_i = \alpha + \gamma X_i + \delta V_i + \mu Z_i + \varepsilon_i \quad (1)$$

p_i is not observed. However, we observe the additional monies actually paid (p_{2i}). p_{2i} will have the following characteristics:

$$p_{2i} > 0 \quad \text{iff} \quad p_i > 0; \quad p_{2i} = 0 \quad \text{otherwise.}$$

In other words, when the latent variable p_i crosses the threshold 0, a shared contract will be used and a payment made after arrival in the destination country. Otherwise p_{2i} is zero.

The estimating equation for the deferred portion of the trafficker's fee is:

$$p_{2i} = \phi Y_i + \varepsilon_i \quad (2)$$

where Y_i refers to the encompassing set of individual characteristics included in equation (1).

A Tobit model is used in the estimation. One potential disadvantage of the Tobit model is that the likelihood of using a shared contract and the deferred portion of the shared contract are closely linked. In particular, the direction of the impact of any variable on these outcomes must be the same, and the magnitudes are related. There are no such restrictions in the Heckman two-step model. Wooldridge (2003) suggested that the extent to which this poses a problem can be ascertained by estimating a Tobit model along with the first-step of the Heckman model (the probit

model) and comparing the sign and magnitude of the coefficients of the explanatory variables that are statistically different from zero in both models. We adopt this approach below.

Hence, the Tobit model can be specified as:

$$p_{2i}^* = \varphi Y_i + \varepsilon_i \quad \varepsilon_i \sim N(0, \sigma^2) \quad (3)$$

where

$$\begin{aligned} p_{2i} &= p_{2i}^* \quad \text{if } \varphi Y_i + \varepsilon_i > 0 && \text{(the observed values)} \\ &= 0, \quad \text{if } p_{2i}^* \leq 0 && \text{(the unobserved values)} \end{aligned}$$

In this model, p_{2i}^* is the latent Tobit index, whereas p_{2i} is the recorded value of the deferred payments made under the shared contract by the trafficked person i . So when $p_{2i}^* > 0$, $p_{2i} = p_{2i}^*$ and when $p_{2i}^* \leq 0$, $p_{2i} = 0$. Then our objective is to estimate φ using the maximum likelihood method, where Y_i is a $q \times 1$ vector of observed explanatory variables for individual i , φ is a $1 \times q$ vector of regression coefficients and ε is an unobserved random variable.

There are features of the marginal effects in the Tobit model that need to be noted.²⁴ These stem from the fact that the estimated coefficients in the Tobit model refer to the impact on the latent Tobit index (p_{2i}^*). Hence, if we compute the

marginal effects like other regression models we will get $\frac{\delta E(p_{2i}^* | Y_i)}{\delta Y_i} = \varphi$. As we do

not observe p_{2i}^* this marginal effect on the Tobit latent index may not be all that informative. Usually we will be more interested in the marginal effect on the expected value of the recorded value of the deferred component of the cost of migration. When an explanatory variable changes, this will change the fraction of the group who used shared contracts, and it also affects the amount of deferred monies paid by those who use a shared contract. That is, there will be effects on both the censored (those who are not using a shared contract) and the uncensored (paying a deferred component of the total cost of migration) observations. In this case, with censoring at zero and normally distributed disturbances, the marginal effect is found

²⁴ There are a number of marginal effects that can be computed using the Tobit model (Greene, 1993; Wooldridge, 2003). Three are computed here, namely the effect on: (i) the probability of using a migration-debt contract; (ii) the expected value of the deferred portion of the migration-debt contract conditional on using such a contract; and (iii) the unconditional expected value of the deferred portion of the migration-debt contract. See Appendix B.

to be: $\frac{\delta E(p_{2i}|Y_i)}{\delta Y_i} = \phi \Phi\left(\frac{\phi Y_i}{\sigma}\right)$, where $\Phi(\cdot)$ is the standard normal cumulative distribution function.

As well, a probit model of the likelihood of using a shared contract (*i.e.*, the first step of the Heckman two-step approach noted above) is estimated. In this instance, the dependent variable is the binary indicator P_2 , which takes the following values

$$P_{2i} = 1 \text{ iff } p_{2i} > 0, \text{ and } P_{2i} = 0 \text{ otherwise.} \quad (4)$$

It should be noted that while the data set utilised is extremely rich, it has a number of limitations. In particular, the data set does not contain details on the networks that migrants may have used for information. In their study of smuggling, Friebel and Guriev (2006, p.1089) note that most migrants “...benefit from the information or relatives or friends who have migrated before. Some pieces of information may be lacking, but this can only be a transitory phenomenon”. Enclaves and networks have been shown to matter to a wide range of other more traditional migration decisions, including location and language (Bauer, Epstein and Gang, 2005; 2009). It is likely that some of the trafficked persons used migration-debt contracts simply because friends or relatives had done so. Joarder and Miller (2013) present descriptive evidence that this is the reason why some trafficked persons pay bribes to traffickers. Developing the role of networks in the study of trafficking is an avenue for future research.

3.4.2 The Level of Payments to Traffickers

Table 3.3 contains results from the OLS estimation of the determinants of the total payments made to the traffickers. Three models are presented. The first is the benchmark model that contains only one wealth variable, the value of the migrants’ productive assets. In the second model, additional wealth variables are included in the specification, for the value of livestock, annual value of harvested crops, and for the value of financial assets. As the wealth-type variables could be related, this sequential approach will enable an assessment of whether multicollinearity is a problem. The third model includes variables for whether a shared contract was used, and for whether bribes were paid to the trafficker prior to departure. It is

acknowledged that these variables will be endogenous, and the final set of results should be viewed as having descriptive content only.

The R^2 in these models range from 0.57 to 0.62. This is quite a high level of explanation for cross-sectional data. Nine of the 14 explanatory variables (64 per cent) are significant in the first model, and most of the significant coefficients are of the expected sign. The total payments made to traffickers decline with age, by 1.3 per cent per year of age. Young workers have greater potential lifetime value in the labour market, and the results here suggest that traffickers vary their fees with potential earnings capacity in mind. It is noted that an initial set of estimations included the age information in quadratic form, but only the linear term was statistically significant, which is consistent with this lifetime economic capacity explanation. Males make 30 per cent higher payments than females. It is generally argued that males allocate a greater portion of their lifetime to paid labour market activities, and as a result will have greater potential lifetime earnings than females. This greater value of lifetime earnings permits a higher fee to be charged. While many trafficked females enter into prostitution in the destination country, it appears that either the net returns from this do not exceed those to the typical male labour market activities, or traffickers simply cannot anticipate, and so appropriate (part of), this source of earnings.

The Table 3.3 findings also reveal that married migrants pay more to traffickers than their single counterparts. This could be a reflection of a greater capacity to pay, given a pooling of the resources of the husband and wife, or it could reflect a greater need for migration to support the household, which the trafficker is able to exploit when setting a fee. Migrants from rural areas are associated with 16 per cent lower payments. Rural areas in less developed countries are typically relatively poor, and it seems that this is what is being reflected here. This suggestion is supported by the findings in the second set of results: when additional wealth variables are included in the model, the coefficient on the rural origin variable is no longer statistically significant.

The capacity to pay theme apparent in the estimated coefficients for the age, gender, marital status and rural origin variables is also clearly evident in the estimated coefficients on the educational attainment variables. Thus, migrants who have fewer than six years of schooling have total payments that are 22 per cent lower than migrants with more than 10 years of schooling. Similarly, migrants with 6-10

years of schooling have total payments that are 16 per cent lower than the better educated benchmark group.

The variable Middle East captures one important destination region of the trafficked migrants. It has a negative, sizeable, and highly significant, coefficient in each of the models. The pronounced negative impact on the total payments made could reflect two sets of influences. First, it could reflect the modest earnings in the Middle East countries, and the more limited scope to stay there permanently compared to other countries. It could also reflect the proximity of Middle East countries, which will be associated with lower costs for the traffickers.

A further variable which is statistically significant, but which has an unexpected sign, is the variable for whether the migrant was made an offer of a work permit prior to departure. Traffickers will incur additional costs in providing a job offer, and *a priori* it was expected that these costs would be passed on to the migrant in the form of higher fees. Contrary to this, the results here imply that migrants who need a job offer to entice them to enter into a contract with the traffickers have a lower reservation price. Future surveys need to enquire into the reasons why traffickers appear to offer various levels of service to trafficked individuals.

Table 3.3: OLS Estimates of Determinants of the Total Payments Made to Traffickers (Dependent Variable: Natural Logarithm of Total Payments Made)

Variables	(i)		(ii)		(iii)	
	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value
Constant	13.1119***	88.04	12.8108***	75.95	12.6811***	71.10
Age	-0.0126**	-2.34	-0.0138***	-2.60	-0.0136**	-2.49
Male	0.3047***	4.72	0.2587***	4.10	0.2789***	4.55
Married	0.0950*	1.77	0.0788	1.50	0.0618	1.19
Rural origin	-0.1591***	-2.96	-0.0408	-0.73	-0.0359	-0.65
Primary education	-0.2227***	-2.81	-0.1747**	-2.47	-0.1519**	-1.96
Secondary education	-0.1573**	-2.31	-0.1245*	-1.90	-0.0886	-1.35
Family size	-0.0011	-0.14	-0.0019	-0.26	-0.0021	-0.29
Middle East	-0.6255***	-7.17	-0.5403***	-6.18	-0.5021***	-5.81
Training provided	-0.0525	-1.11	-0.0296	-0.65	-0.0305	-0.68
Depart wait time	0.0066	1.05	0.0042	0.71	-0.0027	-0.44
Job offer	-0.1902***	-3.77	-0.1589***	3.22	-0.2271***	-4.46
Source of funds	0.0369	0.78	0.0611	1.30	0.0647	1.41
Productive assets value/10000	0.0043***	4.67	0.0041***	4.34	0.0039***	4.26
Dry season	0.0350	0.76	0.0494	1.11	0.0558	1.25
Livestock value/10000	(a)		-0.0054	-0.48	-0.0024	-0.22
Crops value/10000	(a)		0.0022	0.52	0.0006	0.17
Financial assets value/10000	(a)		0.0020***	4.79	0.0020***	4.85
Shared contract	(a)		(a)		0.1219**	2.44
Extra payment made	(a)		(a)		0.1377***	2.86
N	386		386		386	
R ²	0.5677		0.5980		0.6180	
F	47.64		53.19		50.79	

Notes: The omitted education category is higher level of education. *** indicates significance at the 1% level, ** indicates significance at 5% level and * indicates significance at the 10% level. (a) = variable is not entered into the estimating equation.

The final variable that is statistically significant in the first model is the value of the migrant’s productive assets. Each BDT 10K is associated with an increase in the total payments made to the traffickers of one-half of a per cent.

It is noted that the variables for whether the migrant was provided with training prior to departure (Training provided), the length of time between the making of the down payment and the actual departure from the source country (Depart wait time), family size, source of the funds to cover the cost of migration was the selling of land (Source of funds), and the variable for whether the move was during the dry season were statistically insignificant. This suggests that traffickers are setting a fee for the illegal passage that varies with easily observed characteristics

(gender, age, marital status) but which does not vary with details of the migration process (training provided, time spent in the trafficker's queue). The need for training and the actual timing of the move may only become apparent after the contract price is agreed.

In the second specification, the values of livestock, crops and financial assets are included in the estimating equation. The inclusion of these variables is associated with a diminution of the estimated effects of a number of the variables included in the column (i) model, and a reduction to statistical insignificance of the estimated effects associated with being married and of having a rural area of residence. In other words, the married and rural area variables in the column (i) specification were mainly capturing wealth influences, specifically the pooling of resources to cover the costs of migration (married) and residence in a relatively poor region (rural). Notably, the inclusion of the extra wealth variables has almost no effect on the estimated effects of the productive assets variable, indicating that any correlation among these variables is not revealed in exaggerated coefficients or reduced statistical significance of the original wealth variable. Of the three extra variables, only the financial assets variable is statistically significant. The estimated partial effect of greater financial asset wealth is, however, only one-half of the effect associated with productive assets.

The final model, which is presented for descriptive purposes only, contains variables for whether the trafficked migrants entered into a migration-debt (shared) contract, and for whether they made any extra payments prior to departure. Both variables are associated with around 12-14 per cent higher total payments. This indicates that the use of these alternative payment types does not simply mean there is perfect substitution across the various components of the total payments. Each, or the circumstances surrounding the use of each (such as a shared contract attracting additional interest charges), is associated with a higher total payment.

Next we will analyse the determinants of the migration-debt-contract (p_2). Table 3.4 presents the probit and generalised Tobit results regarding the decision to opt for a contract containing a deferred component of the fee, and also of the level of p_2 . Marginal effects from the Tobit model are presented in an Appendix 3.

3.4.3 The Decision and the Level of Migration-Debt Contract

The factors that are held to determine the migration-debt contract are the same as those used in the analysis of the total costs of migration. Among the individual characteristics, age is significantly related to the migration-debt contract outcome. Moreover, it is evident that, unlike in the model of the determinants of the total cost of migration, the relationship between the probability of entering into a migration-debt contract and age takes the form of an inverted-U, with the peak occurring at around 28 years of age. Those in the 20-40 age range have a higher probability of entering into a shared contract than those who are more than 40 years of age. Shared contracts for older individuals are likely to be unprofitable for traffickers, owing to the lower probability of payment of the deferred component of the contracted price.

The 'male' variable has a negative coefficient, and it is significant at the conventional level. The negative impact indicates that female illegal migrants are more likely to take the opportunity of a shared contract than their male counterparts, and this is consistent with the evidence in Rahman (2012). This finding accords with the repeated write-ups in the popular press over conditions in the sex industry. Another important determinant of the incidence of a migration-debt contract, and of the monies paid under such a contract, is marital status. The relationship between the incidence of a shared contract and marriage is positive and significant. This may be due to a risk effect. The intuition behind this suggestion is that, all else equal, the middleman can attempt to demonstrate trustworthiness through a shared contract, whereas being relatively risk averse, a married migrant would have a stronger preference for a shared contract than his unmarried counterpart.

Turning to the characteristics of the traffickers, it is observed that high recruitment fees (captured by the cost variable 'TCM') and any additional amounts beyond the contracted price (captured by the 'Extra payment made' variable) are both associated with positive coefficients and are highly significant (at the 1 per cent level) as determinants of shared contracts (both the incidence and the amount). Both findings match popular descriptions of human trafficking. Another significant variable is the presence of a job offer prior to departure. Such a job offer at the initial stage of recruiting the illegal migrant is likely to lead to the use of a shared contract. Thus, it seems that the job offer variable is a good proxy of the *patron-client relationship*. Finally, it is generally argued that the migrant's dependent position,

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their low educational attainment and their lack of information facilitates exploitation by delaying the departure of the migrant. This view is captured by the variable ‘Depart wait time’. It is associated with highly significant, positive effects in both the models of the incidence of a shared contract, and of the deferred payment component of the price under a shared contract.

Table 3.4: Probit and Tobit Estimates of p_2 (The Decision and Level of Migration-Debt Contract)

Variables	1. Probit				2. Generalised Tobit	
	Coefficient	Asymptotic t-value	Marginal Effect	Asymptotic t-value	Coefficient	Asymptotic t-value
Constant	-4.3840***	-3.46			-427649.8***	-3.76
Age	0.1932**	2.29	0.0767**	2.29	17146.77**	2.17
Age squared	-0.0035**	-2.51	-0.0014**	-2.51	-319.028***	-4.21
Male	-0.3980*	-1.93	-0.1563**	-1.97	-40426.91**	-2.57
Married	0.3626**	1.96	0.1422**	2.00	37280.34**	2.52
Rural origin	0.0517	0.29	0.0205	0.29	12995.94	0.88
Primary education	0.3045	1.31	0.1195	1.34	20907.76	1.06
Secondary education	-0.1072	-1.14	-0.0425	-0.51	-284.76	-0.02
Family size	0.0034	0.14	0.0013	0.14	1891.18	0.97
TCM/10000	0.0162**	2.43	0.0062**	2.43	3539.84***	4.80
Extra payment made	0.5402***	3.49	0.2126***	3.57	36207.90***	2.70
Middle East	0.2768	1.14	0.1100	1.14	19598.94	0.98
Training provided	0.2348	1.59	0.0932	1.59	9923.73	0.80
Departure wait time	0.0615***	3.30	0.0244***	3.30	4487.86***	2.91
Job offer	0.8397***	4.54	0.3252***	4.81	60912.00***	3.65
Source of funds	-0.1934	-1.29	-0.0765	-1.30	-13237.19	-1.06
Productive assets value/10000	-0.0023	-0.50	-0.0009	-0.50	-214.25	-0.47
Livestock value/10000	-0.0599*	-1.95	-0.0238*	-1.95	-6120.45**	-1.97
Crops value/10000	0.0201	1.27	0.0080	1.27	1216.43	0.97
Financial assets value/10000	0.0007	0.42	0.0003	0.42	203.50	1.19
Dry season	0.1926	1.28	0.0765	1.28	12455.33	0.97
N	386				386	
Wald χ^2 (20)	90.11					
Prob > χ^2	0.0000					
Log likelihood	-215.3249				-2819.3358	
Left-censored observations					177	

Notes: The omitted education category is higher level of education. *** indicates significance at the 1% level, ** indicates significance at 5% level and * indicates significance at the 10% level. dy/dx is for a discrete change of a dummy variable from 0 to 1.

The analysis of the trafficked migrant’s household labour and asset endowments reveals that relatively well-off households are less likely to have to

resort to the use of a shared contract. The value of livestock has a significant effect on the likelihood of using a shared contract, indicating that poorer respondents are more prone to the use of a migration-debt contract than are the relatively well-off migrants. The variable ‘Crops value’ captures the annual value of harvested crops in local currency (Bangladeshi Taka), and is a proxy of the illegal trafficked person’s profession. The sign of this variable is positive, and so indicates that agricultural workers tend to be more likely to prefer shared contracts. Nevertheless, this variable is not statistically significant at conventional levels. A similar description applies to the ‘Dry season’ variable. Surprisingly, the ‘Source of funds’ variable, which records whether the cost of migration is managed by selling productive assets, such as agricultural lands, houses, or businesses, is not a statistically significant determinant of p_2 .

3.5 Conclusion

Human trafficking is one of the major economic and social problems facing contemporary society. The International Labor Organization (2012) estimated the number of persons in forced labor as a result of trafficking over the period 2002-2011 at 20.9 million. Despite a migration flow of this magnitude, human trafficking is an under-researched topic. The current paper provides findings that address this gap in the literature, and highlights areas for future research and data collection.

Two aspects of the illegal migration process are examined. The first of these relates to the total sums of money that trafficked individuals pay to their traffickers. The second aspect relates to the use of migration contracts comprising both an up-front payment and a deferred payment (that is, a shared contract) as opposed to the contract based only on an up-front component.

The empirical research is based on data on illegal migrants from three field surveys conducted in Bangladesh from April 2009 to November 2010. The results show that the amounts of monies paid to the traffickers are related to the age, gender, educational attainment, marital status and wealth of the trafficked individuals, as well as the nature of the migration contract (shared or up-front payment only), whether the individual was made a job offer prior to departure, and the country of destination. The characteristics of the trafficked persons (their age, gender and educational attainment), and the main features of the trafficking process (costs of

migration and the additional payments beyond the contracted price) are the key determinants of the incidence of shared contracts, and of the amount of the deferred component under these contracts. The migrant's labour and asset endowments are also influential in this regard, but to a far lesser extent than the individual characteristics and the cost and extra-payment factors.

The policy initiatives aimed at human trafficking in Bangladesh at the present time, which treat trafficking as a criminal offence similar to murder, do not affect the variables that the empirical testing in this paper suggests are closely linked to this phenomenon. These need further consideration, through, for example, making it less profitable to engage in human trafficking and to be trafficked. In this regard, the results in this paper show that data that will support empirical investigation into human trafficking can be collected. Future data collection can draw upon the questionnaire used in the current study. This could be augmented with further questions relating to the period following the return to the origin country. This will provide a basis for a better evaluation of the lifetime benefit or loss of the trafficking experience. It could also focus on intentions for further illegal migrations. Additionally, future data collection should seek to ascertain the circumstances under which traffickers provide various services, such as training for the illegal passage and job offers. Such data collection will help understand the motivations and effects of the growing phenomenon of human trafficking.

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Appendix 3

A: Supplementary Data Description

Table 3.5: Country of Destination of Returned Migrants

Country Name	Number of respondents
UAE	104 (26.94%)
Saudi Arabia	106 (27.46%)
Kuwait	19
Oman	10
Malaysia	18
Bahrain	7
Iran	1
Italy	8
England	43 (11.14%)
USA	6
Australia	1
Iraq	1
France	2
Turkey	2
South Africa	2
Qatar	37 (9.59%)
Singapore	1
Libya	14
Japan	1
Korea	1
Spain	1
Maldives	1
Total	386

B: Supplementary Tables

Table 3.6: Marginal Effects from Tobit Model (for migration-debt-contract)

Variables	Probability of being uncensored ⁽ⁱ⁾	Marginal Effect for: Expected value of the dependent variable conditional on being uncensored ⁽ⁱⁱ⁾	The marginal effects for the unconditional expected value of the dependent variable ⁽ⁱⁱⁱ⁾
Age	0.0658** (2.20)	6848.35** (2.20)	9653.84** (2.20)
Age squared	-0.0012** (-2.45)	-127.41** (-2.44)	-179.61** (-2.45)
Male	-0.1532*** (-2.67)	-16548.71** (-2.55)	-23356.48** (-2.56)
Married	0.1409*** (2.60)	15407.22** (2.44)	21783.91** (2.44)
Rural origin	0.0499 (0.88)	5162.38 (0.89)	7267.61 (0.89)
Primary education	0.0795 (1.08)	8564.98 (1.04)	12115.08 (1.04)
Secondary education	-0.0015 (-0.02)	-153.68 (-0.02)	-216.65 (-0.02)
Family size	0.0073 (0.98)	755.33 (0.98)	1064.76 (0.98)
C/10000	0.0136*** (4.37)	14137.99*** (4.51)	19929.74*** (4.43)
Extra payment made	0.1389*** (2.69)	14218.73*** (2.79)	19931.64*** (2.81)
Training provided	0.0381 (0.80)	3949.87 (0.81)	5563.43 (0.81)
Depart wait time	0.0172*** (2.94)	1792.44*** (2.98)	2526.72*** (2.99)
Middle East	0.0756 (0.96)	7620.53 (1.00)	10676.60 (1.01)
Job offer	0.2319*** (2.94)	23815.67*** (3.70)	33217.17*** (3.75)
Source	-0.0507 (-1.06)	-5330.86 (-1.04)	-7523.46 (-1.04)
Productive assets value/10000	-0.0008 (-0.48)	-85.57 (-0.47)	-120.62 (-0.47)
Livestock value/10000	-0.0235* (-1.95)	-2444.48** (-1.97)	-3445.889** (-1.97)
Crops value/10000	0.0047* (1.75)	485.84* (1.74)	684.87* (1.74)
Financial assets value/10000	0.0008 (1.20)	81.28 (1.20)	114.57 (1.20)
Dry Season	0.0479 (0.98)	4923.90 (0.98)	6925.54 (0.98)

Notes: Asymptotic t values are in the parentheses. *** indicates significance at the 1% level, ** indicates significance at 5% level and * indicates significance at the 10% level.

(i): The marginal effects for the probability of being uncensored,

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(ii): The marginal effects for the expected value of the dependent variable conditional on being uncensored, $E(y \mid a < y < b)$ where a is the lower limit for left censoring and b is the upper limit for right censoring.

(iii): The marginal effects for the unconditional expected value of the dependent variable, $E(y^*)$, where $y^* = \max(a, \min(y, b))$, where a is the lower limit for left censoring and b is the upper limit for right censoring.

C: Overview of the Questionnaire

This Appendix contains an overview of the Questionnaire used for data collection. Summary comments are provided on two parts, and greater detail on three parts. The questionnaire was in Bangla.

PART A collected contact details, demographic data and the dates of departure and return from all respondents.

PART B collected details on the migration process using six questions.

1. How did you enter into the migration process: (a) Personal contract (b) Employment agency: (i) Government (ii) non-Government (c) Travel agency (d) Local Dalal (e) Newspaper advertisement (f) Other (specify)
2. (a) Did you migrate with a legal passport? Y/N
(b) If not, how did you get the passport? – (a) Through paying a bribe in the passport office (b) Photo substitution (c) Agent managed the passport (d) Don't know
3. How did you get the visa? – (a) Fake documents (b) Collected from the Embassy by me (c) Collected from the Embassy by the agent (d) Visa was sent from abroad (e) Without visa (f) Don't know
4. Was there any Akama/job offer before your departure or was it a free visa?
5. Did you know before your departure that you were migrating as an illegal migrant? Yes/No
6. If not, when did you realize that you were an illegal migrant: (i) in Dhaka Airport (ii) During Transit (c) In the destination?
7. Did you receive any training from the agent? (Specify)

PART C contained 25 questions covering the person's age and family circumstances at the time of first migration, the costs of migration, and details on the work abroad. It was only addressed to the subset of immigrants who were categorized as trafficked persons.

PART D (IOM Trafficking)

1. How did you enter the process or who contacted you or who did you contact first to get you the offer to go to abroad?
2. Was there any third person between you and the recruiting agent (who you both trusted) associated with the contract payment?

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3. What was the contract with the dalal/middleman/ travel agent? – (a) Pay the whole amount before departure, or (b) Shared between you and the dalal (Debt Bondage) .
4. In the case of a shared contract, how did you pay the remaining portion?—(a) After reaching the destination, the third person paid it on your behalf (b) Paid in instalment from income abroad with interest.
5. Did you need to mortgage any of your assets to the trafficker for the debt-contract? If yes please specify.
6. Please tell us how was the cost of migration managed?
7. How long did you wait before your departure? (in months)
8. Did you pay any amount beyond the contract to expedite the process? If so, after how long (please specify)? On what ground did the trafficker ask you to pay an amount beyond the contract? Indicate multiple options if necessary from: (1) To pay the immigration authority; (2) To get Akama/job contract; (3) To get police clearance, forging passport, BMET clearance; (4) Told that all other migrants also paid; (5) Did not ask for money but created the situation; (6) Others (please specify).
9. If the migrant was a victim of trafficking, was the type of trafficking in country or transnational?—(a) In-country (b) Transnational (c) Both.
10. Who received you from the airport? – (a) Employer (b) Agent of the local dalal (c) Migrant broker (d) I went to the destination with the local dalal (e) My local people/relatives (f) No body.
11. This question collected details on all movements across borders.
12. Which type of exploitation compelled you to return? The respondent was presented with a list of eleven types, and asked to indicate if they had experienced the specific types of exploitation, and if so, by whom. The types were: (1) Sexual exploitation/harassment; (2) Passport taken away; (3) Excessive working hours; (4) No overtime payment; (5) No holidays; (6) Low or no payments; (7) Salary was not paid for at least six months; (8) Migrated with legal documents but when reached the destination documents were found to be fake; (9) Violation of contract (employed as maid servant which was not in the contract); (10) False promises or deception (such as job arrangement, visa etc.); (11) Others please specify).

PART B
MIGRATION AND REMITTANCES

PAPER III: CHAPTER 4

Remittances: Migrant's Obligation or Choice? Evidence Using Matched Samples²⁵

ABSTRACT

Migration decisions are jointly determined by a migrant and their home household while the decision and amount to remit are predominantly determined by the migrant. Migrants remit to their home households for consumption smoothing, investment, and/or insurance. In addition, they also remit to persons outside their home households or other social organisation presumably for social networking reasons. The former can be regarded as “obligatory” transfers and the latter as “choice” (or “voluntary”) transfers. We test whether there are significant differences in the drivers of remittances across these two types: by the type of migration (permanent versus temporary); migrant's characteristics; and home household's characteristics. The relevance of the theoretical model is tested using multinomial logistic regression. Results are based on matched samples collected in 2012 and 2013 on Bangladeshi migrants in the UK and Malaysia, and from their families in Bangladesh. Our findings broadly suggest that obligatory transfers are mainly motivated by altruism and insurance while choice or voluntary transfers are motivated by exchange and investment motives.

Keywords: Obligatory and voluntary transfers, remittances, matched samples

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4

4.1 Introduction

Migration decisions are typically not made by the individual alone, but rather jointly within the household/ family. Thus individuals act collectively, not only to maximize income but also to minimize risks and to loosen constraints associated with a variety of market failures (Stark and Bloom, 1985; Stark, 1984; Katz and Stark, 1986; Lucas and Stark, 1985; Stark, 1991; Massey *et al.*, 1993). This phenomenon is known as New Economics of Labour Migration (NELM). Within NELM, migration is recognised as an informal familial arrangement, with benefits in the areas of risk-diversification, consumption smoothing, and intergenerational financing of investments; and remittances are a central element of such implicit contracts.

Considering a migrant's remittances as purely private transfers, remittances can be categorised into two broad categories: "obligation" (or "compulsory") and "choice" (or "voluntary") and here we examine the motives to remit based on these categories. In the case of obligatory transfers, migrants would remit only to their parents, siblings, children or spouse. Thus obligatory transfers are those between close family members. It is assumed that such transfers are motivated by: altruism (migrants care about the well-being of their families, and hence remit part of their

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income); exchange (a version of the self-interest motive, which can be explained by assuming that remittances simply 'buy' various types of services, such as taking care of the migrant's assets (such as land, and cattle) or relatives (children, elderly parents at home); future inheritance (amounts in excess of a "usual" amount to encourage higher future inheritance levels); insurance (migrants remit to insure their family against adverse risks and shocks at home); and investment (migrants remit either to invest at home or to receive potential family bequests).

In the case of voluntary transfers, migrants remit not only to persons outside their own household (such as poor relatives or friends) but also to the community (such as to charitable organisations, and even to political parties). It could also be the case that many migrants, particularly in the case of permanent migrants, have no members of their immediate family remaining in their original country. Here, remittances could easily be treated as voluntary (or "choice"). We assume that voluntary transfers of such remittances are motivated by social network issues (the configuration of relational ties connecting the migrant and the remittance recipients). In addition, voluntary transfers can take place between close family members even if more than one member of the same household migrated and remits. Moreover, a large part of migrants' earnings is spent on contact with the home family (through telephone, internet or visiting the family) (Stark, 1995). Such spending could also be viewed as a voluntary transfer. Stark (1995, p.103) argued that migrants may remit to non-family members to protect their wages from being eroded by the presence of fellow migrant workers in a migrant pool whose members receive a wage based on average product rather than on marginal product. According to this view, voluntary transfers protect the earnings of the migrant from being eroded by the presence of other potential workers in the same pool.

Due to high unemployment at the origin, lower level of education, imperfect capital markets, and low wages in the agricultural and industrial sectors, semi-skilled and unskilled workers try to escape from poverty by migrating abroad through legal or illegal channels. Migration and the consequent remittances in this case could easily be regarded as a family survival strategy. The remitting behaviour of this group may not follow any of the exchange, inheritance or even the investment motives as they are from a marginalised class, and their parents may have no bequests. Moreover, they generally sell their own properties such as land, livestock, and ornaments for migration, and even enter into debt-bondage with travel agents or

migrant brokers. The majority of the extended families from the rural areas of developing countries, in particular from the Indian Subcontinent, fall into this category. Thus they remit only to maintain their home family's consumption and other basic needs (Joarder and Hasanuzzaman, 2008).

On the contrary, migrants from relatively well-off families from developing countries are mainly high skilled, have prior job experience, and host country's language proficiency. In this case, motives to remit may follow the standard theories. This group of migrants may not remit for consumption smoothing of their origin family but rather to maintain social status or ensure group membership.

The current paper differs from the existing literature by considering intra- and inter-household transfers and also by considering the specific reasons for remitting. If the migrant remits for his origin household's consumption, children's or siblings' education, to pay for medical expenses and to repay loans and debts, then remittances are defined as obligatory transfers. But if remittances are sent for purchasing land or building houses, to charity, to friends or non-relatives, or for religious purposes, then we call these voluntary transfers. Based on these, we examined the determinants and motives to remit. In addition, this article contributes a theoretical model as well.

4.2 Literature Review

The majority of the empirical studies on remittances have considered remittances as typical intra-household transfers from members of a family who have emigrated to those who have remained behind, and based on these, motives to remit are analysed. Lucas and Stark (1985) were among the first to suggest three broad categories of motivations to remit: pure altruism; pure self-interest; and a combination of the two (tempered altruism and enlightened self-interest). Recently, Rapoport and Docquier (2006) summarise the motives to remit as altruism, exchange, insurance, investment, and inheritance using earlier empirical and theoretical works. The altruistic transfer increases with the migrant's income and degree of altruism, and decreases with the recipient's income and, more interestingly, degree of altruism (Stark, 1995; Funkhouser, 1995). In contrast to the altruism motive, the exchange motive predicts a positive correlation between the size of transfers and the recipient's income. Evidence from the empirical tests of the

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altruism and the exchange motives has been mixed. Agarwal and Horowitz, (2002); McGarry, (2000); Funkhouser, (1995); and McGarry and Schoeni, (1997) find a negative and significant correlation between transfer amounts and recipient's income. On the contrary, Cox (1987), Cox and Rank (1992) from US data, Secondi (1997) using data for China, Altonji, Hayashi and Kotlikoff (1997) using US data, and Hayashi (1995) who examines Japanese data, reject the altruistic motive and find evidence of exchange motive.

The failure of empirical studies to identify the more appropriate of the two rival motives suggest that no single approach can provide a sufficient explanation for the motives for remitting, and suggests that an integrated approach may better explain the motives to remit (Schwarz, 2006). Lucas and Stark (1985) and Stark (1995) argue that motivations for remitting can be explained by a combination of altruism and exchange. This is also true for other motives. For example, Osili (2007) and Piracha and Saraogi (2012) find that altruism and investment are the two possible motives behind remittance flows to Nigeria and Moldova respectively. Using Mexican data, Pozo (2005) argues that the altruistic motive can coexist with the insurance motive where immigrants may send money home for both charitable reasons and to contract informal insurance arrangements. Kazianga (2006) tests the transfer behaviour of Burkina Faso and found that, along with risk sharing, altruistic transfers are apparent for the middle-income class, but not at low incomes. Thus motives to remit are not mutually exclusive and one motive can easily overlap the others. Rapoport and Docquier (2006) argue that the dominance of altruism may render other motives undetectable or immaterial. Chu and Yu (2006) argue that neither the neo-classical nor the NELM motive can fully explain the motive to remit, and instead proposed a theory of social network (*i.e.*, kinship) to explain the feedback of children to their parents. They tested this empirically using data from Taiwan. They argue that a kinship network is the major driving force behind the children's motive to transfer, instead of the lure of assets held by the parents.

According to Meyer *et al.* (2012, p.445), "...the motivations to remit even within a single sample analysed are likely to differ. Whereas for one pair of migrants and corresponding household of origin, the migration-cum-remittance livelihood strategy may be an investment in the future of the household, the migrant in another pair may remit with the intention of ensuring that they are not forgotten when inheritances are divided up. And remittances may even flow because of a coexistence

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of motives within a single pair: migration and remittance may represent an investment but at the same time serve as an insurance mechanism in times of hardship. This mix-up of motives within a sample or within cases makes it extremely difficult to identify specific/individual motivations. Likewise, motives may change over time". Based on these grounds, Meyer *et al.* (2012) argue that the motives to remit should be analysed by linking three overarching socio-economic driving forces: social relations between migrants and the origin household; the need for financial support of the origin household; and the financial capability of the migrant to remit. They find support for those overarching determinants from Kosovar migrants in Germany and their origin households. However, importantly for the current paper, connecting these three driving forces will only determine the motives for compulsory remitting.

A large portion of migrants' remittances are sent to persons outside their own household (such as poor relatives or friends) and also to the community (such as to charitable organisations, and even to political parties). The existing literature on voluntary inter-vivos transfers deals with gifts and charity considering mainly developed countries and from parent to child (Cox, 1987, Altonji *et al.*, 1997, Wolff, 2001). But developing countries evidence suggests that inter-generational transfers go mostly from adult children to parents and not the other way around (Knowles and Anker, 1981; Secondi, 1997). According to Secondi (1997, p.491), "...there are a number of reasons why the direction of private transfers tends to be different in less developed countries, the most important being that extensive social security systems are usually absent, so that old-age support is provided mostly by children". He also argued that private transfers between relatives may not be intergenerational such as remittances by migrants to their wives and dependents.

Remitting behaviour of migrants based on obligation and choice is so far an under-researched topic. To the best of our knowledge the sole paper is Dostie and Vencatachellum (2004). Dostie and Vencatachellum (2004) analyse compulsory and voluntary remittances among 500 domestic female workers in Tunisia. Compulsory remittances are made from those who are younger than 18, and this group tends to remit their full wages to their parents, or brothers. Thus they defined compulsory and voluntary remittances based on the full transfer of wages and partial transfer to their origin family. Their estimates suggest that compulsory remittances are increasing in the number of young females in the domestic worker's family but voluntary

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remittances are independent of the number of young sisters, while they increase with the number of brothers.

It is generally conjectured that the decision to remit and the amount remitted are correlated with whether an individual is a temporary migrant or a permanent migrant. For example, Amuedo-Dorentes and Pozo (2006) argue that undocumented immigrants remit more relative to documented immigrants as unauthorised immigrants endure a more precarious residency in the US and less secure jobs. With permanent migration, or even in the case of family migration, it is possible that the migrant has no immediate ties with the home household. In that case remittances could easily be voluntary and altruism may dominate over other motives. In case of temporary migration, migrants' remittances can be compulsory, voluntary or both. In this case migrants not only remit for home households' consumption but also remit to buy goods and services at the place of origin (Cox *et al.*, 1998). Regarding this, some studies suggest that remittances increase with time spent away from home (de la Brière *et al.*, 2002; Agarwal and Horowitz, 2002; Lucas and Stark, 1985), while others suggest that they decrease or unrelated to time (Menjívar, 1998; Simati and Gibson, 2001; Durand *et al.*, 1996; Brown, 1997; Duraisamy and Narasimhan, 2000).

Obligatory and voluntary transfers may be substitutes if both provide similar services such as informal mutual insurance. However they may be complementary due to altruism, unobserved heterogeneity and other factors such as resource constraints, social norms, demonstration effects, technology and shocks (LaFerrara, 2003; Deb *et al.*, 2010). Despite a growing literature on private transfer behaviour, there exists a large gap concerning the motives for remitting to family members and giving to non-family or community. Both types of transfer behaviour may be motivated by exchange and/or 'warm glow' considerations but the true nature is still an empirical question.

4.3 The Model

Below we develop a theoretical model of remitting behaviour and show how the model predictions vary by what we term choice and obligatory transfers. Firstly, assume that migrant, M , remits part of his income (y^m) to the home household (H). For simplicity, we assume that there are two migrants (A and B) from the same household and a single recipient (*i.e.*, H). The model is, however, generally applicable to N migrants and N households. r denotes the amount of transfers by each migrant. The utility functions of the A and B (*i.e.*, the donors' utility functions) are assumed to be based on one good, income. Utility is further assumed to depend on the representative migrant's own income (y^m) and on the home household's income (y^H), relative to that of the migrant decision maker. This can be expressed in Cobb Douglas form as an interdependent utility functions, namely:

$$U^i = (y^i)^\alpha \left(\frac{y^H}{y^i}\right)^\beta, \quad \alpha > \beta \quad (1)$$

Equation (1) is thus based on the notion of a moral economy, where it is assumed that an agent's behaviour is guided by both their self-oriented objectives and, at least to some extent, by a moral dimension that takes others' concerns into account. Greater weight is attached to own income (α) than to the relative well-being of the home household (β). The interdependent utility function approach permits migrants to be willing to sacrifice their own material welfare to increase the income of the home household.

In forming the notion of the utility function of the recipient home household, assume that the agent in question follows a well-defined objective, where he/she systematically uses his own resources and endowments to maximise the home household's welfare or utility, and this can be expressed as:

$$U = (y^H)^\alpha \quad (2)$$

Case 1: Transfers based on obligation from Each Migrant

Here, when a migrant decides to remit, he/she does so because they are in need of the goods/services provided. In this case we assume that:

- a) Migrants remit only to their parents, siblings, children or spouse, that is, transfers are only between close family members. Recipients are liquidity constrained, and depend mainly on remittances for consumption smoothing. Thus remittances can, through

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meeting basic nutritional needs, enhance the home family's productivity. In other words, $\frac{\partial y^H}{\partial r} \geq 0$.

- b) Both the migrants and the home households, given prevailing prices of goods and services and the prevailing interest rate, have marginal utilities of income for own consumption greater than zero (i.e., $\frac{\partial U^i}{\partial y^i} > 0$, $\frac{\partial U^H}{\partial y^H} > 0$).
- c) Following Hochman and Rodgers (1969), we require in addition that all remittances preserve efficiency. In other words, transfers harm neither migrants nor the home households.
- d) All transfers flow from the migrants to their home households, assuming migrants, who generally move in pursuit of economic advantage, are the higher income group.

Migrant's remittances can be viewed as a tax levied by their home household. In the analysis below, compulsory transfers are treated as being independent of the migrant's (M 's) income, and hence are of the nature of a lump-sum tax. Thus, each migrant remits the amount r of his income. The migrant's income constraint is:

$$y^M = \bar{y}^M - \sum_{t=1}^n r^t \quad (3)$$

where y^M is the migrant's post-transfer income. It will vary with a range of observable attributes (such as demographic characteristics, skill, and education level, X_i);²⁶ and \bar{y}^M is the pre-transfer endowment of each migrant. This pre-transfer endowment is simply the donor's assets without remittances or the migrant's wealth before migration. Thus, after transfers the recipient's, (that is, the migrant's home household's) maximisation problem is constrained by:

$$y^H = \bar{y}^H + 2r \quad (4)$$

and $y^H = \int (r_t, X_t)$

and \bar{y}^H is the pre-transfer endowment of each recipient. Assume $\bar{y}^M > \bar{y}^H$.

The maximisation problem is the maximisation of (1) subject to (3) and (4),

that is:
$$\text{Max } U^i = (y^i)^\alpha \left(\frac{y^H}{y^i}\right)^\beta$$

Subject to
$$y^M = \bar{y}^M - \sum_{t=1}^n r^t$$

and
$$y^H = \bar{y}^H + 2r$$

²⁶Of course, variables other than income, for example, wealth, consumption level, or consumption of particular commodities, could be the source of interdependence. Most of the literature on intergenerational transfer behaviour is based on the levels of consumption of parents and their children (e.g., Laferrère and Wolff, 2006; Cox, 1987; 1990; Bernheim et al., 1985; Altonji et al., 1997). Here income is employed as it simplifies the analysis. Ravallion and Dearden (1988) also considered income.

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With unconstrained maximisation the above problem becomes:

$$U^i(r) = (\bar{y}^M - r)^\alpha \left(\frac{\bar{y}^H + 2r}{\bar{y}^M - r} \right)^\beta \quad (5)$$

Solving the first order condition $\left(\frac{\partial U^i}{\partial r} = 0 \right)$, we get the optimal amount of obligatory transfer²⁷ as:

$$r^* = \frac{2\beta\bar{y}^M + (\beta - \alpha)\bar{y}^H}{2\alpha} \quad (6)$$

r^* is the compulsory amount of optimal transfer (i.e., remittances) by each migrant to their home household. r^* is also Pareto optimal because it is an obligatory transfer of income via remittances by each migrant to their home household, and it also satisfies the Second Welfare Theorem which informs us that this transfer of migrant's income tends to preserve efficiency. In addition, the first order conditions are satisfied in this standard maximisation problem. Most importantly, both the migrants and the home household become better off after the transfer. So, these obligatory transfers predict that migrants remit to insure their family against adverse risks and shocks at home. By comparing the two utility functions (before the remittances and after the remittances) we see that utility of the migrants increases. In particular,

Pre-transfer utility: $U^i = (y^i)^\alpha \left(\frac{y^H}{y^i} \right)^\beta, \quad \alpha > \beta$

Post-transfer utility: $U^i(r) = (\bar{y}^M - r)^\alpha \downarrow \left(\frac{\bar{y}^H + 2r}{\bar{y}^M - r} \right)^\beta \uparrow$

Here $(\bar{y}^M - r)^\alpha$ decreases after the remittances, but the second term increases by more than the fall of the first term, which informs that the total term increases. So, for the migrant, $U^i(r) > U^i$. For the home household, clearly, $\bar{y}^H + 2r > \bar{y}^H, r > 0$. If we move from this point (r^*) then the migrant becomes worse off, given the trade-off between own income and the consumption of the home household via the interdependent utility function. Hence, if r exceeds the optimal transfer, then the donor's income and hence utility falls, and this is less-than offset by the rise in the recipient's level of consumption and well-being. Conversely, where r falls short of the optimal transfer, then while the donors' income and utility increases, this is more than offset by the fall in the level of consumption and well-being of the home family.

²⁷ For the mathematical proof see Appendix4: A.

Case 2: Choice or Voluntary Transfers from Each Migrant

In this case, assume that migrant A remits r^A and migrant B remits r^B to their home household.²⁸

Thus our maximisation problem for migrant A becomes:

$$\text{Max} \quad U^A = (y^M)^\alpha \left(\frac{y^H}{y^M} \right)^\beta$$

$$\text{Subject to} \quad y^M = \bar{y}^M - r^A$$

$$\text{and} \quad y^H = \bar{y}^H + r^A + r^B$$

In unconstrained maximisation the above problem becomes:

$$U^A = (\bar{y}^M - r^A)^\alpha \left(\frac{\bar{y}^H + r^A + r^B}{\bar{y}^M - r^A} \right)^\beta \quad (7)$$

Solving Equation (7), the optimal amount of voluntary transfer²⁹ by migrants A is:

$$r^{A*} = \frac{[(\beta - \alpha)\bar{y}^H + \beta\bar{y}^M + (\beta - \alpha)r^B]}{\alpha} \quad (8)$$

Similarly, the optimal amount of voluntary transfer by migrants B is:

$$r^{B*} = \frac{[(\beta - \alpha)\bar{y}^H + \beta\bar{y}^M + (\beta - \alpha)r^A]}{\alpha} \quad (9)$$

In an equal transfers setting,

$$r^{A*} = r^{B*} = \hat{r}$$

Thus,

$$\begin{aligned} \alpha\hat{r} &= (\beta - \alpha)\bar{y}^H + \beta\bar{y}^M + (\beta - \alpha)\hat{r} \\ \Rightarrow \hat{r}[\alpha - \beta + \alpha] &= (\beta - \alpha)\bar{y}^H + \beta\bar{y}^M \\ \Rightarrow [2\alpha - \beta]\hat{r} &= (\beta - \alpha)\bar{y}^H + \beta\bar{y}^M \\ \Rightarrow \hat{r} &= \left[\frac{(\beta - \alpha)\bar{y}^H + \beta\bar{y}^M}{(2\alpha - \beta)} \right] \end{aligned} \quad (10)$$

A comparison between obligatory versus voluntary transfers yield:

$$\begin{aligned} r^* &> \hat{r} \\ \Rightarrow r^* - \hat{r} &> 0 && \text{[By subtracting } \hat{r} \text{ from both sides]} \\ \Rightarrow \frac{2\beta\bar{y}^M + (\beta - \alpha)\bar{y}^H}{2\alpha} - \frac{(\beta - \alpha)\bar{y}^H + \beta\bar{y}^M}{(2\alpha - \beta)} &> 0 \end{aligned}$$

²⁸With many recipients, remittances to each home household are substitutes since $\frac{\partial r}{\partial y^H_j} > 0$ and $\frac{\partial r}{\partial y^H_i} < 0$ ($i \neq j$). As recipients can be expected to have different levels of income, the model predicts the prevalence of unequal transfers.

²⁹For the mathematical proof see Appendix 4:B.

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$$\begin{aligned}
&\Rightarrow \frac{(2\alpha - \beta)[2\beta\bar{y}^M + (\beta - \alpha)\bar{y}^H] - 2\alpha[\beta\bar{y}^M + (\beta - \alpha)\bar{y}^H]}{2\alpha(2\alpha - \beta)} > 0 \\
&\Rightarrow \frac{2\alpha(2\beta\bar{y}^M) + 2\alpha(\beta - \alpha)\bar{y}^H - 2\beta^2\bar{y}^M - \beta(\beta - \alpha)\bar{y}^H - 2\alpha\beta\bar{y}^M - 2\alpha(\beta - \alpha)\bar{y}^H}{2\alpha(2\alpha - \beta)} > 0 \\
&\Rightarrow \frac{4\alpha(\beta\bar{y}^M) - 2\beta^2\bar{y}^M - \beta(\beta - \alpha)\bar{y}^H - 2\alpha\beta\bar{y}^M}{2\alpha(2\alpha - \beta)} > 0 \\
&\Rightarrow \frac{2\alpha\beta\bar{y}^M - 2\beta^2\bar{y}^M - \beta(\beta - \alpha)\bar{y}^H}{2\alpha(2\alpha - \beta)} > 0 \\
&\Rightarrow \frac{2\beta\bar{y}^M(\alpha - \beta) + \beta(\alpha - \beta)\bar{y}^H}{2\alpha(2\alpha - \beta)} > 0 \\
&\Rightarrow \frac{\beta(\alpha - \beta)[2\bar{y}^M + \bar{y}^H]}{2\alpha(2\alpha - \beta)} > 0. \tag{11}
\end{aligned}$$

Equation (11) shows that the obligatory transfers are greater than the voluntary transfers. We can easily compare the two types of remittances by substituting the remittances into the migrants' utility functions. This will reveal the level of well-being of the migrants.

In this setting, we assumed two migrants from the same household, in other words, we considered multiple donors and a single recipient. In the case of voluntary transfers of remittances with multiple migrants from the same household, several kinds of decision-making games could be played, and a brief sketch of some of these is of interest. First, the migrant can remit a large amount or an insignificant amount, not knowing what the other one has remitted. In this case, H receives two transfers and he may have no incentive to reveal one migrant's amount of remittances to the other migrant. Second, while the migrants know their home household's endowment (\bar{y}^H), H does not know the real final income of the migrants. The home household can get zero (no one remits), one (only one remits) or two (both remit) sets of remittances. Third, one migrant may be altruistic and remit earlier than the second migrant. Observing the H income and the transferred amount of remittances by migrant one who remits first, and also being altruistic, the second migrant may also remit but in this case he may remit less. Finally, migrant one who remits first, knowing that H is going to receive another transfer, has an incentive to remit less and even to wait for the second migrant to remit first. This case of voluntary transfer may give rise to a "free-riding problem" (Laferrère and Wolff, 2006). This is not unrealistic: suppose two sons of a parent have migrated to Malaysia and the UAE. The parent asks for remittances to cover the cost of the marriage ceremony of their

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daughter. In this case, both migrants may remit less assuming that the other will remit more. Thus, migrants remit less when not compelled. This situation can be regarded as a clear case of under provision of public goods. Thus voluntary transfers do not only affect the donor's own utility, but they affect all other members of the collective—and *vice-versa*. The result, generally, is an inefficiently low supply of collective goods, because all individuals tend to behave in a likewise manner.

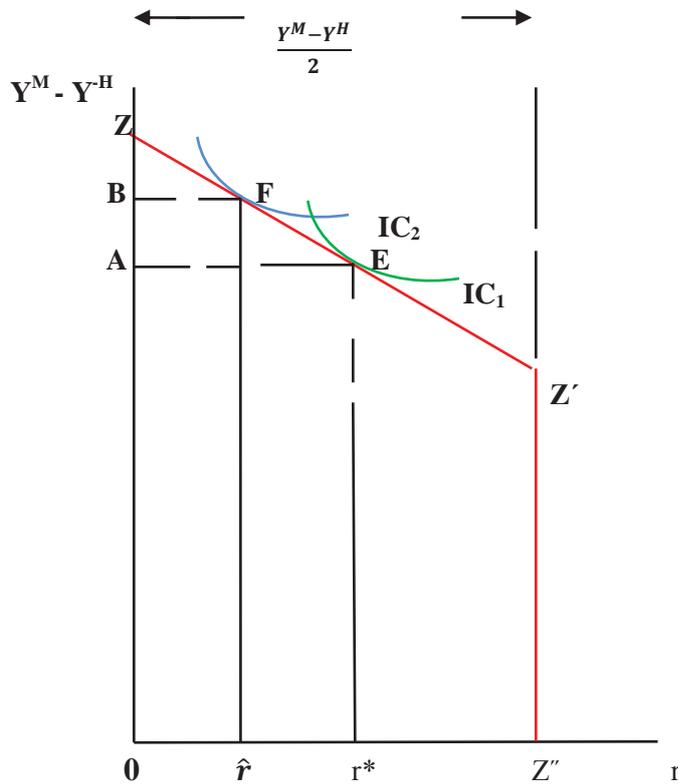


Figure 1: Obligatory versus voluntary transfers

Following Hochman and Rodgers (1969), Figure 1 shows migrants' choice of his income to retain for himself and how much to remit to the households of origin in the cases of obligation and voluntary transfers. This obviously depends on both the donor's and recipient's initial incomes. In the *N-person* case the size of income depends upon the differential $Y^M - Y^H$, rather than the absolute or the relative ratio. The terms on which the migrant is able to exchange own consumption for increments in home households income are given by the slope of ZZ'' , the migrant's opportunity locus or budget line. In this case, the budget line becomes vertical at Z'

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due to the restriction that transfers should not be so large as to reverse the distributional ordering. The slope of the $Z'Z''$ segment is -1 and $OZ'' = Z'Z''$, since a given amount of remittances to the home household entails a reduction in the amount of income that the migrant is able to retain for his own consumption. IC_1 is one of migrant's indifference curves which indicates the terms at which the migrant is willing to sacrifice own consumption for the increase in the home household's income Y^H .

If the initial differential (between the migrant and the home household) is equal to OZ , transfers to the home household of any amount up to r^* raise migrant's utility level and a transfer of r^* allows the donors to reach the optimum at E , where, according to Hochman and Rodgers (1969), the marginal utility of a dollar of own-consumption equals the marginal utility of a one dollar increment in recipient's income. Thus in the case of obligation of remittances, the optimal transfer for each migrant is at E , which by definition, as discussed above, is also a Pareto optimum. Each migrant in this case transfers, r^* , while preserving a difference of income of OA . In the case of voluntary transfers, the initial income differential varies and it depends on the transfer elasticity³⁰ of both parties, with respect to $Y^M - Y^H$. Changes in the size of the initial differential, OZ while leaving us on the same segment of the budget line, will result in the migrant's indifference curve shifting to the left with a tangency at F . Thus in the voluntary case, the optimal transfer is F and the migrant desires to transfer at \hat{r} . In this case the migrant remits less but preserves a difference of income of OB , which is higher than in the compulsory case.

4.4. Data Description

We collected a matched sample of Bangladeshi migrant households living in the UK and Malaysia and their origin families living in Bangladesh. The basic approach to data collection followed that employed by Osili (2007). A structured questionnaire was designed based on Osili's (2007) questionnaires. We followed this method based on Carling's (2008) suggestion, to the effect that the ideal survey for analysing remittances should, to a greater extent, be integrated as far as possible by

³⁰ For a detailed discussion on transfer elasticity, see Hochman and Rodgers (1969, p. 547)

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taking into account the potential senders, information about potential receivers, and *vice-versa*³¹.

To the best of our knowledge this approach has so far only been applied by Osili (2007) for the case of remittances from the USA to Nigeria and later by Meyer *et al.* (2012) from Germany to Kosovo. But in Bangladesh more than 90% of the total migrants live in the Middle East and Malaysia (BMET, 2013). Moreover among the total migrants 66.27% are semi-skilled or less skilled (BMET, 2013). Thus we choose a three-step empirical approach that begins with interviews with Bangladeshi migrants living in Malaysia and then, in the second step of the survey continued with the UK migrants as a proxy for a developed country and a destination of professional and skilled migrants, and in the final stage, we conducted our survey with their households of origin in Bangladesh. Data were collected from September 2012 to February 2013. To overcome the difficulties and cost of searching for the migrants in the host countries we employed different techniques. In Malaysia, at first we employed a legal manpower agent who had lived there since 1978. The agent took us to the place where Bangladeshi migrants generally meet during their holidays. In Kuala Lumpur, the majority of the Bangladeshi shops, restaurants and money changers are located at Kotaray Banglabazar near Jalan Pudu. We contacted the potential respondents there, and based on their consent we kept their contact number and later at their convenience we interviewed them. It should be worth mentioning that during working hours, without permission from the employer, it was not possible to collect data in Malaysia. We obtained the consent of 247 respondents, and of these 228 were interviewed. However, usable information was provided by only 209 migrants in Malaysia.

In the UK all the data were collected from the London Borough of Tower Hamlets. According to the 2001 UK National Census, 154,362 people of Bangladeshi origin reside in London, with approximately 65,500 living in the London Borough of Tower Hamlets, making up approximately 37% of the borough's total population (Wikipedia online). As with Malaysia, in the UK, we also contacted migrants in East London Mosques, cafes, restaurants, shops, offices and Bangladeshi newspapers and electronic media's office in Brick Lane, and Aldgate and Idea Library in Whitechapel. Members of Bangladeshi community based cultural

³¹ We thank Una Osili for access to her questionnaires and her encouragement. Personal communication, August 1, 2011.

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organizations in Shadwell, Mile End, Stepney Green, and Lime house were also contacted during the trial session in holidays. As a result, it was possible in the UK to obtain representation of some groups such as females, the elderly and pensioners. Thus in the UK, like Malaysia, we first obtained consent from the migrant and later conducted interviews from the households in their residences. A total of 229 respondents agreed to provide information, later 8 respondents withdrew permission during the interview process, a further 10 refused to provide information regarding remittances and their income. Thus the sample size in the UK contains 211 Bangladeshi migrants.

Finally, the origin households' data were collected based on the contact information provided by the migrant household. For the households in the origin the face-to-face interviews were undertaken by a team of one of the authors and experienced interviewers from the Department of Economics and Statistics, Shahjalal University of Science & Technology, Bangladesh, after undergoing an intensive training programme as part of this research. The home households were from a wide range of areas in Bangladesh. From the home household we were able to collect 205 questionnaires for the Malaysian migrants and 201 matched data sets from the UK migrants. Since migrants often send remittances to multiple recipients or family members, it is important to note that the transfers sent by the migrant may not be equal to the transfers received by a given origin respondent. A given origin respondent may receive only a portion of the total transfer sent by the family migrant in the UK or Malaysia during the survey year. Yet we tried to collect data from the person whom the migrant sent the majority of their remittances to by asking the following question of the migrant, "If there is one person who is responsible for distributing the money that you send to other recipients, if possible could you provide the name, address and telephone number of this individual?"

In addition, our data collection strategy is free from sample selection bias as we considered both the remitters and non-remitters from both the UK and Malaysia. Many studies on remittances have considered only those respondents sending remittances (for example, Knowles and Anker, 1981; Durand et al., 1996; Blue, 2004; Arun and Ulku, 2011) to avoid censored data but suffer from sample selection bias. Another advantage of our dataset is that like Meyer *et al.* (2012), both the migrant household and the home household were interviewed within a very short-

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time span, and, as a result, we believe that both sides were less likely to be influenced by each other.

The high level of voluntary cooperation with the survey may strike some readers as surprising. Our experience is that, given the setting of personal and regional anonymity in an impartial and independent face-to-face survey, migrants are generally keen to inform the interviewer and hence, indirectly, the policymakers of the reality of their socio-economic status at the destination and at home, and of their views in the context of prevailing cost-benefit of migration abroad, the role of government and immigration authority and destination country's law organizations and other enforcements authorities attitude towards them. Moreover, to be trustworthy and to maximise the likelihood of honest responses, we first asked the migrants about the last part of our questionnaire: subjective well-being of migrants. In this part we have asked the respondent about the negative and positive effects of his/her migration decision and current condition in the destination, perceived discrimination, cultural conflict, mastery, ethnic identification, host country language proficiency, life satisfaction, subjective well-being and standard of living both at home and at destination.

Thus following Osili (2007), we developed a UK/Malaysia migrant household questionnaire and home household questionnaire. The survey questionnaire for the migrant household consisted of nine parts: general information; background information of the migrant household; social ties and connections with home village and family; remittances; income; home family information; return migration plans; a natural experiment part about the time preference to remit; and subjective well-being of migrants. The questionnaire for the household of the origins was divided into six broad categories: general information; background information of home household head; social connection; remittances; income; and household wealth and business. Table 4.1 provides brief definitions of the main variables used in the analysis. Additional details are mentioned in the text where clarification is needed.

In the appendix, descriptive statistics for both the UK and Malaysia migrants are provided. The mean age of the UK migrants was 38 years. 69 per cent were married. Regarding skill composition, around 24 per cent of the migrants had either primary or secondary level of education. About 46 per cent had completed tertiary studies. About 43 per cent of the UK migrants reported that they received training

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after migration in the UK. 64 per cent of the UK migrants were living with their family. 63 per cent were permanent resident or became the UK citizen. Among the UK respondents, 45 per cent were engaged in elementary jobs including sales, and customer services. The average length of stay abroad was more than 12 years. Average monthly income of the UK respondent's households from all sources (such as wages, social security benefits, spouse earnings, rental income) were BDT (Bangladeshi Taka) 372,252, which was equivalent to US \$2727 during the time of survey. More than 70 per cent of the UK migrant's migration costs were borne by the family. The average number of friends and relatives in the UK were reported 23 approximately. Only 6 per cent respondents spouse live in the country of origin. About 64 per cent of the migrant's origin family structure was found nuclear. On average 2.16 members of the origin families were found economically active, while the average household size was about 5.98 individuals. The mean age of the origin family's household head was 54 years, and mean years of schooling were 4.68 years. About 66 percent of the origin families were living in rural areas. Average landholdings of the origin families were 11.36 Bigha (1 Bigha = 0.1338 hectare). The average numbers of migrants from the same households were 1.83 individuals.

The mean age of Malaysia migrants was 31 years. 49 per cent of the total respondents were married. Regarding skill composition, around 51 per cent of the migrants were either illiterate or had completed only the primary level of education (up to class five). About 34 per cent were found to have some secondary school experience. Only 13 percent had completed higher secondary and/or tertiary studies. About 11 per cent of the total respondents reported that they received training after their migration in Malaysia. Among the total respondents, 63 per cent were engaged in elementary jobs (such as cleaning, road construction, and security) including sales, and customer services. The average length of stay in Malaysia was about 7 years. Average monthly income of the respondents were BDT (Bangladeshi Taka) 46122, which was equivalent to US \$576 during the time of survey. About 55 per cent of the Malaysia migrant's migration costs were borne by the family. More than 91 per cent of the married respondent's spouses live in the country of origin. The mean age of the origin family's household head was 43 years, and mean years of schooling were 2.59 years. About 88 percent of the origin families were living in rural areas. The average numbers of migrants from the same households were 1.58 individuals.

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Table 4.1: Variable Definitions

Name of the variable	Definition
Dependent variable for MNL	
No transfer	= 0, if the migrant did not remit during the survey year.
Compulsory transfer	= 1, if the migrant remitted for his origin household's basic consumption, children's or siblings' education, to pay for medical expenses or to repay the loans and debts.
Voluntary Transfer	= 2, if remittances are sent for purchasing land, building houses, charity, friends or non-relatives, or for religious purposes.
Both	= 3, if the migrant remitted for both compulsory and voluntary reasons.
Independent variable	
Migrant Variable	
Age	Migrant's age at the time of the survey.
No education	Cannot read and write equal to 1, otherwise equal to 0.
Primary education	A dummy variable equal to 1 if ≤ 5 years of schooling, otherwise equal to 0.
Secondary education	A dummy variable equal to 1 if 6-10 years of schooling, otherwise equal to 0.
Graduate	A dummy variable equal to 1 if 15 years of schooling, otherwise equal to 0.
Higher	A dummy variable equal to 1 if ≥ 15 years of schooling, otherwise equal to 0.
Training	A dummy variable equal to 1 if the migrant had schooling or other training in the destination, otherwise equal to 0.
Accompanied by family	A dummy variable equal to 1 if the migrant's family lives with the migrant in the host country, otherwise equal to 0.
Household size	Number of members in the migrant's household.
Marital Status	Marital status of the migrant. A dummy variable equal to 1 if the migrant is married, otherwise equal to 0.
Residency Status	Residency status. A dummy variable equal to 1 if the migrant is a permanent resident or citizen of the host country, otherwise equal to 0.
Occupation abroad	Sales, customer service and elementary occupation = 1, otherwise equal to 0.
Years abroad	Years abroad. Number of years the migrant has been living abroad.
Income	Net monthly income of the migrant household. Net income is the combination of migrant's own income from all possible sources plus spouse's income plus net government benefits minus taxes. Values were converted into BDT.
Visit	Number of trips in the origin since arrival.
Network	Number of friends and relatives abroad.
Help	A dummy variable equal to 1 if the migrant received any assistance in getting a job or accommodation in the host, otherwise equal to 0.
Migration costs	% of migration costs borne by the origin family.
Origin Family Variables (migrant report)	
Father alive	A dummy variable equal to 1 if the migrant's father is alive, otherwise equal to 0.
Mother alive	A dummy variable equal to 1 if the migrant's mother is alive, otherwise equal to 0.
Spouse's location	A dummy variable equal to 1 if the migrant's spouse lives in the origin country, otherwise equal to 0.
Family structure	Family structure. A dummy variable equal to 1 if the migrant's origin family is nuclear, otherwise equal to 0.
Economically active family members	Number of economically active members in the origin country.
Origin family self-report	
Age of the head	Age of the head at the time of the survey.
Schooling of family head	Years of schooling of the head.
Origin family size	Origin family size.
Rural	Location of the origin household. A dummy variable equal to 1 if rural, otherwise equal to 0.
Occupation	A dummy variable equal to 1 if the occupation of the household head is retired, unemployed or housewife otherwise equal to 0
Landholdings	Land owned by the households in Bigha (1 Bigha = 0.1338 hectare)
Income	Origin household's monthly income without remittances.
Number of migrants	Total number of migrants from the household living abroad

4.5 Empirical Strategies

To test the relevance of our theoretical model, we use a multinomial logit model (MNL) which is appropriate when the dependent variable is categorical, has no inherent ordering (Long, 1997; Lee, 1983).³² MNL generates a set of contrasts for each independent variable in the model. The following latent variable model describes the migrant household's decision to choose compulsory transfers to his origin family:

$$C_i^* = X_{1i}\beta + e_{1i} \quad (12)$$

where C_i^* is the utility attained by the household from the obligatory transfer, X_{1i} is a vector of migrant household and home household characteristics that determine C_i^* and e_{1i} is a random error. However, C_i^* is unobserved. Rather, what we observe is the following binary variable:

$$C_i = 1, \text{ if compulsory transfers are made } (C_i^* > 0) \\ 0 \text{ otherwise.} \quad (13)$$

Similarly, secondly, the following latent variable model describes the migrant household's decision to choose voluntary transfers:

$$V_i^* = X_{2i}\beta + e_{2i} \quad (14)$$

where V_i^* is the utility derived by the household sending voluntary remittances, X_{2i} is a vector of migrant household and home household characteristics that determine V_i^* and e_{2i} is a random error. In practice we observe neither the decision-making process nor V_i^* . Rather, we only observe the following binary variable:

$$V_i = 1, \text{ if the voluntary transfers are made } (V_i^* > 0) \\ 0 \text{ otherwise.} \quad (15)$$

As we are interested in the joint decision of the two, we convert the two-equation system (given by equations (1) and (3)) into an observable form (Y)

³² Collection of data as employed in the current study is clearly problematic both with regard to the cost of collection of such, and being able to obtain large sample sizes. However, although this is clearly counter-balanced by the novelty of such data, and being able to accurately target data directly relating to the hypotheses of interest. However, an unfortunate drawback of the relatively small sizes we were able to collect, effectively limits the sophistication of the econometric models we are able to entertain. For example, sensible competitor models that could have been considered here, include: a bivariate (joint) model of voluntary and compulsory transfers; or indeed a selection (or hurdle-type) approach, which first models the decision to remit, and then conditional on remitting the decision to remit either/or voluntary or compulsory transfers. However, in all such instances convergence issues were encountered, presumably as a direct function of the small sample sizes, such that our results are invariably based on simpler econometric models.

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involving different alternatives. Thus at any time t , the individual chooses between no transfer, compulsory transfer, voluntary transfer and both compulsory and voluntary transfers. She thus has J alternatives. Let $j = 1$ denote no transfer, $j = 2$ denote only compulsory transfer, $j = 3$ denote only voluntary transfer and $j = 4$ denote both compulsory and voluntary transfers.

Thus, in our case, the model can be written as:

- (i) $Y_{ji} = 0: C_i^* \leq 0, V_i^* \leq 0$ (No remittances are sent)
- (ii) $Y_{ji} = 1: C_i^* > 0, V_i^* \leq 0$ (Only obligatory remittances are sent)
- (iii) $Y_{ji} = 2: C_i^* \leq 0, V_i^* > 0$ (Only voluntary remittances are sent)
- (iv) $Y_{ji} = 3: C_i^* > 0, V_i^* > 0$ (Both obligatory and voluntary remittances are sent)

Thus allowing for random error, the latent net valuation of the j^{th} choice *i.e.*, the estimated equation can be written as:

$$y_{ji}^* = X_i \beta_j + e_{ji} \quad (16)$$

where X_i is a vector of attributes of the individual and e_{ji} is a random error term following a Type1 Extreme Value distribution.

The MNL specification assumes that a household simultaneously compares the expected utility from all the alternatives. The unordered nature of the categorical variables in a MNL specification indicates that a household makes its transfer decision in a single step. The key advantage of the MNL approach is that it makes no assumptions about the household's attributes of transfer preferences, so any of the four alternatives can be a particular household's most preferred choice. The MNL model probabilities take the form:

$$Pr(y_i = j) = \frac{e^{X_i \beta_j}}{\sum_{k=1}^J e^{X_i \beta_k}}, \quad (17)$$

where y_i is the observed choice for individual i , and the index k distinguishes the alternative transfers choices open to the migrant. To estimate the parameters of this model it is necessary to normalise and impose the restriction that $\beta_4 = 0$ (an arbitrary choice that does not affect the results).

This model has the (unattractive) property of independence of irrelevant alternatives (IIA), indicating that changes in opportunities of one attribute will not influence the other choices (Maddala, 1983). More precisely, when the probability of one option changes, the probabilities of other options change proportionately so that

the ratio of their probabilities remain constant, leaving the relative importance of the choices unaffected (Fry and Harris, 1996; Lanzona, 1998). In practice, this assumption is invalid if the choices are close substitutes, as are obligatory and voluntary alternatives. In addition, the MNL model can overestimate the selection probabilities of the transfer activity decisions. Since IIA appears a restrictive property, its presence will be tested for using the Hausman-McFadden specification test (Hausman and McFadden, 1984).

4.6 Empirical Findings

The MNL estimates for the migrant's obligatory and/or voluntary remittance choices are presented in Tables 4.2 to 4.6. In Tables 4.2 and 4.3, we present the estimates for the obligatory and voluntary transfers from the UK migrants, respectively, while Tables 4.4 and 4.5 correspond to the same for the Malaysian migrants. The category where the migrants remit for both the obligatory and voluntary purposes has been used as the baseline category for normalisation. We present the results primarily as log odds ratios. The four categories available for the UK are: (i) no remittances are sent; (ii) only obligatory remittances are sent; (iii) only voluntary remittances are sent; and (iv) both obligatory and voluntary remittances are sent; and for the Malaysian migrants the first category is absent, *i.e.*, all the respondents belong to the remaining three categories. Corresponding partial effects are presented in Table 4.6.³³

³³The baseline category was also very sparsely populated for the UK sample, as evidenced by the very small partial effects in this Table. However, results were essentially robust to omission of this category.

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Table 4.2: Multinomial Logit Model (Log Odds) Estimates for the Category of Obligatory Transfers for the UK Migrants

Variable <i>Migrant Variables</i>	Obligatory Transfers					
	Coefficient	Log odds ratio	Coefficient	Log odds ratio	Coefficient	Log odds ratio
Age	-0.165*** (-3.00)	0.848	-0.192*** (3.16)	0.824	-0.189*** (-2.84)	0.827
Primary Education	-2.378** (-2.29)	0.092	-2.644** (-2.29)	0.071	-4.088*** (-3.16)	0.016
Secondary Education	-2.219*** (-2.82)	0.108	-2.322*** (-2.66)	0.098	-3.413*** (-3.39)	0.032
Graduate	-1.236** (-2.01)	0.290	-1.264** (-2.01)	0.282	-1.758** (-2.28)	0.172
Training	-0.273 (-0.41)	0.761	-0.376 (-0.53)	0.686	-0.319 (-0.41)	0.726
Family accompanied	0.361 (0.33)	1.434	2.063 (1.23)	7.87	0.673 (0.50)	1.962
Marital Status	0.964 (1.06)	2.624	-0.680 (-0.44)	0.506	1.377 (1.23)	3.965
Residency Status	0.712 (0.90)	2.038	0.694 (0.91)	2.002	1.262 (1.46)	3.533
Occupation abroad	0.480 (0.89)	1.616	0.417 (0.74)	1.517	0.384 (0.60)	1.468
Years Abroad	0.027 (0.50)	1.027	0.043 (0.75)	1.044	0.128** (1.93)	1.136
Income	-2.442*** (-4.74)	0.086	-2.468*** (-4.56)	0.084	-3.368*** (-4.66)	0.034
Visit	-0.070 (-0.45)	0.931	0.003 (0.02)	1.003	-0.175 (-0.87)	0.839
Household size	-0.917 (-0.30)	0.912	-0.180 (-0.54)	0.834	-0.210 (-0.51)	0.810
Network	0.013 (0.90)	1.013	0.015 (1.07)	1.016	0.017 (0.97)	1.017
Help	-0.704 (-1.09)	0.494	-0.819 (-1.19)	0.441	-1.276 (-1.59)	0.279
Migration costs	1.399** (1.89)	4.055	1.324* (1.71)	3.76	1.773** (2.04)	5.893
<i>Origin family variables (migrant report)</i>						
Father surviving			-0.430 (-0.86)	0.650		
Mother surviving			-0.255 (-0.35)	0.774		
Spouse in origin			2.353** (2.29)	1.052		
Family structure			0.197 (0.35)	1.211		
Economically active			0.141 (0.89)	1.151		
<i>Origin Family self-report (Matched sample)</i>						
Age of the head					0.028 (1.00)	1.028
School					-0.032 (-0.22)	1.003
Rural					0.330 (0.50)	1.391
Occupation					-1.180 (-1.47)	0.307
Income without remittances					-0.00004* (-1.74)	0.999
Landholdings					-0.007 (-0.41)	0.992
Household size					0.012 (0.11)	1.012

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Number of migrants			-0.178 (-0.68)	0.836
Log likelihood	-143.249	-131.251	-69.897	
LR chi ²	244.61	268.61	350.03	
Pseudo R ²	0.4606	0.5057	0.7146	
N	211	211	199	

Notes: ^a The normalised category is both compulsory and voluntary transfers; ^b ***, **, and * denote 1%, 5%, and 10% level of significance, respectively.

As we are using matched samples of migrants from the UK and Malaysia and their origin families in Bangladesh in the final columns of results, it is possible to control for both migrant and the origin household characteristics.³⁴ This will not only reduce any potential omitted variable bias, but also provides evidence as to the different motives to remit for the different types of remittances. Note that, a Hausman-McFadden specification test for IIA was found to be negative, which Hausman and McFadden note as evidence that IIA has not been violated, thus we can be confident in our findings.³⁵

Turn to the findings, we can see that age of the migrants for the obligation category (relative to the base category) is negative and significant at the 1% level for the UK migrants; and positive and significant (at 1%) for the Malaysia migrants. This may indicate that in case of older, more-skilled UK migrants, the need to remit for obligatory reasons reduces with the migrant's age. But in case of the group of generally less-skilled migrants in Malaysia, it is the younger ones who are less likely to make more obligatory transfers relative to their older counterparts. Conversely, the probability of voluntary transfers and migrant's age are positively and significantly related in the UK while they are negatively and significantly associated in Malaysia. One explanation (other than for the age and skill factors noted above) for the UK migrants could be that the migrant households have no families or few family members to support in the origin.

The level of education, the main measure for skill composition, is captured by the variables: primary; secondary; and graduate for the UK and for Malaysia: no education (illiterate); primary; and secondary level. In each case, the reference category is the highest education. In the case of the matched sample for Malaysian migrants, illiterate and the propensity towards obligatory transfers are significantly

³⁴ The migrant variables 'family accompanied', and 'residency status' were omitted from the model for the Malaysian migrants as only three respondents had family with them and 4 respondents were permanent migrants.

³⁵ Indeed, Long and Freese (2006) report that negative test statistics are "very common" in empirical research.

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associated at the 10% level, and primary education and the likelihood of a voluntary transfer are significantly associated at the 1% level. Both obligatory and voluntary transfers and the lower level of education are positively related among Malaysian migrants. This could indicate that unskilled or semiskilled migrants generally go to Malaysia and remit more for obligations. The likelihood of obligatory remittances and the level of education are negatively related for the UK migrants at a conventional level of significance. Higher education is expected to result in higher rewards for both migrant and their origin family (Becker 1993; Lanzona, 1998). Thus for the UK migrants the likelihood of compulsory remittances is significantly lower at lower levels of education. Hence, it appears that among the more skilled migrants who have opted to move to a developed country, the level of obligatory remitting is highest for those with graduate or post-graduate training.

Occupation abroad is negative and significant for Malaysia migrants in the case of compulsory transfers, indicating that migrants who are engaged with sales, customer service and elementary occupations remit less than those of other occupations. Among other variables for compulsory transfers, migrant's income and network are significant for Malaysian migrants and income and the cost of migration are significant for the UK migrants. But the likelihood of making compulsory remittances is negatively related to the migrant's income. This may be due to the fact that migrants predominantly remit a fixed sum for the livelihood/survival of their origin family. Hence if their income increases, it is likely that migrants may not raise the amount remitted for obligatory purposes. Lopez and Seligson (1991) showed, for example, that origin family's consumption expenditure and the survival of many small businesses depend on the continual arrival of remittances.

The variable 'network' (the number of friends and relatives abroad) and obligatory remittances for Malaysian migrants are also negatively related, suggesting that if migrants have more social ties with the host country then the likelihood of sending remittances under the obligation motive diminishes. In the case of the UK migrants, it is evident that the variable 'migration costs' is positive and significant at the 5% level, indicating that the higher the percentage of migration cost borne by the origin family the higher is the likelihood of obligatory remittances.

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Table 4.3: Multinomial Logit Model (Log Odds) Estimates for the Category of Voluntary Transfers ^a for the UK Migrants

Variable	Voluntary Transfers					
	<i>Migrant Variables</i>					
	Coefficient	Log odds ratio	Coefficient	Log odds ratio	Coefficient	Log odds ratio
Age	0.111** (2.09)	1.118	0.080 (1.39)	1.084	0.515*** (2.63)	1.674
Primary Education	0.291 (0.24)	1.338	0.397 (0.31)	1.488	14.214** (2.09)	14.908
Secondary Education	0.241 (0.25)	1.273	0.071 (0.07)	1.073	2.415 (0.64)	11.185
Graduate	1.169 (1.55)	3.221	1.121 (1.143)	3.070	3.959 (1.14)	12.193
Training	-0.809 (-1.10)	0.444	-1.112 (-1.42)	0.328	2.011 (0.97)	7.470
Family accompanied	3.270* (1.83)	2.633	4.741 (1.57)	11.465	21.251 (0.92)	2.46e+10
Marital Status	-4.009** (-2.37)	0.018	-5.384* (-1.86)	0.004	-28.403 (-1.20)	4.62e-13
Residency Status	2.335** (2.32)	10.330	2.186** (2.12)	8.907	9.859** (2.29)	14.889
Occupation abroad	1.666** (2.43)	5.291	1.564** (2.19)	4.778	8.495** (2.15)	4.893
Years Abroad	0.098* (1.85)	1.103	0.110** (1.94)	1.116	0.547*** (2.65)	1.728
Income	2.184*** (2.99)	8.888	2.374*** (2.99)	10.747	8.435*** (2.88)	1.000
Visit	-0.359** (-2.42)	0.698	-0.377** (-2.42)	0.685	-1.360** (-2.43)	0.256
Household size	-0.539* (-1.85)	0.582	-0.605** (-1.98)	0.545	-2.341** (-1.98)	0.096
Network	-0.067*** (-2.68)	0.935	-0.067** (2.54)	0.934	-0.162** (1.95)	0.850
Help	-0.152 (-0.22)	0.858	-0.485 (-0.65)	0.615	-3.240 (-1.50)	0.039
Migration costs	-0.533 (-0.61)	0.586	-0.489 (-0.54)	0.613	-4.411 (-1.45)	0.012
<i>Origin family variables (migrant report)</i>						
Father surviving			-0.089 (-0.15)	0.914		
Mother surviving			-0.982 (-1.32)	0.374		
Spouse in origin			0.282 (0.10)	1.326		
Family structure			-0.654 (-0.98)	0.519		
Economically active			0.067 (0.39)	1.069		
<i>Origin Family self-report (Matched sample)</i>						
Age of the head					0.598*** (2.78)	1.818
School					0.577 (1.18)	1.781
Rural					-4.318** (1.90)	0.013
Occupation					-6.387* (-1.64)	0.001
Income without remittances					0.0003*** (3.25)	1.0003
Landholdings					-0.022 (-0.76)	0.978

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Household size			-0.879** (-2.10)	0.414
Nmigrants			1.178* (1.85)	0.307
Log likelihood	-143.249	-131.251	-69.897	
LR chi ²	244.61	268.61	350.03	
Pseudo R ²	0.4606	0.5057	0.7146	
N	211	211	199	

Notes: ^a The normalised category is both compulsory and voluntary transfers; ^b ***, **, and * denote 1%, 5%, and 10% level of significance, respectively.

The partial effects for the multinomial logit regression are reported in Table 4.6. The estimated partial effects are, as expected, consistent with the results from Table 4.2 to Table 4.6, although there are some small differences. Lower levels of educational attainment are estimated to have a significant negative effect on the obligatory transfers (-0.411 for primary; -0.416 for secondary) for the UK migrants. Residency status is positively associated with both obligatory and voluntary transfers, though the magnitude of the estimated marginal effects is larger for the obligatory alternative.

On the other hand, there are clear differences, in the expected direction, in the demographic characteristics such as age, marital status and social capital such as network of the two types of transfer behaviour among both the UK and Malaysia migrants. Marriage is highly positive with obligatory transfers (0.445 for UK migrants and 0.004 for Malaysia migrants) and negative with voluntary transfers (-0.99 for the UK migrants and -0.004 for the Malaysia migrants). If the migrant's family is accompanied with him, then the likelihood of obligatory transfer reduces by 0.127, while voluntary transfer increases by 0.33. Migrant's training at abroad is negatively related with obligatory transfer for the UK migrants (-0.131) and positively with Malaysia migrants (0.008).

An increase in duration of staying abroad ("years abroad") increases the probability of obligatory transfers for the UK migrants by 0.27 percentage points but reduces the probability for Malaysia migrants (-0.003). In case of voluntary transfers, for both the UK and Malaysia migrants, the marginal effects are positive. The higher the percentage of migration costs are borne by the origin family, the greater the likelihood of obligatory transfers. A unit increase of the migration costs for the UK migrants increases the estimated probability of obligatory transfer by 0.37.

Considering the origin family self-report it is evident from Table 4.6 that higher age and lower levels of schooling of the origin household head corresponds to

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obligatory transfers for the UK migrants only. If the origin family lives in a rural area, the likelihood of receiving obligatory transfer increases by 0.025 and voluntary transfer reduces by 0.001 for the UK migrants. While for Malaysia migrants, the findings are reversed, *i.e.*, if the origin family lives in the rural area, the likelihood of receiving obligatory transfer reduces by 0.013 and voluntary transfer reduces by 0.004. An asset holding ("land holdings") is negative for both types of transfers for the UK migrants but for obligatory transfers are positive for Malaysia migrants. If the origin family's income without remittances are lower, the higher the possibility of receiving obligatory transfers. The higher is the number of migrants from the same household reduces both the obligatory by 0.29 percentage points and voluntary by 0.001 percentage points for the UK migrants and increases both the obligatory by 0.05 percentage points and voluntary by 0.24 percentage points for Malaysia migrants.

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Table 4.4: Multinomial Logit Model (Log Odds) Estimates for the Category of Obligatory Transfers for Malaysia Migrants

Variable	Compulsory Transfers					
	<i>Migrant Variables</i>					
	Coefficient	Log odds ratio	Coefficient	Log odds ratio	Coefficient	Log odds ratio
Age	0.269*** (2.94)	1.309	0.259*** (2.64)	1.295	0.798*** (2.91)	2.221
No Education	1.546 (1.05)	4.694	1.176 (0.76)	3.242	5.229* (1.66)	18.655
Primary Education	2.277** (2.13)	9.752	2.612** (2.14)	13.638	1.166 (0.53)	3.209
Secondary Education	0.427 (0.52)	1.533	0.710 (0.78)	2.034	1.534 (0.89)	4.637
Training	-0.129 (-0.14)	0.878	-0.059 (-0.06)	0.943	0.643 (0.27)	1.903
Marital Status	-0.265 (-0.35)	0.767	-2.983 (-1.31)	0.051	-0.313 (-0.02)	0.969
Occupation abroad	-1.799** (-2.27)	0.165	-1.926** (-2.29)	0.145	-5.599*** (-2.87)	0.003
Years Abroad	-0.861 (-0.86)	0.917	0.034 (0.29)	1.034	-0.266 (-1.13)	0.766
Income	-0.00003* (-1.83)	0.999	-0.00002 (-1.35)	0.999	0.00001 (-0.46)	0.999
Visit	-0.202 (-0.52)	0.817	-0.382 (-0.85)	0.682	-0.173 (-0.24)	0.841
Network	-0.515*** (-5.67)	0.597	-0.595*** (-5.55)	0.551	-0.868*** (-3.96)	0.419
Help	-0.165 (-0.26)	0.848	-0.395 (-0.54)	0.673	0.858 (0.73)	2.359
Migration costs	-0.201 (-0.25)	0.817	0.461 (0.50)	1.586	-0.817 (-0.55)	0.441
<i>Origin family variables (migrant report)</i>						
Father surviving			0.295 (0.39)	0.743		
Mother surviving			-0.264 (-0.24)	0.768		
Spouse in origin			2.349** (2.11)	10.477		
Family structure			-2.237** (-2.39)	0.107		
Economically active			0.345 (1.02)	1.413		
<i>Origin Family self-report (Matched sample)</i>						
Age of the head					0.053 (1.43)	1.054
School					0.864* (1.81)	2.373
Rural					-3.387** (-1.93)	0.034
Occupation					0.079** (2.06)	1.083
Income without remittances					-0.0004*** (-3.49)	0.999
Landholdings					0.00005 (0.00)	1.005
Household size					-0.386 (-1.45)	0.679

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Number of migrants			0.500 (0.71)	1.649
Log likelihood	-85.460	-79.129		-46.617
LR chi ²	186.98	196.04		258.71
Pseudo R ²	0.522	0.553		0.735
N	209	209		205

Notes: ^a The normalised category is both compulsory and voluntary transfers; ^b ***, **, and * denote 1%, 5%, and 10% level of significance, respectively.

In the case of voluntary transfers, for the migrant variables, it is found that the variables 'family accompanied', 'marital status', 'income', 'residency status', 'years abroad', 'visit' and 'network' are significant for UK migrants and variables 'years abroad' and 'help' are significant for Malaysian migrants. The significance of the 'family accompanied' variable suggests that if the migrant's family lives in the host country then the likelihood of voluntary transfer increases. The negative coefficient of the marital status variable indicates that the amounts of voluntary remittances are greater among unmarried migrants than they are among their married counterparts.

The findings also suggest, however, that 'residency status' of the migrant is an important determinant of remittances. If the migrants are either a permanent resident or a citizen of host country, then voluntary transfers are higher than obligatory transfers. Alternatively we can say that temporary migrants remit more for obligatory motives. Clark and Drinkwater (2007) argue that the social distance between the migrant and home households might increase if migration is seen as permanent, and hence the level of altruistic concern might decline through time. The remittance literature indicates that temporary migrants tend to be younger, earn less, and are more educated but remit more than permanent migrants (Arun and Ulku, 2011; Glytsos, 1997; Dustmann and Mestres, 2010; Sinning, 2011). Dustmann and Mestres (2010) argue that temporary migrants are strongly characterised by remittances sent for family support, even conditional on the location of the immediate family, compared with permanent migrants. This is argued to indicate that temporary migrants are committed towards family members other than the spouse and children.

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Table 4.5: Multinomial Logit Model (Log Odds) Estimates for the Category of Voluntary Transfers^a for Malaysia Migrants

Variable <i>Migrant Variables</i>	Voluntary					
	Coefficient	Log odds ratio	Coefficient	Log odds ratio	Coefficient	Log odds ratio
Age	-0.051 (-0.53)	0.950	-0.061 (-0.58)	0.940	-0.609 (-0.40)	0.941
No Education	2.170 (1.17)	8.761	-11.843 (-0.01)	7.19e-06	2.786 (1.11)	16.22
Primary Education	4.790*** (3.96)	12.032	5.122*** (3.79)	16.767	7.018*** (3.64)	11.170
Secondary Education	1.869** (1.97)	6.483	2.036** (2.04)	7.666	1.398 (1.16)	4.047
Training	-1.425 (-1.30)	0.240	-1.037 (-0.87)	0.354	-3.249* (-1.64)	0.038
Marital Status	-1.104 (-1.36)	0.331	-1.515 (-0.69)	0.219	-1.179 (-0.95)	0.307
Occupation abroad	0.067 (0.09)	1.070	0.167 (0.20)	1.181	0.447 (0.35)	1.565
Years Abroad	0.136** (2.28)	1.146	0.212* (1.71)	1.237	0.008 (0.95)	0.991
Income	0.00002 (1.52)	1.000	0.00002 (1.50)	1.000	0.00001 (0.48)	1.000
Visit	-0.144 (-0.31)	0.865	-0.369 (-0.68)	0.691	0.863** (2.32)	2.372
Network	-0.037 (-0.55)	0.963	-0.081 (-1.06)	0.921	0.029 (0.33)	1.029
Help	0.881** (2.31)	2.413	0.703 (0.94)	2.020	2.574** (2.08)	13.129
Migration costs	-1.011 (-1.17)	0.363	-0.203 (-0.20)	0.816	-2.078 (-1.46)	0.125
<i>Origin family variables (migrant report)</i>						
Father surviving			-0.399 (-0.47)	0.670		
Mother surviving			0.153 (0.12)	1.166		
Spouse in origin			0.191 (0.09)	1.210		
Family structure			-1.882** (-1.98)	0.152		
Economically active			0.436** (2.24)	1.547		
<i>Origin Family self-report (Matched sample)</i>						
Age of the head					0.041 (1.32)	1.042
School					0.070 (0.20)	1.073
Rural					-1.463 (-1.13)	0.231
Occupation					-0.701 (-0.65)	0.496
Income without remittances					0.00007** (2.34)	1.000
Landholdings					-0.043 (-1.09)	0.958
Household size					0.021 (0.80)	1.021

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Number of migrants			1.107*	3.027
			(1.73)	
Log likelihood	-85.460	-79.129	-46.617	
LR chi ²	186.98	196.04	258.71	
Pseudo R ²	0.522	0.553	0.735	
N	209	209	205	

Notes: ^a The normalised category is both compulsory and voluntary transfers; ^b ***, **, and * denote 1%, 5%, and 10% level of significance, respectively.

Duration of stay abroad is captured by the variable '*years abroad*'. Some studies suggest that remittances increase with time spent away from home (de la Brière et al., 2002; Agarwal and Horowitz, 2002; Lucas and Stark, 1985), while others suggest that they decrease or have no change over such a period of time (Menjívar, 1998; Simati and Gibson, 2001; Durand et al., 1996; Brown, 1997; Duraisamy and Narasimhan, 2000). Our results also suggest that obligatory remittances are characterised by declines with length of residence in the destination country. It might be thought that this is more relevant for the UK, where the majority of ethnic minority immigrant households are permanent residents (Clark and Drinkwater, 2007). Our findings suggest that voluntary remittances increase with the migrant's duration to stay abroad while obligatory transfers have no such change. Migrants who frequently visit their home country are less inclined to remit for voluntary reasons. In addition, in the case of the UK migrants, it is evident that if migrants have a higher numbers of friends and relatives abroad, their propensity to attract more voluntary transfers.

In case of the Malaysian migrants, it is observed that migrants who received any assistance in getting a job or accommodation in the host country have an enhanced propensity to remit voluntarily. This is captured by the variable '*help*'. When we include the migrant's report on the origin family variables, we find that the '*spouse in origin*' variable is significant and positive at the 5% level for obligatory transfers for both the UK and the Malaysian migrants. This indicates strong social attachments with the origin. It is also found that the '*family structure*' variable is negative and significant for both obligation and choice categories for Malaysian migrants, indicating that an extended family receives more remittances than a nuclear family. The variable, '*economically active*' represents the number of economically active members remaining in the origin. The positive coefficient of this variable indicates that the greater the number of economically active member at origin the higher the propensity to get more remittances. This would make sense from the

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perspective of the remitting migrant viewing their assistance as complementary to the support provided by other (economically active family members), and hence more likely to make a sustainable difference than where the origin family was expected to survive on the basis of only the one migrant's remittances. This is consistent with the insurance motive to remit.

More economically active members mean better management of the household and economising on resources, which may result in more money being available for other purposes such as the purchase of assets back home, and thus more money being sent (Lianos and Cavounidis, 2010)

In the last specification of Tables 4.2 to 4.5 we also include home households self-report along with the migrant variables. We can see that the variable 'age of the home household head' is significant only for the probability of the voluntary transfers for the UK migrants. Only for the Malaysia migrant, the level of education of the head of the household has a significant and positive impact on the compulsory amount remitted. However in other cases, it has been found to be insignificant. One possible explanation for the positive coefficient could be that better educated household heads are likely to have children with familial loyalty with a consequently higher intention to remit for consumption smoothing of home household. If the households of origin are located in rural areas then the likelihood of receiving compulsory remittances are lower for Malaysia migrants. But for UK migrants, the probability of voluntary remittances reduces if the origin family lives in the rural area. This could be due to lower living costs at origin. Another interesting finding is that if the origin household heads are retired, unemployed or work in the household as housewife, sending remittances are an obligation for the migrants. In that case we can also say that remittances act as insurance.

Our estimates suggest that the income of the household has a negative impact on the likelihood of obligatory remittances and has a positive impact on the likelihood of choice or voluntary remittances. Thus compulsory remittances are consistent with the altruistic motive and voluntary remittances are closely linked with the exchange or self-interest motive. In addition, we find that the probability of compulsory remitting per migrant decreases with the higher number of migrants in the household and increases with the voluntary remittances.

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Table 4.6: Multinomial Logit; Partial Effects for the Matched Samples Only

Variables	United Kingdom				Malaysia		
	No Transfer	Only Compulsory transfer	Only voluntary Transfer	Both compulsory and voluntary transfers	Only Compulsory transfer	Only voluntary Transfer	Both compulsory and voluntary transfers
Migrant variables							
Age	7.21e-30	-0.048	0.00005	0.048	0.008	-0.003	-0.005
No Education					0.013	-0.004	-0.009
Primary	-1.50e-44	-0.411	0.521	-0.111	-0.871	0.094	-0.007
Secondary	-1.59e-43	-0.416	0.015	0.401	0.008	-0.0005	-0.0078
Graduate	-4.73e-37	-0.321	0.0005	0.321	-	-	-
Training	-1.85e-41	-0.131	0.0004	0.131	0.008	-0.006	-0.002
Family Accompanied	-7.08e-36	-0.127	0.333	-0.206	-	-	-
Marital Status	5.77e-41	0.445	-0.999	0.555	0.0045	-0.0047	0.0002
Residency Status	-1.36e-39	0.160	0.006	-0.166	-	-	-
Occupation abroad	-8.29e-33	0.063	0.004	-0.067	-0.049	0.021	0.028
Year Abroad	-0.00003	0.027	0.00003	-0.027	-0.003	0.001	0.002
Income	-1.28e-09	-1.49e-06	1.28e-09	1.49e-06	-1.88e-07	1.03e-07	8.44e-08
Visit	7.41e-30	-0.038	-0.0003	0.038	-0.005	0.004	0.001
Household size	2.49e-30	-0.019	-0.0002	0.019	-	-	-
Network	2.34e-31	0.003	-0.00001	-0.003	-0.009	0.004	0.005
Help	1.23e-38	-0.323	-0.0002	0.323	-0.003	0.008	-0.005
Migration costs	0	0.373	-0.0005	-0.372	0.0002	-0.005	0.0048
Origin Family self-report							
Age of the head	0.00003	0.005	0.00003	-0.005	0.00036	-0.00004	-0.00032
Schooling of the head	7.79e-30	-0.007	0.00006	0.007	0.008	-0.003	-0.005
Origin	0	0.007	-0.00006	-0.007	-0.004	0.002	0.002
Household size							
Rural	-3.38e-43	0.025	-0.0014	-0.024	-0.013	0.004	0.009
Land holdings	0	-0.002	-2.47e-08	0.002	0.00017	-0.0002	6.99e-07
Occupation	7.03e-42	-0.243	0.0005	0.243	0.0036	-0.0031	-0.0005
Income without remittances	3.52e-32	-7.71e-06	2.59e-08	7.69e-06	-4.30e-06	1.91e-06	2.38e-06
Number of migrants	1.80e-30	-0.029	-0.0001	0.029	0.0005	0.0024	-0.0029

Piracha and Saraogi (2012) also find a similar result. According to Piracha and Saraogi (2012: pp. 484), "... multiple altruists face a public goods problem and tend to cut their largesse in the expectation that others will provide, which is consistent with the altruistic motive". This is also consistent with our theoretical model presented above. Finally, we find a negative and significant coefficient of the variable 'household size' for the UK migrant. It seems reasonable to expect that the higher the origin family size, the lower will be the voluntary remittances.

4.7 Concluding Remarks

The aim of this research was to examine under which condition migrants are compelled to remit to their households of origin. In addition, we also investigated what motivates the migrants to remit not only to persons outside their own household (such as poor relatives or friends) but also to the community (such as to charity organisations, and even to political parties). The latter category is known as *voluntary transfers*. To test the relevance of this, a rich matched sample of Bangladeshi migrant households living in the UK and Malaysia and their origin families living in Bangladesh was collected. Using a multinomial logit model we differentiated the motives for remitting obligatory and voluntary purposes in terms of observed migrants and home households characteristics.

From our theoretical model of obligatory transfers (post-transfer utility), it is evident that both the migrant and the home household become better off after the transfer, *i.e.*, increase in the income of the migrant, coupled with a drop in the recipient household's income, should raise the amount transferred (Rapoport and Docquier, 2006). Our empirical findings also support this proposition as we found the sign of the coefficient of migrant's income was positive and the recipient's or family's income was negative in case of obligatory transfers.³⁶ Our theoretical model also predicts that under voluntary transfer the effect of migrant's income should be positive and the home household's earning may be either positive or negative. The findings showed that in the case of choice or voluntary transfers, the coefficients for both the migrant and his origin family's income were positive. Thus the results broadly suggest that obligatory transfers are mainly motivated by altruism and

³⁶See Rapoport and Docquier's, (2006: pp. 1163) Table 2: Remittances' sensitivity to various explanatory variables—a summary

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insurance while choice or voluntary transfers are motivated by exchange and investment motives.

The findings also suggest that permanent and skilled migrants' (migrants living in the UK) age is negatively related to obligatory transfers of remittances, while the opposite is true for the temporary and semi-skilled or unskilled migrants (migrants living in Malaysia). If migrants maintain more social ties with the host country then the likelihood sending remittances under the compulsory motive diminishes. But the higher the percentage of migration cost borne by the origin family the higher is the likelihood of compulsory remittances. In this sense, migration and the consequent remittances could be treated as insurance for the home households. If the migrant's family lives in the host country, then the likelihood of voluntary transfer increases. The incidence of voluntary remittances is greater among unmarried migrants than they are among their married counterparts. The findings also suggest, however, that residency status of the migrant is an important determinant of remittances. If the migrants are either a permanent resident or a citizen of host country, then voluntary transfers are more likely higher than compulsory or obligatory transfers. Alternatively we can say that temporary migrants remit more for obligatory motives. Obligatory remittances are characterised by declines with length of residence in the destination country.

Voluntary remittances increase with the migrant's duration of stay abroad. Migrants who frequently visit their home country are less inclined to remit for voluntary reasons. In addition, in the case of the UK migrants, it is evident that if migrants have higher numbers of friends and relatives abroad, they generally remit more to their community at origin: they opt for voluntary transfers. Migrants remit more for obligatory motive if their spouse lives in the origin and the origin's family structure is extended. These variables indicate strong social attachments with the origin. The relationship between the number of economically active members at origin and voluntary transfers from the migrants was found to be positive. More economically active members mean better management of the household and economising on resources, which may result in more money being available for other purposes such as the purchase of assets back home, and thus more money being sent (Lianos and Cavounidis, 2010). This also supports the investment motive to remit.

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Appendix 4

A: Optimal Amount of Obligatory Transfer

The first order condition for the optimal amount of compulsory transfer requires that

$$\frac{\partial U^i}{\partial r} = 0$$

That is:

$$\begin{aligned} \Rightarrow \alpha(\bar{y}^M - r)^{\alpha-1} (-1) \left(\frac{\bar{y}^H + 2r}{\bar{y}^M - r} \right)^\beta \\ + (\bar{y}^M - r)^\alpha \beta \left(\frac{\bar{y}^H + 2r}{\bar{y}^M - r} \right)^{\beta-1} \frac{(\bar{y}^M - r)(2) - (\bar{y}^H + 2r)(-1)}{(\bar{y}^M - r)^2} = 0 \end{aligned}$$

$$\Rightarrow -\alpha(\bar{y}^M - r)^{\alpha-1} \left(\frac{\bar{y}^H + 2r}{\bar{y}^M - r} \right)^\beta + (\bar{y}^M - r)^\alpha \beta \left(\frac{\bar{y}^H + 2r}{\bar{y}^M - r} \right)^{\beta-1} \frac{2\bar{y}^M + \bar{y}^H}{(\bar{y}^M - r)^2} = 0$$

$$\Rightarrow \left(\frac{\bar{y}^H + 2r}{\bar{y}^M - r} \right)^\beta \left[-\alpha(\bar{y}^M - r)^{\alpha-1} (\bar{y}^M - r)^\alpha \beta \left(\frac{\bar{y}^H + 2r}{\bar{y}^M - r} \right)^{-1} \left(\frac{2\bar{y}^M + \bar{y}^H}{(\bar{y}^M - r)^2} \right) \right] = 0$$

$$\Rightarrow -\alpha(\bar{y}^M - r)^{\alpha-1} + \beta(\bar{y}^M - r)^\alpha \left(\frac{1}{\bar{y}^H + 2r} \right) \left(\frac{2\bar{y}^M + \bar{y}^H}{(\bar{y}^M - r)} \right) = 0$$

$$\Rightarrow \frac{-\alpha(\bar{y}^M - r)^\alpha (\bar{y}^H + 2r) + \beta(\bar{y}^M - r)^\alpha (2\bar{y}^M + \bar{y}^H)}{(\bar{y}^H + 2r)(\bar{y}^M - r)} = 0$$

$$\Rightarrow (\bar{y}^M - r)^\alpha [-\alpha(\bar{y}^H + 2r) + \beta(2\bar{y}^M + \bar{y}^H)] = 0$$

$$\Rightarrow -\alpha(\bar{y}^H + 2r) + \beta(2\bar{y}^M + \bar{y}^H) = 0$$

$$\Rightarrow -\alpha\bar{y}^H - 2\alpha r + 2\beta\bar{y}^M + \beta\bar{y}^H = 0$$

$$\Rightarrow \bar{y}^H(\beta - \alpha) - 2\alpha r + 2\beta\bar{y}^M = 0$$

$$\Rightarrow 2\alpha r = 2\beta\bar{y}^M + (\beta - \alpha)\bar{y}^H$$

$$\Rightarrow r^* = \frac{2\beta\bar{y}^M + (\beta - \alpha)\bar{y}^H}{2\alpha}$$

B: Optimal Amount of Voluntary Transfer

The first order condition requires that $\frac{\partial U^A}{\partial r^A} = 0$

$$\begin{aligned} \Rightarrow & \alpha(\bar{y}^M - r^A)^{\alpha-1}(-1) \left(\frac{\bar{y}^H + r^A + r^B}{\bar{y}^M - r^A} \right)^\beta \\ & + (\bar{y}^M - r^A)^\alpha \beta \left(\frac{\bar{y}^H + r^A + r^B}{\bar{y}^M - r^A} \right)^{\beta-1} \frac{(\bar{y}^M - r^A) - (\bar{y}^H + r^A + r^B)(-1)}{(\bar{y}^M - r^A)^2} = 0 \\ \Rightarrow & -\alpha(\bar{y}^M - r^A)^{\alpha-1} \left(\frac{\bar{y}^H + r^A + r^B}{\bar{y}^M - r^A} \right)^\beta + (\bar{y}^M - r^A)^\alpha \beta \left(\frac{\bar{y}^H + r^A + r^B}{\bar{y}^M - r^A} \right)^{\beta-1} \frac{\bar{y}^M - r^A + \bar{y}^H + r^A + r^B}{(\bar{y}^M - r^A)^2} = 0 \\ \Rightarrow & \left[\frac{\bar{y}^H + r^A + r^B}{\bar{y}^M - r^A} \right]^\beta - \alpha(\bar{y}^M - r^A)^{\alpha-1} + \left[(\bar{y}^M - r^A)^\alpha \beta \left(\frac{\bar{y}^H + r^A + r^B}{\bar{y}^M - r^A} \right)^{-1} \frac{\bar{y}^M + \bar{y}^H + r^B}{(\bar{y}^M - r^A)^2} \right] = 0 \\ \Rightarrow & -\alpha(\bar{y}^M - r^A)^{\alpha-1} + (\bar{y}^M - r^A)^\alpha \beta \frac{1}{(\bar{y}^H + r^A + r^B)} \frac{(\bar{y}^M + \bar{y}^H + r^B)}{(\bar{y}^M - r^A)} = 0 \\ \Rightarrow & \frac{-\alpha(\bar{y}^M - r^A)^\alpha (\bar{y}^H + r^A + r^B) + (\bar{y}^M - r^A)^\alpha \beta (\bar{y}^M + \bar{y}^H + r^B)}{(\bar{y}^M - r^A)(\bar{y}^H + r^A + r^B)} = 0 \\ \Rightarrow & (\bar{y}^M - r^A)^\alpha [-\alpha(\bar{y}^H + r^A + r^B) + \beta(\bar{y}^M + \bar{y}^H + r^B)] = 0 \\ \Rightarrow & -\alpha(\bar{y}^H + r^A + r^B) + \beta(\bar{y}^M + \bar{y}^H + r^B) = 0 \\ \Rightarrow & (\beta - \alpha)\bar{y}^H - \alpha r^A + (\beta - \alpha)r^B + \beta\bar{y}^M = 0 \\ \Rightarrow & \alpha r^A = (\beta - \alpha)\bar{y}^H + \beta\bar{y}^M + (\beta - \alpha)r^B = 0 \\ \Rightarrow & r^{A*} = \frac{[(\beta - \alpha)\bar{y}^H + \beta\bar{y}^M + (\beta - \alpha)r^B]}{\alpha} \end{aligned}$$

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Table 4.7: Summary Statistics (UK Migrants and their origin family)

Variable	Mean	Standard Deviation
<i>Migrant Variables</i>		
Age	38.434	9.482
Married	0.693	0.462
Primary education	0.094	0.293
Secondary education	0.151	0.358
Graduate	0.297	0.458
Higher	0.457	0.499
Training	0.429	0.496
Family accompanied	0.641	0.481
Residency status	0.637	0.482
Occupation abroad	0.453	0.499
Years abroad	12.716	10.093
Income	372252.80	367882.30
Visit	2.910	3.074
Household size	2.995	1.907
Network	22.924	17.122
Help	0.75	0.434
Migration costs	0.702	0.372
<i>Origin family variables (migrant report)</i>		
Father alive	0.491	0.501
Mother alive	0.764	0.426
Spouse in origin	0.066	0.249
Family structure	0.636	0.482
Economically active	2.160	1.704
<i>Origin family self-report</i>		
Age of the head	54.075	14.675
School	4.68	2.131
Rural	0.655	0.477
Occupation	0.47	0.500
Income without remittances	31456.50	27416.58
Landholdings	11.363	17.053
Household size	5.977	2.960
Number of migrants	1.830	2.960

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Table 4.8: Summary Statistics (Malaysia Migrants and their origin family)

Variable	Mean	Standard Deviation
<i>Migrant Variables</i>		
Age	31.096	6.660
Married	0.488	0.501
No education	0.077	0.266
Primary education	0.440	0.498
Secondary education	0.344	0.476
Higher	0.139	0.346
Training	0.115	0.319
Occupation abroad	0.632	0.484
Years abroad	6.658	5.108
Income	46122.42	19117.80
Visit	0.512	1.015
Network	7.196	5.389
Help	0.464	0.499
Migration costs	0.547	0.416
<i>Origin family variables (migrant report)</i>		
Father alive	0.545	0.499
Mother alive	0.852	0.356
Spouse in origin	0.454	0.499
Family structure	0.416	0.494
Economically active	1.327	1.325
<i>Origin family self-report</i>		
Age of the head	43.819	15.802
School	2.590	1.290
Rural	0.878	0.328
Occupation	0.502	0.501
Income without remittances	9888.537	12702.97
Landholdings	10.288	14.519
Household size	5.923	1.982
Number of migrants	1.576	0.823

PAPER IV: CHAPTER 5

Remittances and Happiness of Migrants and Their Home Households: Evidence Using Matched Samples³⁷

ABSTRACT

The current chapter estimates happiness functions to explore how remittances influence happiness among migrants and their households of origin. It is based on a novel data set of matched samples of Bangladeshi migrant households (living in the UK and Malaysia) and their origin families in Bangladesh. Empirical findings suggest that remittances play a significant role in stimulating migrants' happiness, (as well as a range of other observed characteristics). Households of origin's life satisfaction not only depends on receiving remittances but also other factors such as number of migrants from the household living abroad and the migrants' country of destination.

Keywords: Remittances, Happiness, Migrants, Origin family, Matched samples

³⁷ I would like to thank Paul Miller, Mark Harris and Mike Dockery for their valuable suggestions and comments. I am also very grateful to both Paul W. Miller and the Australian Research Council (ARC) for financial assistance regarding my data collection.

5

5.1 Introduction

The literature on international migrants' remittances has primarily focussed on its determinants, the motives to remit, the utilization of remittances and the impact of remittances on both the source country and the host country. A number of studies point out the negative effects of remittances by arguing that remittances may discourage the supply of labour and reduce the recipient's incentive to work or increase current consumption, thereby promoting dependency of receiving countries (Chami *et al.*, 2005; Funkhouser, 1992; Glytsos, 2002; Le, 2011; Lianos, 1997; Taylor *et al.*, 1996). On the other hand, proponents of remittances have shown that remittances help improve the recipients' standard of living, reduce poverty, encourage economic growth and development by enabling households to overcome liquidity constraints and invest in education and healthcare (see Rapoport and Docquier, 2006). So, remittances and their determinants are both strongly linked to the economic growth and development of labour-exporting, remittance-receiving economies as workers' remittances could easily be treated as alternative capital flows (Joarder and Uddin, 2010). Developing countries received an estimated US\$406 billion in remittances in 2012 (World Bank, 2013). But how this private transfer affect the subjective well-being (otherwise termed as 'happiness' or 'life-satisfaction') of international migrants and whether remittances improve or

deteriorate the level of well-being of their households of origin has not yet been explored.

In this chapter, happiness functions are estimated to explore how remittances influence happiness among migrants and their (left-behind) households of origin. The majority of the research along this line either considered only migrants' well-being based on their income abroad (Bartram, 2011), perceived discrimination and cultural conflict (Werkuyten and Nekuee, 1999), or only measured the well-being of those left-behind (Borraz *et al.*, 2010; Jones, 2013; Rigg, 2007). Remittances are both the cause and consequence of international migration (Stark, 2005). No research has yet explored the effect of international migrants' remittances on the happiness of both the migrants and their home households. The only research done in this regard is based on rural-urban migrants in China by Akay *et al.*, (2014). According to Akay *et al.*, (2014, p.518), "migrants' welfare may be positively affected by transferring money to the family left behind, as this contributes to improving the welfare of individuals for whom they care. At the same time, however, migrants may experience a loss in welfare because of the reduction in their own disposable income". However, this research was somewhat limited (based only on internal migrants, and only considered the migrant households).

This chapter offers many important contributions to the literature. Firstly, a theoretical model is derived which considers both the migrant and home household and analyses their subjective well-being. Secondly, it addresses not only the monetary and non-monetary consequences of sending and receiving remittances, but also *both* the migrant's and the household of origin's subjective standard of living. Finally, a novel dataset using two matched samples is used: (a) Bangladeshi migrants living in Malaysia (the destination of a middle-income country) and their home households and (b) Bangladeshi migrants living in the UK (a developed country) and their households of origin.

5.2 Literature Review and Background

According to the New Economics of Labour Migration, the decision to migrate is a decision made at the familial level. Remittances generated by migration are used for families' basic consumption, as capital for entrepreneurial activities, to fund the migrant's sibling's or children's education, to compensate emigration

related expenses, debts, and income lost by the 'left behind' household and in South Asian society, for the dowries of migrants' sisters and daughters (Gardner, 2011). Thus remittances not only improve the living standards of those left-behind but also increase the well-being of the migrant's home households and their access to social services. On the other hand, it is also argued that in one way remittances may raise the attitudes of over dependency of home household through increased consumption, while in another way they become vulnerable through a lack of regular and sufficient amount of remittances (Kothari, 2002; Nguyen, Yeoh and Toyota, 2006). Thus migration and the consequent remittances may have positive or negative impacts on the life satisfaction of both the migrant and their home households, but the net effect is still an empirical question.

A migrant initially compares him/herself with those who remain in their country of origin such as siblings, close relatives, friends and neighbours and later with other known migrants from the same origin in their country of destination. His/her evaluation of life satisfaction or happiness is affected by his/her position and standard of living. A downward comparison makes the migrant happy while the migrant's tendency towards upward comparison makes him unhappy (Suls *et al.*, 2002). At some stage of migration (say, after becoming a permanent resident or citizen of the host country), he/she may compare his life satisfaction with host citizens. Gokdemir and Dumludag (2012) argued that this type of comparison is based on the belief that migrants are also a part of the elite and therefore makes comparisons (with regard to consumption, income and social status) between themselves and the native.

Knight and Gunatilaka (2012a) argue that when the migrant decided to migrate, they could not predict the circumstances they would encounter in the host country. Moreover, generally unemployed and less happy people from the source nation migrate. In addition, origin family imposes a financial burden on migrants (Knight and Gunatilaka, 2012a). These certainly have consequences on the life satisfaction of migrants. According to Massey and Akresh (2006, p. 956), "whatever the motivations for migration, satisfaction is determined by the objective circumstances encountered after arrival".

However, to date, the relationship between migrants' remittances and happiness is relatively unexplored in the economics' literature. Recently, Arvin and Lew (2012) assumed migrants originating from a happier nation or those staying in a

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happier nation may behave differently than those from less happier societies, and found that the marginal effect of happiness (in migrants' host and home countries) on remittances was positive for a large number of countries. The findings were justified on the ground that immigrants living in happier nations have often access to superior health care, social security, education and infrastructure. Under these improved conditions in the destination location, migrants are more likely to turn their attention to helping improve the life satisfaction of those remaining in the home country. Remittances under such circumstances are not only welfare enhancing for families and friends but also improve the societies migrants left-behind. In addition, according to Arvin and Lew (2012, p. 215), "the level of happiness in a destination country may affect the flow of remittances to its citizens. However, the expected sign of the correlation here is open to question. On the one hand, lower happiness in home countries may compel migrants (and especially those living in happier host nations) to remit higher sums to less happy individuals in their home country. On the other hand, as we pointed out previously, migrants originating from happier countries may be predisposed to act more pro-socially and send larger remittances back home".³⁸

Remittances could reflect migrants' affection and concern for their origin family and also ensure the development of financial bonding and security. According to Stark (2013, p. 2), "..... if a migrant derives utility from his or her family having more income, if remittances brings about this increase, and if it is necessary to assimilate in order to secure a higher income and thus be able to remit, then we see how altruism – caring about the wellbeing of the family that stays behind– encourages assimilation; indeed, we can even anticipate that the stronger the altruism, the higher the optimal effort to assimilate."

Using the Rural Urban Migration in China (RUMiC) dataset, Akay *et al.*, (2014) examined the impact of remittances on the subjective well-being (SWB) of migrants. Regressing SWB on the level of remittances they found a positive and significant correlation between remittances and migrants' well-being. They also found a weaker relationship between SWB and remittances for migrants with strong implicit family responsibilities (for example, migrants whose spouse or children were left-behind) compared to those with fewer responsibilities (for example, single migrants with no children). Gungor (2008) showed that due to a higher amount of

³⁸ For an extended review of happiness literature see Dolan *et al.*, (2008)

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remittance, the spouse generally enjoys greater economic freedom and they are empowered both at the family level and at a social level. Moreover, remittances could play a positive role for better education of (in particular female) children, which would have a positive impact on migrant's life satisfaction (Battistella and Conaco, 1998). McKay (2007) argued that migrants distribute their remittances through extended family networks to sustain emotional intimacy and share opportunity and security across a wider range and thereby achieve higher life satisfaction.

On the other hand, several papers argue that the impact of remittances on SWB do not compensate for the negative effects of migrants leaving. Borraz *et al.*, (2010) found that remittances did not fully compensate for the fall in happiness levels due to the absence of the family member. Considering more than 400 randomly collected data from migrant and non-migrant households in Bolivia, Jones (2013) analysed the relationship between migration and happiness. He found that origin families of the migrant households are better off economically via remittances compared to households without any migrants. This economic well-being of migrant households increases the levels of professed family happiness. But greater family disintegration were found to reduce family happiness even more, with the net findings that origin families of the migrant households had lower levels of happiness than non-migrant households. Olwig (1999) using case studies of children left-behind in Caribbean families showed that those children who regularly received remittances and visits from their parents were relatively happy and they developed a sense that their parents were away in order to work for them, and help them, and that their absence therefore was for their own benefit.

In addition, Rigg (2007) argued that migration (and the subsequent remittances) may expand individual opportunity at the same time that it erodes family togetherness and happiness. Regarding separation of family members, Levitt (1998) showed that there always remains a psychological difference between children and the migrating parent, a disconnection not corrected by telephoning or their visits home. Menjivar and Agadjanian (2007) argued that when a husband migrates, the spouse may feel neglected and over monitored by her husband's relatives. While Jones (2013) suggested that to examine happiness of migrants we should include the opinions of the joint family (including both its origin and its destination components) particularly after the migrants are integrated and

acculturated to life in the host country. Thus, Jones (2013) suggests that to get a clear picture of the effect of remittances on subjective well-being a matched sample needs to be considered. Indeed, following Jones (2013) suggestions, this chapter analyses the impact of remittances on both migrants and their home households using a matched sample. To the best of my knowledge, this is the first attempt to analyse happiness using such a matched sample. We next develop a new theoretical model to provide some predictions regarding remittances, happiness and the migrant and the family of origin.

5.3 The Model

Following Blanchflower and Oswald (2004) and Bjørnskov *et al.*, (2013) assume that there exists a SWB (or ‘happiness’) function of the form:

$$H = h(u) + \varepsilon \quad (1)$$

where u is to be thought of as the person’s true happiness, or utility, and ε is an error term capturing among other factors, the inability of human beings to communicate accurately their happiness level, with $h' > 0$ and $h'' < 0$.

Given that the happiness function with respect to utility is concave, a private transfer will have a negative and quadratic direct effect on well-being. Denote migrant, i , and his/her home household, j and formulate

$$u = \vartheta_i(c_i) - \frac{1}{2}\rho r_i^2 + r_i\theta_i + \alpha\vartheta_j(c_j) \quad (2)$$

where, $\alpha \geq 0$ reflects the degree of altruism towards j . ρ denotes how a migrant values the necessity of remittances the origin family requires. Consumption, c , for the migrant depends on his/her net income after remitting (r) and also on own status utility (Φ). Consumption (c) for the home household is a combination of their own income plus the amount of remittances received from the migrant as well as their own status utility, (Φ). θ is a set of variables related to perceived behaviour and opinions of significant others, that is, social influences that affect the migrant’s remittance behaviour. So, migrant, i and home household, j ’s, consumption functions are:

$$c_i = Y_i - r_i + \Phi \quad (3)$$

and

$$c_j = Y_j + r_i + \Phi \quad (4)$$

where r_i is the amount of transfer (remittances) made by the migrant. Assume that j does not make any transfer to i or the possible transfers from j do not significantly affect the budget of i .

The status utility Φ , is related to the individual's relative position in human society and is defined following Bjørnskov *et al.*, (2013) as:

$$\Phi = \psi(y_i - \bar{y}) \quad (5)$$

where ψ denotes a status utility, as a concave and strictly increasing function of the difference between individually realised and average income.³⁹ For convenience, we assume that $\psi(0) = 0$.

When i maximises (2) through choice of r , subject to (3) and (4), the first-order condition is:

$$\frac{\partial u}{\partial r_i} = -u'_i + \alpha u'_j - (\rho - \theta)r_i \quad \text{if } r_i > 0 \quad (6)$$

It is also possible to derive a theoretical continuous choice model to show how perceived social influences affect subjective well-being. Consider the effect of a perceived social norm on the expected remittance behaviour that affects happiness. Let $EV \{\pi(\theta^*)\}$ denote the expected value of θ , for migrant i such that

$$EV \{\pi(\theta)\} = n(\theta) EU \{\pi(\theta)\} \quad (7)$$

where, $n(\theta) \in [0,1]$ the influence of social norm on the choice of perceived behaviour, θ , with $n(\theta)$ weakly decreasing in θ .

The necessary first order condition for an optimal solution to (7) is

$$\frac{dn(\theta^*)}{d\theta} EU \{\pi(\theta^*)\} + \frac{dEU \{\pi(\theta^*)\}}{d\theta} n(\theta^*) = 0 \quad (8)$$

If $n(\theta) = 1$ (if there is no feasible choice of $\theta > \Theta$), then for any θ we have

$$\frac{dn(\theta)}{d\theta} = 0 \text{ and (8) becomes}$$

$$\frac{dEU \{\pi(\theta^*)\}}{d\theta} = 0 \quad (9)$$

If $\theta > \Theta$ is regarded as so large that it is not chosen, then by assumption we have $\theta = \Theta$. Otherwise θ is increased until condition (8) holds, at which point we have

$$\frac{dn(\theta^*)}{d\theta} EU \{\pi(\theta^*)\} = - \frac{dEU \{\pi(\theta^*)\}}{d\theta} n(\theta^*) \quad (10)$$

where $0 < n(\theta^*) < 1$ and hence $0 < EV \{\pi(\theta^*)\} < EU \{\pi(\theta^*)\}$.

³⁹ For a detailed discussion see, Von Kleist (2010).

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If we assume that the shape of the function $n(\theta)$ is determined by some underlying value parameter, N , so that for any θ^* we have $\frac{dn(\theta^*)}{dN} > 0$, then by the Envelope theorem $\frac{dEV\{\pi(\theta^*)\}}{dN} > 0$, and

hence,

$$d\theta^*/dN > 0. \quad (11)$$

Thus the extent of happiness is positively related to the strength of perceived behaviour (social influences) vis-à-vis remittances towards happiness. The effect of migrant's moral belief and the judgements about the necessities of remittances for the household of origin (ρ), can be thought of in a similar way.

In this study, we therefore aim to estimate the empirical relevance of this theoretical model. The model predicts (equations (6) and (11)) that the effect of the migrant's remitting behaviour towards true happiness depends on four main factors. Firstly, his/her own utility which is related to his/her income and implicitly on his relative position in the host country (captured by Φ). Both income and the migrant's relative position may depend on a number of testable measurable personal characteristics (such as age, marital status, education), and migratory characteristics (such as residency status, wealth at destination, occupation abroad, length of stay abroad, social network at destination). The second major determinant relates to the utility of the migrant's household of origin which depends on migrant's degree of altruism towards them. In the empirical literature on migration, the degree of altruism towards the household of origin is analysed considering home household's or recipient's income, income variability, or adverse short-run shocks in recipient's income and assets. Thirdly, also on a set of variables related to perceived behaviour (such as migrant's ethnic identification, acculturation attitude, host country language proficiency, perceived discrimination, perceived cultural conflicts and so on). And finally, on the migrant's value judgements about the necessities of remittances for the household of origin. Empirically this may depend on variables such as migrant's origin family's structure, origin family's standard of living, number of migrants from the same household, origin family size and so on.

5.4 Data Description

The analyses presented are based on a unique (self-collected) and detailed matched dataset collected between September 2012 and February 2013 from Bangladeshi migrants living in Malaysia, the UK and their origin families (in Bangladesh). As a migrant's remitting behaviour, investment at origin, return migration plans, and all-in-all, his/her SWB depends on the interaction between the migrant and the household of origin, two structured questionnaires for the data collection were designed (following the techniques of Osili (2007); UK/Malaysia Migrant Household Questionnaire and the Households of Origin Questionnaire).

Among the total Bangladeshi migrants, more than 66 percent are either unskilled or semi-skilled and migrated to MENA⁴⁰ countries and South East Asian countries, namely, to Malaysia and Singapore. About 34 percent of the total migrants are skilled and professional, and mainly migrated to the UK, the USA, Australia, Italy, Japan, Germany and South Korea (BMET, 2013). Based on this information, we choose a three-step empirical approach that began with collecting data on Bangladeshi migrants living in Malaysia, then from the UK, and finally, we conducted the survey with their origin family. In Malaysia, with the assistance of a legal Bangladeshi manpower agent, we searched the prospective migrants from Kuala Lumpur. In Kuala Lumpur, most of the Bangladeshi shops, restaurant, money changers, banks, and departmental stores are located at Kotaraya Banglabazar near Jalan Pudu. We contacted the potential respondents there and based on their consent, we kept their mobile phone number and later at their convenience we interviewed them. In a number of cases, it happened that when we went to the migrant residence we found along with the previously arranged migrant, other Bangladeshi migrants were living together or nearby and were able to get the consent of many of them there and also collected their data. A total of 247 respondents agreed to take part in the survey, later 19 of them withdrew their permission during the interview. Finally, 209 migrants had provided all the relevant information.

In the UK, we collected data only from the London Borough of Tower Hamlets. About 37 percent of the Borough's total population originate from Bangladesh (Wikipedia online). The respondents were contacted at shops, Mosques, restaurants, cafes, Bangladeshi travel agencies, banks, money transfer offices,

⁴⁰ MENA refers to 20 member countries of Middle East and North African Countries.

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Bangladeshi newspapers and electronic media's offices, and cultural organisations' offices at Brick Lane, Aldgate, Shadwell, Mile End, Stepney Green, and Lime house. As with the Malaysian sample, for the UK, we firstly obtained consent from the migrant and kept their contact number and later at their convenience, interviewed them at their residence. We obtained the consent of 229 respondents, and of these, usable information was provided by 212 migrants. Finally, based on the information provided by the migrant household, we collected data from their origin households. We were able to collect data from 205 households of origin of the Malaysia migrants and 201 matched data for the UK migrants. Of the 201 UK home households, 4 did not provide us the information about their SWB. Thus, in this case the total sample size was 197.

Tables 5.5 and 5.6 in the appendix, list the definitions of the explanatory variables for the matched samples of UK and Malaysia migrants and their households of origins respectively. The summary statistics for the UK migrants and their origin family and the Malaysian migrants and their origin family are also given in the appendix (Tables 5.7 and 5.8).

Briefly, first considering the demographic characteristics of the migrants, we see that about 70 percent of the UK migrants and 48 percent of the Bangladeshi migrants in Malaysia were married. 52 percent of the migrants from Bangladesh living in Malaysia were either uneducated or had primary education but 69 percent of the total UK migrants were found to have at least 15 years of schooling (Table 5.9).

In the case of the UK migrants, about 6 (13) percent reported life satisfaction as 'very dissatisfied' ('not very satisfied'); average monthly incomes were BDT (Bangladeshi Taka) 1,31,073 (BDT 1,88,850); and average monthly amounts of remittances were BDT 18,815 (BDT 38,980). About 42 percent of the respondents considered their life satisfaction as 'fairly satisfied' and 20 percent mentioned that they were 'very satisfied' with their life. The average monthly income and remittances for the 'fairly satisfied' group were BDT 3, 96,022 and BDT 41,936; the average monthly income and remittances for the 'very satisfied' category of the UK migrants were BDT 5, 17,798 and BDT 1,19,661.

In the case of the Malaysia migrants, 12 (21) percent reported their life satisfaction as being 'very dissatisfied' ('not very satisfied'). The average monthly incomes of these groups were BDT 33,321 and BDT 35,926; while the average monthly remittances were BDT 11,260 and BDT 11,918. 23 percent and 28 percent

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of the migrants living in Malaysia reported 'fairly satisfied' ('very satisfied') regarding their life satisfaction and their average monthly income was BDT 50,040 (BDT 69,344); whilst average monthly amounts of remittances were BDT 18,259 (BDT 32,118).

Turning to the origin families (Table 5.10), about 43 percent of the head of origin families of the UK migrants had a graduate or post-graduate degree but only 10 percent of the head of the origin families of Malaysia migrants had a graduate or post-graduate degree. 48 percent of the UK migrants and 53 percent of the Malaysian migrants origin family's head were either unemployed or retired or housewife and mainly dependent on remittances.

Regarding the life satisfaction scores of home households (Table 5.11), own income (excluding remittances) appears very important: about 32 percent of the UK migrants' origin families and 34 percent of the origin families of Malaysia migrants reported life satisfaction were either "very dissatisfied" or "not very satisfied" and the average monthly income for these groups of respondents were BDT 25,566 and BDT 4,612, respectively. More than 42 percent and 33 percent of the respondents from the origin families of the UK migrants and Malaysia migrants reported "fairly satisfied" or "very satisfied" with their life whose average monthly income were BDT 64,299 and BDT 40,368. 25 percent of the UK migrant's origin families and 33 percent of the origin families from the Malaysia migrants chose the category of life satisfaction as "neither dissatisfied nor satisfied". 64 respondents of the UK migrants' origin families and 70 respondents from the Malaysia migrants origin family were either "very dissatisfied" or "not very satisfied" though average monthly amount of remittances received were higher than their average monthly income. More than 65 percent of both the UK and Malaysia migrants' home households indicated that their socio economic status had moved upward, while 29 percent argued that their socio economic status roughly remained the same and only less than 6 percent indicated that their status moved downward.

5.5 Estimation Techniques

The econometric technique is based on self-assessed life satisfaction of migrants and their households of origin. The dependent variable is an ordered categorical variable, so standard least squares procedures are inappropriate (Long,

1997; Hatcher and Gordon, 2005). In the case of the life satisfaction surveys, migrants and their households of origin's responses were classified into five categories: very dissatisfied, not very satisfied, neither dissatisfied nor satisfied, fairly satisfied and very satisfied, where 1 represents very dissatisfied and 5 the highest satisfaction. The response rates suggest that there is no bias towards any specific categories for both types of respondents - though Bryson *et al.*, (2005) and Brown *et al.*, (2009), argued that the ordinal properties of the data are unaffected by such bias.

In such instances, an ordered probit is generally appropriate (Greene and Hensher, 2010). Here this would be justified on the basis of an underlying latent variable, T^* , such that

$$T_j^* = \beta x_i + u_i \quad (12)$$

where T_j^* defines a latent continuous variable that depends on a set of explanatory variables x and an (standard normally distributed) error term u ; β represents the associated coefficient vector. The relationship between the latent variable and the observed outcome can be represented as:

$$T_j = \begin{cases} 1 & \text{if } -\infty \leq T^* \leq \mu_1 \\ 2 & \text{if } \mu_1 \leq T^* \leq \mu_2 \\ 3 & \text{if } \mu_2 \leq T^* \leq \mu_3 \\ 4 & \text{if } \mu_3 \leq T^* \leq \mu_4 \\ 5 & \text{if } \mu_4 \leq T^* \leq \infty, \end{cases} \quad (13)$$

where, the latent variable is partitioned according to the four unknown boundary points measured by the intervals recorded in the survey.

Under the assumption of normality, the probability of observing T_j is

$$\begin{aligned} Pr (T = 1) &= \Phi(\mu_1 - \beta x) \\ Pr (T = 2) &= \Phi(\mu_2 - \beta x) - \Phi(-\beta x) \\ Pr (T = 3) &= \Phi(\mu_3 - \beta x) - \Phi(\mu_2 - \beta x) \\ Pr (T = 4) &= \Phi(\mu_4 - \beta x) - \Phi(\mu_3 - \beta x) \\ Pr (T = 5) &= 1 - \Phi(\mu_4 - \beta x) \end{aligned} \quad (14)$$

where, Φ is the standard normal cumulative distribution function. The μ_i are unknown parameters representing the cut points between successive alternatives *i.e.*, a transition from one life satisfaction perception category to another (an ordering relationship, $-\infty < \mu_1 < \mu_2 < \dots < \mu_4$ is required to ensure well-defined probabilities). Interpretation of the coefficients of an ordered probit model is complicated by the fact that the direction of the effect is only unambiguous for the lowest and highest categories (McKenzie and Rapoport, 2011; Greene and Hensher, 2010).⁴¹ As a result, we calculate the partial effect of a change in the probability of each of the five categories with respect to changes in the covariates.

5.6 Empirical Findings

The ordered probit coefficient estimates for the migrants are reported in Table 5.1; in Table 5.3, those for the household of origin. Recall that in each model the dependent variable ‘life satisfaction’- is scaled from 1 (very dissatisfied) to 5 (very satisfied). Robust standard errors were allowed for using a Huber-White estimator of the variance-covariance matrix. Note that, the cut points separating the probability distribution are statistically important (often taken as confirmation of ordering being present in the data). The analysis of the cross sectional data for the purpose of the role of remittances on happiness considers both the migrants and their origin family using matched samples.

Tables 5.2 and 5.4 report the partial effects of selected variables calculated at the mean values for all except the binary variables, for which the marginal effects refer to a change from 0 to 1.⁴² Three different specifications of each model are presented, distinguished by the inclusion of additional sets of regressors that examine the specific influences on the happiness of migrants in Table 5.1 and their households of origin in Table 5.3.

5.6.1 Remittances and life satisfaction of migrants

For the migrants, the three different specifications we consider are: firstly, variables pertaining to the migrant only; secondly, variables based on the migrant’s

⁴¹ See also Wooldridge 2002 (chapter 15, pp.503-509); Greene, 1997 (pp.926-931).

⁴² Note that arguably, there could be a correlation between the migrant and the households of origin equation due to the presence of common, or related, unobserved effects. We experimented with a bivariate ordered probit specification, however presumably due to small sample size, convergence problems were encountered.

reporting about the home family are also included; and in the final specification, the additional information from the matched samples of migrants and their origin families is incorporated.

One of the most important determinants of migrants' happiness is the amount of remittances sent. From Table 5.1 we see that the coefficient of '*remittances per month*' is positive and significant suggesting that the higher the amount of remittances per month the higher will be life satisfaction of migrants. Robustly, across all (three) specifications we find that '*remittances per month*' is positive and significant. This indicates that remittances are quite likely the main conduit between the migrant and his/her household of origin. Sending higher amount of remittances not only make the migrant happier but also reveal his/her caring for those whom he/she left-behind (Mckay, 2007). As a robustness check we also included '*remittances relative to income*' as clearly remittances in absolute value will be partly driven by income levels. The results were essentially unchanged to this specification.

The partial effects for the UK and the Malaysia migrants are presented in Table 5.2. There are variations in these across the (three) regressions, but robustly an increase in remittances per month increases the probability of reporting high life satisfaction. This suggests that remittances do have a positive effect on happiness as our common notion of utility suggests, although the effect appears to be small for migrants living in Malaysia. Positive partial effects of the variable '*remittances per month*' for outcome 'fairly satisfied' to 'very satisfied' range from 0.2772 to 0.0008, with that for the UK migrants being 0.274 (Table 5.2, column 4). However, for Malaysia migrants, partial effects here are positive but very small.

The variable '*income per month*' is positive and significant in all three specifications for the UK migrants (at the 1% level) supporting the general proposition that higher income is associated with higher life satisfaction. Moreover, it is generally believed that income is the major cause and consequence of economic migration. According to Bartram (2010, p.345), "...the core purpose of labor migration is to increase one's income by working in a different (typically wealthier) country". Thus migrants with higher income are happier than their lower income counterparts at any point in time. This finding is consistent with Akay *et al.*, (2014); Diener, (2008); and Easterlin, (1974).

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Increases in '*income per month*' lead to a greater probability that the respondent will be 'fairly satisfied' and a lower probability that they are 'very satisfied' for both the UK and Malaysia migrants. For the UK migrants, the probability of reporting life satisfaction for '*income per month*' from 'neither satisfied nor dissatisfied' to 'fairly satisfied' increases quite dramatically from -0.292 to 0.285. Thus the partial effects indicate that an increase in income decreases the probability that respondent reports life satisfaction levels of 'dissatisfied' or 'neither satisfied nor dissatisfied'. However, in case of Malaysia migrants '*income per month*' is significant (at 5%) in only the first specification.

Negative correlations among income, remittances and happiness are found in case of the life satisfaction categories: 'very dissatisfied', 'dissatisfied' and 'neither satisfied nor dissatisfied' (Table 5.2). The findings also suggest that higher monthly income of migrants may, on average, raise their reported life satisfaction. For the 'fairly satisfied' category the partial effect is 0.285, corresponding to a 0.274 percentage points increase in remittances for the UK migrants and the percentage points change in income and remittances for Malaysia migrants are 0.132 and 0.00001. The relationship between the reported life satisfaction level of 'very satisfied' and the migrant's income though positive, however, is very small. This may be due to the aspirations for income. Alternatively, migrants may adjust aspirations and their life satisfaction, to their reference income. Their reference income includes own income, own income relative to that of relevant others, and own income in the past (Easterlin, 2001; Knight and Gunatilaka, 2012b).

It is argued that along with remittances and income, other demographic variables, social capital and psychological factors affect one's happiness (Akay *et al.*, 2014). We next discuss the findings with regard to these. Thus, from Table 5.1, it can be seen that age for the UK migrants is insignificant, but for the migrants living in Malaysia, a U-shaped relationship between age and happiness is evident, supporting the proposition that happiness grows with age. Blanchflower and Oswald (2004) also found similar results.

The effect between lower level of educational attainment and migrants' life satisfaction is negative and significant in case of the UK migrants in all specifications indicating that the higher the level of education the higher will be the migrant's life satisfaction at destination. Akay *et al.*, (2014); Blanchflower and

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Oswald, (2004); Helliwell, (2003); Knight and Gunatilaka, (2012b); and Mitrut and Wolff, (2011) found similar results.

The effect of '*years abroad*' is positive and significant for the UK migrants suggesting that the higher the duration abroad the higher the possibility of migrant's adaptation at host country, which in turn helps them to settle there, and thereby, enhance their life satisfaction. Amit (2010) in this regard argued that migrant's economic success depends on the number of years he or she is in the new country.

To ascertain the impact of migrants' social capital on life satisfaction, three additional variables were considered: '*network size*', '*settlement assistance*' and '*move decision*'. The former is defined as the total number of friends and relatives at destination. The findings in Table 5.6 show that network size is positively associated with satisfaction levels for both the UK and the Malaysian migrants. A strong household network size not only reduces both the costs and the risks of migration (Massey *et al.*, 1987; Roberts and Morris, 2003) but also has a positive impact on smoothing migrant's socialisation at destination. In addition, a migrant's social network abroad will play the vital role of providing information regarding the destination and, importantly, the associated employment opportunities (Piotrowski, 2006). '*Settlement assistance*' is positive, as expected, but insignificant. If the '*move decision*' was taken by the migrant himself/herself, the effect on happiness could be expected to be positive. But, we find the significance of this variable only for the Bangladeshi migrants living in Malaysia. This indicates that a positive correlation of move decision with life satisfaction will reflect the increased expectation of success and commitment to the migration process by migrants who make their own decisions, as suggested by De Jong *et al.*, (2002).

Compared with professional, manager or clerical occupations, migrants in sales or service, and labour or production, or construction (but not for retired or unemployed or housewife) occupations report improved life satisfaction for the UK migrants. This may be due to the fact that professionals are generally skilled migrants and have further education and training in the host country. Due to this, they may compare the opportunity cost of their earnings and living standards both home and abroad. An upward comparison with their job at home makes them happy while a downward comparison sometimes reduces their life satisfaction abroad. However, this variable is not significant for migrants living in Malaysia.

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To analyse the psychological consequences on migration experiences, we have incorporated a number of variables in the estimation. Following Verkuyten (2008), we assume that the greater the immigrant's ethnic identity *i.e.*, the more that they feel, and the more that they believe others perceive them as Bangladeshi, the more satisfied they will be. Indeed, we find that the relationship between happiness and '*ethnic identification*' is positive and significant for both UK and Malaysia migrants supporting our proposition. Furthermore, the positive relationship with life satisfaction suggests that it is possible to have strong identification with the majority group without weakening in ethnic identity (Sam, 1998).

An increase in the respondent's '*perceived cultural effects*'; '*perceived discrimination*'; '*hours work*'; '*family structure*'; and '*spouse location*' have a negative effect on life satisfaction. We find a negative relation between '*perceived cultural conflict*' and life satisfaction of migrants indicating negative outcomes on migrants' attachment and adjustment to a new environment. This means that identification and contact with only the culture of origin, coupled with an absence of contact with the culture of resident society have a negative effect on socio-cultural adjustment on the part of the immigrants which has inverse impact on the reported level of life satisfaction. An alternative interpretation of our result is that in case of international migration, a migrant has to cope with many social and cultural changes simultaneously, which is not only challenging but also stressful. Polek *et al.*, (2009) also found similar results for the German and East European immigrants in Netherlands. Migrants live in a dilemma about the level of contact they wish to have with their culture of origin and to what extent they wish to embrace the host country's norms and culture (Berry, 1997).

An increase in '*perceived discrimination*' decreases the estimated probability that life satisfaction of 'very satisfied' category by 0.005 and 0.037 percentage points for the UK and Malaysia migrants respectively. Thus, not surprisingly, the results suggest a strong negative relationship between '*perceived discrimination*' and life satisfaction. Zhang *et al.*, (2009) found that discrimination experience not only had a direct negative effect on life satisfaction among internal migrants in China, but also an indirect effect on migrants' quality of life through expectation-reality discrepancy. Following Amit (2010) and Polek *et al.*, (2009), we included '*language proficiency*' variable in the migrant's specification. It is evident from Table 5.1 and Table 5.2 that the better the language proficiency, the higher will be the migrant's life satisfaction.

Therefore host country language proficiency not only positively affects migrants' economic and acculturation success (Chiswick and Miller, 1996, Chiswick and Miller, 2002; Mesch, 2003) but also positively impacts on their life satisfaction.

Following Knight and Gunatilaka (2010) the variable, '*hours work per day*' was also included indicating that higher working hours per day will have a negative effect on satisfaction. This proposition was partially supported only for the UK migrants. Luttmer (2005) found a negative and significant relationship between hours of work and happiness, while Meier and Stutzer (2006) found an inverse U-shaped relationship between life satisfaction and working hours indicating that life satisfaction rises initially, reaches a peak, and then starts falling as hours worked rise.

A migrant's life satisfaction is also very likely to depend on those who the migrant left-behind. Considering this, in the second and fifth specifications of Table 5.1, a number of additional variables relating to such are included (for example, *origin family structure*, *spouse live in origin*, *origin family's capability without remittances*, *migrant's assessment on the origin household's standard of living*). These variables are included based on the report of the migrant about the home family. The variable '*family structure*' is negative and significant for the UK migrants suggesting that if the migrant's origin family's structure is extended, the migrant has relatively less concern about those left-behind and therefore this has a positive effect on his/her life satisfaction (although for Malaysian migrants this variable was positive but insignificant). The variable '*spouse location*' is negative and significant (at 1%). This strong level of significance suggests that if the migrant's spouse remains in the origin country, despite possibly remitting more, their life satisfaction levels will be negatively affected. This may be not only due to conjugal separation but also higher psychological pressure to provide more safety and security of the spouse at the origin.

If the origin family is able to maintain their livelihood without remittances, it should make the migrant happier and remittances in this case are not an obligation but a choice. This is captured by the variable, '*family capability without remittances*'. An increase in '*family capability without remittances*' increases the probability of self-assessed high life satisfaction in each group of migrants.

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Table 5.1: Migrant Household's life satisfaction

Migrant Variables	UK Migrant Households			Malaysia Migrant Households		
	(i)	(ii)	(iii)	(i)	(ii)	(iii)
Age	-0.026 (0.061)	-0.034 (0.063)	-0.028 (0.063)	0.122** (0.098)	0.232** (0.108)	0.264** (0.119)
Age squared	0.0004 (0.0007)	0.0002 (0.0007)	0.0002 (0.0007)	-0.001 (0.002)	-0.003* (0.002)	-0.003** (0.001)
Married	0.015 (0.264)	0.172 (0.275)	0.209 (0.275)	0.263 (0.215)	2.850*** (0.809)	3.018*** (0.951)
Illiterate				0.259 (0.403)	0.224 (0.427)	0.163 (0.419)
Primary education	-1.126** (0.491)	-0.732 (0.521)	-0.741 (0.502)	0.426* (0.256)	0.427 (0.289)	0.348 (0.295)
Secondary education	-0.677*** (0.227)	-0.841*** (0.262)	-0.835*** (0.269)	0.609** (0.271)	0.513* (0.293)	0.491* (0.294)
Bachelor	-0.178 (0.265)	-0.194 (0.273)	-0.176 (0.272)			
Poor health	-0.926*** (0.269)	-0.953*** (0.279)	-1.049*** (0.291)	-0.857*** (0.248)	-0.844*** (0.252)	-0.796*** (0.251)
Very poor health	-0.934** (0.487)	-1.166** (0.514)	-1.176** (0.507)	-0.858** (0.332)	-0.537* (0.347)	-0.562** (0.345)
Years abroad	0.039*** (0.014)	0.025* (0.014)	0.023 (0.015)	-0.014 (0.024)	-0.047* (0.027)	-0.042 (0.026)
Income per month	0.898*** (0.269)	0.860*** (0.268)	0.895*** (0.271)	0.687** (0.297)	0.384 (0.329)	0.445 (0.329)
Remittances per month	0.040* (0.024)	0.076*** (0.032)	0.086*** (0.032)	0.0003*** (9.13e-06)	0.0003*** (9.76e-06)	0.0003*** (0.0001)
RS	0.086 (0.215)	0.024 (0.221)	0.015 (0.219)			
Network	0.033*** (0.007)	0.028*** (0.008)	0.029*** (0.009)	0.049*** (0.016)	0.054*** (0.014)	0.055*** (0.015)
Move decision	0.220 (0.195)	0.298 (0.206)	0.278 (0.207)	0.352 (0.242)	0.446* (0.245)	0.459* (0.246)
Settlement assistance	0.071 (0.215)	0.010 (0.219)	0.041 (0.228)	0.013 (0.186)	0.078 (0.210)	0.064 (0.221)
Agriculture				-0.542 (0.361)	-0.381 (0.380)	-0.399 (0.376)
Service/sales	0.541* (0.319)	0.764** (0.311)	0.750** (0.313)	-0.254 (0.267)	-0.216 (0.293)	-0.216 (0.290)
Labour/production/construction	0.030 (0.239)	0.199 (0.274)	0.219 (0.279)	-0.322 (0.276)	-0.195 (0.311)	-0.182 (0.311)
Retired/unemployed/housewife	-0.452 (0.589)	-0.328 (0.650)	-0.436 (0.693)			
Ethnic identification	0.303** (0.159)	0.254* (0.157)	0.218 (0.151)	0.329*** (0.102)	0.342*** (0.111)	0.335*** (0.110)
Perceived cultural conflict	-0.286** (0.116)	-0.375*** (0.121)	-0.374*** (0.127)	-0.398*** (0.108)	-0.369*** (0.111)	-0.395*** (0.117)
Perceived discrimination	-0.396*** (0.130)	-0.507*** (0.139)	-0.536*** (0.145)	-0.375*** (0.098)	-0.366*** (0.099)	-0.369*** (0.105)
Language proficiency	0.293*** (0.089)	0.359*** (0.096)	0.373*** (0.105)	0.212** (0.107)	0.188** (0.103)	0.161** (0.106)
Hours' work	-0.105* (0.056)	-0.092 (0.058)	-0.088 (0.059)	0.037 (0.049)	0.056 (0.054)	0.054 (0.054)
Migrant Reporting About Home Family						
Family structure		-0.550** (0.239)	-0.478** (0.255)		0.124 (0.204)	0.132 (0.207)
Spouse's location		-2.134*** (0.642)	-2.211*** (0.633)		-3.089*** (0.792)	-3.321 (0.925)
Father surviving		0.117 (0.192)	0.205 (0.216)		-0.100 (0.196)	-0.024 (0.220)
Family capability without remittances		0.329** (0.151)	0.318** (0.149)		0.003 (0.109)	0.016 (0.109)
OSOL		0.205 (0.201)	0.207 (0.205)		0.202** (0.082)	0.213** (0.083)
Origin Family Self-Report						
Household head migrant			0.402*			0.013

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			(0.217)			(0.206)
NM			-0.024			0.006
			(0.077)			(0.127)
Origin family size			-0.054			-0.002
			(0.059)			(0.097)
Female head			0.303			0.165
			(0.241)			(0.233)
Dependent			0.041			0.067**
			(0.063)			(0.037)
Cut points						
μ_1	6.759	6.863	7.378	7.577	6.855	8.815
	(3.463)	(3.455)	(3.532)	(3.271)	(3.787)	(3.395)
μ_2	8.558	8.735	9.271	9.244	8.613	9.974
	(3.479)	(3.475)	(3.551)	(3.289)	(3.801)	(3.958)
μ_3	10.515	11.384	12.014	10.487	9.952	11.329
	(3.504)	(3.503)	(3.586)	(3.273)	(3.798)	(3.954)
μ_4	13.186	14.677	15.368	12.138	11.694	13.085
	(3.534)	(3.559)	(3.644)	(3.291)	(3.820)	(3.974)
Number of observations	212	212	197	209	209	205
Log likelihood	-148.427	-126.312	-124.144	-179.175	-170.047	-168.159
Wald chi-squared	148.59	172.54	173.85	206.85	258.26	264.84
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Pseudo R ²	0.51	0.58	0.59	0.45	0.48	0.49

Note: Robust Standard Errors are in the parentheses. ***, **, and * denote 1%, 5%, and 10% level of significance, respectively.

The partial effects of ‘*family capability without remittances*’ for the UK migrants increases the estimated probability of reporting life satisfaction of ‘fairly satisfied’ or ‘very satisfied’ by $(0.101+0.003)$ 0.104 percentage points. This variable is significant (at 5%) for the UK migrants but not significant for the migrants living in Malaysia. Another important variable that may affect migrant’s life satisfaction abroad is the ‘*origin family’s living standard*’. The higher the origin family’s living standard the higher will be migrant’s life satisfaction. This study found no support for this assertion for the UK migrants but strong support for the migrants living in Malaysia.

In the third and sixth specifications in Table 5.1, information from the origin family self-report is also included. In this case, we consider variables whether the ‘*migrant is the household head*’, ‘*total number of migrants*’ from the household living abroad, ‘*origin family size*’, ‘*female head*’, ‘*number of dependants*’. The variable ‘*migrant is the household head*’ is significant for the UK migrants only. The variable ‘*number of dependants*’ is found significant for migrants living in Malaysia only indicating that the presence of children and elderly dependants increases intentions to remit higher because of increased family financial needs. This will certainly lower the migrant’s living standards at abroad, thereby, may reduce his/her reported level of life satisfaction. All other variables have the expected sign but are not significant.

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Table 5.2: Partial Effects (Migrant Household)

Migrant Variables	UK Migrants					Malaysia Migrant				
	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Fairly satisfied	Very satisfied	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Fairly satisfied	Very satisfied
Age	1.08e-08	0.00004	0.009	-0.009	-0.0004	-0.0005	-0.037**	-0.068**	0.079**	0.026**
Married	-1.05e-06	-0.0003	-0.070	0.069	0.002	-0.039	-0.470***	-0.357***	0.413***	0.452**
Poor health	3.86e-06	0.005	0.372***	-0.371**	-0.007	0.004	0.152**	0.149***	-0.251***	-0.055***
Very poor health	0.00002	0.011	0.429***	-0.437**	-0.004	0.003	0.105	0.111	-0.181**	-0.038**
Income per month	-3.44e-07	-0.001	-0.292***	0.285***	0.009*	-0.0009	-0.061	-0.115	0.132	0.045
Remittances per month	-3.32e-08	-0.0001	-0.281***	0.274***	0.0008**	-8.10e-08	-5.25e-06***	-9.79e-06***	0.00001***	3.81e-06***
Network	-1.12e-08	-0.00003	-0.009***	0.009***	0.0003*	-0.0001	-0.008***	-0.014***	0.016***	0.006**
Ethnic identification	-8.39e-08	-0.003	-0.071	0.069	0.002	-0.0007	-0.046***	-0.086***	0.099***	0.033**
Perceived cultural conflict	1.44e-07	0.0005	0.122***	-0.119***	-0.003	0.0008	0.055***	0.102***	-0.118***	-0.040**
Perceived discrimination	2.06e-07	0.0007	0.175***	-0.170***	-0.005	0.0007	0.051***	0.095***	-0.110***	-0.037
Language proficiency	-1.43e-07	-0.0005	-0.121***	0.119***	0.004*	-0.0003	-0.022	-0.041	0.048**	0.016
Hours' work	3.39e-08	0.0001	0.029	-0.028	-0.008	-0.0001	-0.007	-0.014	0.016	0.005
Migrant Reporting About Home Family										
Family structure	1.66e-07	0.0006	0.149**	-0.143**	-0.006	-0.0003	-0.018	-0.034	0.039	0.013
Spouse's location	0.0007	0.095	0.609***	-0.700***	-0.005	0.077	0.564***	0.262**	-0.464***	-0.439**
Family capability without remittances	-1.23e-07	-0.0004	-0.104**	0.101**	0.003	-0.0003	-0.002	-0.004	0.005	0.002
OSOL	-7.94e-08	-0.0003	-0.067	0.066**	0.002**	-0.001	-0.029**	-0.055**	0.063**	0.021**
Origin Family Self-Report										
Household head migrant	-9.13e-08	-0.0004	-0.119**	0.114**	0.006	-0.0003	-0.002	-0.003	0.004	0.001
NM	9.07e-09	0.0003	0.008	-0.008	-0.0002	-0.00001	-0.0008	-0.002	0.002	0.0006
Dependant	-1.59e-08	-0.00005	-0.014	0.013	0.0004	-0.0001	-0.009*	-0.017**	0.020*	0.007*

5.6.2 Remittances and the life satisfaction of household of origin

After discussing the results of the migrants' happiness equation, attention is now turned to that of the origin family. For example, how is this affected by the departure of the family emigrant? These results are based on the origin families' own characteristics, origin families' reporting about the migrant and the migrant's self-report. The ordered probit coefficient estimates are presented in Table 5.3 and the corresponding partial effects (of selected variables) in Table 5.4.

The results show (Table 5.3) that households of origin who receive a higher amount of remittances have a significantly higher level of life satisfaction, all other things equal. Remittances are used not only to repay the emigration related expenses, debts, and income lost by the left-behind but also improve the origin family's education (of any dependants), food consumption, living standards in general, enable land purchase(s), facilitate savings and investments and so on.⁴³ Increased life satisfaction is largely attributed to the higher positive evaluation of '*living environments*' by the households of origin. This variable is not only positive but also significant at 1% for the UK migrants' origin family and at 5% for the Malaysia migrants' origin family respectively. An important factor of origin family's life satisfaction is the monthly '*income of the household without remittances*'. Higher income leads to increased life satisfaction. This variable indicates that better-off households of origin are more likely to have higher life satisfaction.

The relationship between life satisfaction and '*age of the household head*' is negative and significant for the UK migrants. One interpretation may be elderly parents may prefer instrumental support (*i.e.*, hands-on support with personal care and housework) than monetary support. On the other hand, the relationship between life satisfaction and age for the households of origin of migrants living in Malaysia is positive and significant (at 1%). This may be due to the fact that in the case of Malaysia, the majority of the heads of the 'family left-behind' are the spouses of the migrant.

Women report higher levels of life satisfaction, which supports the existing finding in the literature (Knight and Gunatilaka, 2012a; Battistella and Conaco, 1998). The variable, '*number of dependents*' is positive and significant for the UK migrants only. The underlying reason is probably that the higher number of

⁴³ For an extended review see Nguyen et al. (2006).

dependents in the origin family the higher the probability of getting increased financial support from the migrant. Moreover, the dependents of the origin family remain actively involved in care-giving for their older parents, which may indirectly raise the emotional cohesion between the migrant children and their parents living in origin. According to Guo *et al.*, (2009, p.1100), “the presence of non-migrant children and the support provided by them may buffer the negative impact of their siblings migrations on elderly parents”.

The variable ‘*land ownership*’ is insignificant for UK migrants’ household of origin, but is positive and significant (at a conventional level) for all of the specifications of Malaysia migrants’ household of origin. A comparison of socio-economic status after the migration of the family member(s) pre-and post-migration is captured by the variable, ‘*socio-economic status*’. The results suggest that origin family’s life satisfaction increases if migration and the consequent remittances improve the socio-economic status of the migrants.

We additionally include variables based on the home household’s reporting regarding the migrant. In this case, only the variable ‘*number of migrants living abroad*’ is significant (and negative) for the UK migrant’s household of origin suggesting that the higher the number of migrants from a household, the lower will be the reported level of life satisfaction. In this case, the likely higher amount of remittances cannot buffer the negative impact of emigration. On the other hand, this variable is positive and significant (at 1%) for the origin family of Malaysian migrants. The majority of the Malaysia migrants were either unemployed or engaged in agriculture before migration and their families were living at a subsistence level. But migration and the consequent remittances have certainly changed their economic position. So, one more migrant means one less mouth to feed but more remittances.

In the final specification, we also include variables based on the migrant’s self-report (in assessing the life satisfaction of their origin family). The variable ‘*left-behind*’ (1 if the migrant’s spouse and children were left-behind) increases the head of the UK migrants’ origin family’s life satisfaction. As spouse and children are ‘*left-behind*’ along with parents and siblings, migrant has greater responsibilities and generally remits more which ultimately make the origin household happier. While this variable is negative and significant for the origin families of Malaysia migrants. A possible explanation for this finding is that parental absence makes it difficult for

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the spouse with rearing children which cannot be compensated for by remittance flows. In addition, such spouses may feel lonely and isolated.

If migration was due to the poverty of the origin family, this is likely to be reflected in lower satisfaction levels of the household of origin. This study finds support for this assertion. However, the household of origin's life satisfaction will be higher if they encouraged and assisted the migration, both financially and psychologically. This is captured by the variable '*parents and/or family assisted*'. This variable is positive and significant (at 1%) for both groups of migrants' household of origin suggesting that migration and the consequent remittances act as an insurance and investment for the households of origin which certainly should have positive consequences on their life satisfaction.

From Table 5.4 we see that the partial effect of the variable '*age of the household head*' for the 'very satisfied' category is -0.002 percentage points for the UK migrants. The partial effect of the variables '*poor health*' and '*very poor health*' for the UK migrant's head of the household of origin for the 'very satisfied' were -0.040 and -0.045 percentage points respectively and for Malaysia migrants corresponding partial effects were -0.0007 and -0.001. The partial effect of the variables '*income*', '*remittances received*', and '*living environment*' for the 'fairly satisfied' or 'very satisfied' categories were found positive for both groups of migrants' origin families.

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Table 5.3: Home Household's Life Satisfaction

Origin Households Variables	UK Migrant's Households of origin			Malaysia Migrant Households of origin		
	(i)	(ii)	(iii)	(i)	(ii)	(iii)
Age of the household head	-0.028*** (0.009)	-0.026** (0.010)	-0.022** (0.010)	0.037*** (0.008)	0.038*** (0.009)	0.040*** (0.010)
Male	-0.359 (0.305)	-0.297 (0.302)	-0.139 (0.353)	0.070 (0.185)	0.053 (0.187)	0.048 (0.278)
Household size	-0.067 (0.059)	-0.114* (0.066)	-0.064* (0.066)	-0.073 (0.069)	-0.033 (0.075)	-0.088 (0.074)
Number of dependents	0.099* (0.060)	0.132** (0.063)	0.094* (0.065)	0.082 (0.068)	0.052 (0.075)	0.095 (0.074)
Primary education	0.887** (0.394)	0.994*** (0.374)	1.219*** (0.399)	0.235 (0.249)	0.148 (0.248)	0.122 (0.259)
Secondary education	0.895** (0.366)	0.927** (0.367)	1.101** (0.410)	0.419 (0.289)	0.375 (0.293)	0.497* (0.280)
Higher education	0.717* (0.403)	0.769** (0.403)	0.795* (0.437)	1.658*** (0.413)	1.357*** (0.401)	1.324*** (0.399)
Poor health	-0.693*** (0.218)	-0.715*** (0.236)	-0.437* (0.238)	-0.881*** (0.209)	-0.673*** (0.221)	-0.574** (0.245)
Very poor health	-0.808** (0.322)	-0.833** (0.343)	-0.620* (0.337)	-1.901*** (0.317)	-1.838*** (0.322)	-1.638*** (0.358)
Income per month	8.41e-06** (3.56e-06)	9.19e-06** (3.69e-06)	0.00001*** (3.46e-06)	0.00002** (0.00001)	0.00001 (0.00001)	0.00002** (0.00001)
Remittances received per month	1.92e-06* (1.08e-06)	1.87e-06* (1.12e-06)	2.22e-06** (1.00e-06)	0.00006** (0.00002)	0.00005*** (0.00002)	0.00007** (0.00002)
Living environment	0.453*** (0.094)	0.467*** (0.096)	0.415*** (0.092)	0.205** (0.084)	0.170** (0.077)	0.157** (0.079)
Land ownership	-0.058 (0.060)	-0.050 (0.061)	-0.027 (0.064)	0.159** (0.063)	0.142** (0.066)	0.181** (0.076)
Home ownership	0.239 (0.179)	0.206 (0.186)	0.270 (0.189)	0.432** (0.166)	0.311** (0.169)	0.110 (0.187)
Socio-economic status	0.566*** (0.149)	0.518*** (0.158)	0.473** (0.173)	0.305** (0.137)	0.331** (0.142)	0.307** (0.154)
Unemployed	-0.478 (0.338)	-0.352 (0.357)	-0.239 (0.392)	-0.118 (0.253)	-0.220 (0.297)	-0.362 (0.309)
Self-employed	-0.405 (0.265)	-0.406 (0.276)	-0.478* (0.279)	-0.046 (0.262)	-0.175 (0.292)	-0.261 (0.298)
Retired	-0.192 (0.343)	-0.219 (0.357)	-0.439 (0.365)	0.275 (0.295)	0.249 (0.299)	0.173 (0.343)
Home Households Reporting about the Migrant						
Birth position of the migrant		0.054 (0.045)	0.056 (0.049)		-0.069* (0.044)	-0.077* (0.043)
Migrant is the child of the HH head		0.068 (0.241)	0.034 (0.243)		-0.334* (0.209)	-0.547** (0.227)
Number of visits		0.001 (0.028)	0.052 (0.043)		0.116 (0.111)	0.173 (0.127)
Number of migrants		-0.169** (0.086)	-0.200** (0.081)		0.431*** (0.097)	0.616*** (0.094)
Migrant's Self-Report						
Years abroad			0.021* (0.013)			-0.106*** (0.023)
Left-behind			1.116** (0.578)			-0.003 (0.319)
Stay forever			0.248 (0.207)			0.170 (0.200)
Too poor at origin			-0.552** (0.220)			-1.033*** (0.201)
Parents and/or family insisted and assisted			0.745*** (0.224)			0.839*** (0.222)
Cut points						
μ ₁	0.026 (0.766)	-0.211 (0.897)	0.589 (0.983)	2.856 (0.756)	2.702 (0.886)	1.525 (0.920)
μ ₂	1.132	0.936	1.861	3.937	3.845	3.008

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	(0.757)	(0.890)	(0.976)	(0.805)	(0.944)	(0.947)
μ_3	2.381	2.207	3.329	5.481	5.571	5.270
	(0.772)	(0.903)	(0.985)	(0.931)	(1.085)	(1.071)
μ_4	3.414	3.247	4.476	7.245	7.609	7.643
	(0.787)	(0.910)	(0.993)	(1.154)	(1.343)	(1.300)
Number of observations	197	197	197	205	205	205
Log likelihood	-220.808	-218.172	-202.308	-203.555	-188.635	-157.844
Wald chi-squared	187.52	194.47	242.85	128.69	134.17	189.76
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Pseudo R ²	0.30	0.30	0.36	0.36	0.40	0.50

Note: Robust Standard Errors are in the parentheses. ***, **, and * denote 1%, 5%, and 10% level of significance, respectively

Home ownership (*'home ownership'*) increases the estimated probability of 'very satisfied' life satisfaction levels by 0.025 and 0.00002 percentage points for the UK and Malaysia migrants, respectively. If the spouse and children of the migrant are left-behind, this raises the reported life satisfaction of origin family for the UK migrants. The partial effect of the variable *'left-behind'* for 'very satisfied' category for the origin family of UK migrants is 0.232 percentage points. However, the partial effect of this variable for the origin family of the migrants living in Malaysia was negative though very small and insignificant.

Table 5.4: Partial Effects (Home Households)

Migrant Variables	UK Migrants					Malaysia Migrant Category				
	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Fairly satisfied	Very satisfied	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Fairly satisfied	Very satisfied
Age of the household head	0.0008**	0.005**	0.002	-0.006**	-0.002**	-0.0003	-0.007**	-0.003	0.010***	0.00005
Primary	-0.021**	-0.182**	-0.252**	0.228***	0.227*	-0.001	-0.020	-0.010	0.030	0.0002
Secondary	-0.034**	-0.212**	-0.146**	0.246***	0.145**	-0.004	-0.075**	-0.054	0.131**	0.001
Higher	-0.027	-0.166**	-0.085	0.189**	0.089	-0.004	-0.115**	-0.331**	0.435***	0.015
Poor health	0.017	0.099*	0.031	-0.107*	-0.040*	0.007	0.107**	0.014	-0.128**	-0.0007
Very poor health	0.034	0.152*	0.004	-0.145**	-0.045**	0.082	0.396***	-0.253**	-0.224***	-0.001
Income per month	-3.57e-07**	-2.28e-06**	-9.22e-07*	2.56e-06***	1.00e-06**	-2.31e-07	-4.43e-06**	-1.90e-06	6.52e-06**	3.84e-08
Remittances per month	-7.72e-08*	-4.94e-07**	-1.99e-07*	5.53e-07**	2.17e-07**	-4.98e-07*	-9.53e-06***	-4.08e-06	0.00001***	8.25e-08
Living environment	-0.014**	-0.092***	-0.037**	0.103***	0.041***	-0.001	-0.026*	-0.011	0.038**	0.0002
Land ownership	0.0009	0.006	0.002	-0.007	-0.003	-0.002	-0.030**	-0.013	0.045**	0.0003
Home ownership	-0.011	-0.062	-0.019	0.067	0.025	-0.001	-0.019	-0.007	0.027	0.0002
Socio-economic status	-0.016**	-0.105**	-0.042**	0.117**	0.046**	-0.003	-0.051**	-0.022	0.075**	0.0004
Home Households Reporting about the Migrant										
Birth position	-0.002	-0.013	-0.005	0.014	0.006	0.0006	0.013*	0.006	-0.019*	-0.0001
Number of visits	0.002	0.012	0.005*	-0.014***	-0.005***	-0.005	-0.103	-0.044	0.151**	0.00008
Migrant is the child of the household head	-0.001**	-0.008**	-0.003**	0.009	0.003**	0.006	0.1004**	0.018	-0.123***	-0.0007
Origin Family Self-Report										
Years abroad	-0.0007	-0.005	-0.002	0.005**	0.002	0.0009	0.018***	0.007	-0.026***	-0.0002
Left-behind	-0.014**	-0.147***	-0.262*	0.191***	0.232	0.00007	0.001	0.0006	-0.002	-0.00001
Too poor at origin	0.020*	0.122**	0.046*	-0.135**	-0.055**	-0.006	-0.123***	-0.099*	0.227***	0.001
Parents and/or family insisted and assisted	-0.034**	-0.173**	-0.034	0.176***	0.065**	0.013	0.181***	0.051	-0.244**	-0.002

5.7 Conclusion

This study explores the factors affecting the happiness of migrants and their households of origin based on a novel data set of matched samples of Bangladeshi migrant households living in the UK and Malaysia and their origin families living in Bangladesh. The data were collected from September 2012 to February 2013.

The empirical findings suggest that migrants' remittances play a significant role in stimulating the happiness of both the migrant and the origin household, conditional on their demographic characteristics, human capital and social capital, numerous economic and psychological factors and also on the country of destination.

It was also found that age and marriage have positive significant impact on the life satisfaction of semi-skilled and unskilled migrants' *i.e.*, migrants in Malaysia, while high human capital is positively related to the life satisfaction of the UK migrants. A migrant's social network abroad is an important factor for the adjustment and attachment with the new environment which certainly have positive implications on his/her life satisfaction. The results strongly support the hypothesis of migrants' network theory and show an association between the size of the migrant's network ties and increased life satisfaction. Strong networks do provide migrants with job information and employment access that enhance the labour force participation process (De Jong *et al.*, 2002). For economically motivated migrants, having gained access to higher incomes abroad, sending more remittances home raises their happiness levels. Perceived cultural conflict and discrimination are shown to be more important drivers for immigrants' life satisfaction levels. Strong ethnic identity and host country's language proficiency raise the migrants' propensity to assimilate into the receiving society.

Migrants' life satisfaction was also found to depend on those who the migrant left-behind. If the migrant's spouse lives in origin, their life satisfaction reduces in spite of the likelihood of receiving more remittances. But if the origin family structure is extended, the migrant's tension about the left-behind remain relatively less and it affect positively on his/her life satisfaction. Most of the migrants living in Malaysia are temporary migrants and the majority of migrants in the UK are permanent migrants. So, the findings also have indirect consequences on the life satisfaction of the decision of permanent versus temporary migration.

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The life satisfaction of the migrant's household of origin was also analysed using a very novel matched sample approach. We considered origin families' own characteristics, origin families' reporting about the migrant and the migrant's self-report. Households of origin's life satisfaction was found to not only depend on receiving remittances but also other factors such as number of migrants from the household living abroad and the migrants' country of destination.

Origin family's positive evaluations of their living environment are also associated with increased life satisfaction. Home households' life satisfaction increases if migration and the consequent remittances improve their socio-economic status. The higher is the number of migrants from the same household, the lower life satisfaction levels, even though they receive larger amounts of remittances. This assertion is true for the skilled migrant's origin family. If the skilled migrant's spouse and children are left-behind, this makes the origin families household head (parents or elderly brothers) happier as the possibility of interaction is higher and the migrant in this case has greater responsibilities and for which they generally remit more. For unskilled or semi-skilled migrants (*i.e.*, migrants living in Malaysia) the relationship with life satisfaction of the spouse and children left-behind is found to be negative suggesting that parental absence cannot be compensated for by remittance flows.

A major implication of the results is that the measurement of economic welfare of migration should consider both conventional economic analysis and also subjective considerations such as the status utility of migrants. A caveat to these overall findings is that it is possible that happy migrants simply tend to remit more. A simultaneous empirical model to examine the impacts of happiness on remitting behaviour and remitting behaviour on happiness is beyond the scope of the current chapter, and certainly a topic for further research.

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Appendix 5

Table 5.5: Variable Definitions of Migrant Households

Variables	Definition
Migrant Variables	
Life satisfaction	Self-reported number or level (5-point ordinal scale) of life satisfaction using four items of the Satisfaction With Life Scale developed by Diener et al., (1985)
Age	Age in year during the survey year
Age squared	Age squared
MS	Marital status at migration. A dummy variable equal to 1 if married at the time of migration, otherwise equal to 0
Education/ Human capital	
Illiterate	A dummy variable equal to 1 the household head cannot read and write , otherwise equal to 0
Primary education	A dummy variable equal to 1 if ≤ 5 years of schooling, otherwise equal to 0
Secondary education	A dummy variable equal to 1 if 6–12 years of schooling, otherwise equal to 0
Graduate	0
Higher education	A dummy variable equal to 1 if 14-15 years of schooling, otherwise equal to 0
	A dummy variable equal to 1 if more than 15 years of schooling, otherwise equal to 0
Health Status of Migrant	
Very good or good	A dummy variable equal to 1 if the respondent reports that his/her health status is very good or good, otherwise equal to 0
Poor	A dummy variable equal to 1 if the respondent reports that his/her health status is poor, otherwise equal to 0
Very poor	A dummy variable equal to 1 if the respondent reports that his/her health status is very poor, otherwise equal to 0
Years abroad	Number of years the migrant has been living abroad.
Income	Net monthly income of the migrant household. Net income is the combination of migrant’s own income from all possible sources plus spouse’s income plus net government benefits minus taxes. Values were converted into Bangladeshi Taka (BDT)
Remittances per month	Amount of remittances per month (000 BDT)
RS	Residency status. A dummy variable equal to 1 if the migrant is a permanent resident or citizen of the host country, otherwise equal to 0
Migrant’s social capital	
Network	Number of friends and relatives abroad.
Move decision	A dummy variable equal to 1 if the migration decision was taken by the migrant himself/herself , otherwise equal to 0
Settlement assistance	A dummy variable equal to 1 if the migrant received any assistance in getting a job or accommodation in the host, otherwise equal to 0
Occupation	
Professional/manager/clerical	A dummy variable equal to 1 if the occupation category of the respondent is professional/Manager/Clerical, otherwise equal to 0 (reference group)
Service/sales	A dummy variable equal to 1 if the occupation category of the respondent is Service/Sales, otherwise equal to 0
Labour/production/construction	A dummy variable equal to 1 if the occupation category of the respondent is Labour/Production/Construction, otherwise equal to 0
Retired/unemployed/housewife	A dummy variable equal to 1 if the occupation category of the respondent is Retired/Unemployed/Housewife, otherwise equal to 0
Ethnic Identification	Combing the response of three questions (5-point scale) into one score and higher scores indicates greater ethnic identification. Questions were: a) “I am in many ways similar to Bangladeshis in Bangladesh”

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Perceived cultural conflict	<p>b) "I am in many ways similar to Bangladeshis in the ML/UK"</p> <p>c) "I see myself as a typical Bangladeshi"</p> <p>Responses were coded from 1= strongly disagree to 5 = strongly agree</p> <p>Combing the response of four questions (5-point scale) into one score .</p> <p>Questions were:</p> <p>(a) "I sometimes feel that I live between two cultures"</p> <p>(b) "I sometimes find it difficult to show consideration for both the Bangladeshi and the UAE/UK culture"</p> <p>(c) "I sometimes feel insecure about how to relate to Bangladeshis"</p> <p>(d) "I sometimes feel insecure about how to relate to the UAE/British"</p> <p>Response categories were ranged from 1= strongly disagree to 5 = strongly agree</p>
Perceived discrimination	<p>Combing the response of three questions (5-point scale) into one score and higher scores indicates higher level of discrimination. The questions were:</p> <p>(a) To what extent you have experienced discrimination in getting a job?</p> <p>(b) To what extent you have experienced discrimination in finding a house?</p> <p>(c) To what extent you have experienced discrimination on street, in public transport and in shops?</p> <p>Response categories were ranged from 1= never to 5 = always</p>
Language proficiency	<p>Host country language proficiency of the migrant was measured using six subjective assessments of the migrant based on the flowing narrative statements:</p> <p>(a) I can speak English/Malay; (b) I enjoy English/Malay movies/news on TV; (c) I enjoy reading books in English/Malay; (d) My thinking is done in English language/Malay language; (e) I associate with Anglos/Malayalam and (f) My friends are of Anglo origin/ Malayalam.</p> <p>Response categories were ranged from 1= not at all to 5 = very well</p>
Hours' work	<p>Total number of working hours per day</p>
Migrant Reporting About Home Family	
Family structure	<p>Family structure. A dummy variable equal to 1 if the migrant's origin family is nuclear, otherwise equal to 0</p>
Spouse's location	<p>A dummy variable equal to 1 if the migrant's spouse lives in the origin country, otherwise equal to 0</p>
Father surviving	<p>A dummy variable equal to 1 if the migrant's father is alive, otherwise equal to 0</p>
Family capability without remittances	<p>Migrant's assessment (on a 5 ordered category) about his origin family's capability in providing everyday basic needs without remittances. Response categories were ranged from 1= very low to 5 = higher</p>
OSOL	<p>Migrant's assessment (on a 5 ordered category) about his origin household's standard of living compared to average Bangladeshi family. Response categories were ranged from 1= very low to 5 = higher</p>
Origin Family Self-Report	
Household head migrant	<p>A dummy variable equal to 1 if the migrant is the head of the origin family, otherwise equal to 0</p>
NM	<p>Number of migrants. Total number of migrants from the household living abroad</p>
Origin family size	<p>Origin family size</p>
Female head	<p>A dummy variable equal to 1 if the head of the origin family is a female, otherwise equal to 0</p>
Dependent	<p>All people in origin household younger than 16 and older than 65 years and non-working members between 16 and 65 years of age</p>

Table 5.6: Variable Definitions of Households of Origin

Variables	Definition
home household Variables	
Life satisfaction	Self-reported number or level (5-point ordinal scale) of life satisfaction using four items of the Satisfaction With Life Scale developed by Diener et al. (1985)
Age	Age of the household head during the survey year
Male	A dummy variable equal to 1 if the respondent was a male, otherwise equal to 0
Household size	Total number of members in the household
Dependent	All people in origin household younger than 16 and older than 65 years and non-working members between 16 and 65 years of age
Education/ Human capital	
Illiterate/no education	A dummy variable equal to 1 the household head cannot read and write , otherwise equal to 0
Primary education	A dummy variable equal to 1 if ≤ 5 years of schooling, otherwise equal to 0
Secondary education	A dummy variable equal to 1 if 6–12 years of schooling, otherwise equal to 0
Higher education	A dummy variable equal to 1 if ≥ 15 years of schooling, otherwise equal to 0
Health Status of Migrant	
Very good or good	A dummy variable equal to 1 if the respondent reports that his/her health status is very good or good, otherwise equal to 0 (reference category)
Poor	A dummy variable equal to 1 if the respondent reports that his/her health status is poor, otherwise equal to 0
Very poor	A dummy variable equal to 1 if the respondent reports that his/her health status is very poor, otherwise equal to 0
Income	Monthly Income of the household without remittances. Values were converted into Bangladeshi Taka (BDT)
Remittances	Amount of remittances received per month (000 BDT)
Living Environment	Comparison of quality of living environment on 10 items: Drinking water, sanitation type, residence type, location of residence, quality of residence, price of residence, community relations, kids/siblings education facilities, medical facilities, and safety and security. Responses were combined based on the respondents subjective assessments of the following categories: Very bad =1, Bad =2, Better =3, Good= 4, Very good =5
Land ownership	Characteristics of land owned by the household: 0= none, landless; 1= small land owner (upto 5 Bigha); 2= medium landowner (upto 10 Bigha) and 3= large land owner (more than 10 Bigha)
Home ownership	A dummy variable equal to 1 if the household owns a home, otherwise equal to 0
Socio-economic status	Evaluation of socio-economic status compared after the migration of the family member (s) with before. The responses were coded: moving downward =1, roughly stay the same =2, moving upward=3
Occupation of the household head	
Unemployed	A dummy variable equal to 1 if the household head is unemployed, otherwise equal to 0
Employed	A dummy variable equal to 1 if the household head is employed, otherwise equal to 0 (reference group)
Self-employed	A dummy variable equal to 1 if the household head is employed, otherwise equal to 0
Retired	A dummy variable equal to 1 if the household head is Retired, otherwise equal to 0
Home Household Reporting About the UK/ML Migrant	
Birth position of the migrant	Birth position of the migrant
Migrant is the child of the respondent	A dummy variable equal to 1 if the migrant is the child of the respondent, otherwise equal to 0
Visit	Number of time migrant has visited the origin family.
Number of migrants	Total number of migrants from the household living abroad
Migrant's Self-Report	
Years abroad	Number of years the migrant has been living abroad.
Income	Net monthly income of the migrant household. Net income is the combination of migrant's own income from all possible sources plus spouse's income plus net

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	government benefits minus taxes. Values were converted into Bangladeshi Taka (BDT)
Left behind	A dummy variable equal to 1 if the migrant's spouse and children left behind, otherwise equal to 0
Stay forever	A dummy variable equal to 1 if the migrant wishes to stay forever, otherwise equal to 0
Reason to Migrate	
Too poor at origin	A dummy variable equal to 1 if the reason to migrate was reported as too poor at origin, and wants to assist with family expenditure, otherwise equal to 0
Parents/family insisted and assisted financially and psychologically	A dummy variable equal to 1 if the reason to migrate was reported parents/family insisted and assisted financially and psychologically, otherwise equal to 0

Table 5.7: Summary Statistics of the Migrant Households

Variables	UK Migrants		Malaysia Migrants	
	Mean	Std. dev.	Mean	Std. dev.
Life Satisfaction	3.575	1.122	3.344	1.392
Age	37.20	9.600	31.095	6.660
Age squared	1475.778	850.919	1011.086	446.835
Married	0.693	0.462	0.488	0.501
Illiterate	-	-	0.076	0.267
Primary education	0.094	0.293	0.440	0.497
Secondary education	0.207	0.407	0.344	0.476
Bachelor	0.241	0.428	-	-
Higher education	0.458	0.499	0.139	0.347
Good or very good health	0.684	0.466	0.727	0.446
Poor Health	0.245	0.431	0.191	0.394
Very poor health	0.071	0.257	0.081	0.274
Years abroad	12.717	10.093	6.223	5.014
Income per month	336709.30	197478.10	48993.23	31508.89
Remittances per month	51672.17	66979.28	19386.26	16154.31
RS	0.518	0.500	-	-
Network	24.169	15.266	13.794	10.946
Move Decision	0.321	0.468	0.708	0.455
Settlement assistance	0.75	0.434	0.669	0.471
Agriculture	-	-	0.172	0.378
Professional or manager or clerk	0.387	0.488	0.134	0.341
Services or sales	0.203	0.403	0.368	0.483
Labour or production or construction	0.377	0.485	0.325	0.469
Retired or unemployed or housewife	0.033	0.179	-	-
Ethnic identification	3.825	0.839	3.129	1.166
Perceived cultural conflict	2.887	1.297	3.160	1.059
Perceived discrimination	2.495	1.354	3.205	1.177
Language proficiency	3.344	1.196	2.602	1.144
Hours' work	8.660	2.137	11.134	1.809
Family structure	0.637	0.482	0.416	0.494
Spouse location	0.066	0.249	0.454	0.499
Father surviving	0.481	0.500	0.545	0.499
Family's capability without remittances	3.486	1.069	2.358	1.114
OSOL	4.033	0.744	3.076	1.291
Spouse and Children left behind	0.031	0.172	0.278	0.449
Wishes to stay	0.695	0.461	0.679	0.468
Too poor at origin	0.487	0.501	0.610	0.499
Parents and/or family insisted and assisted	0.629	0.484	0.359	0.481

Remittances and Happiness of Migrants and Their Home Households

Table 5.8: Summary Statistics of the Households of Origin

Variables	UK Migrants Households of Origin		Malaysia Migrants Households of Origin	
	Mean	Std. dev.	Mean	Std. dev.
Life Satisfaction	3.162	1.334	2.956	1.206
Age	54.213	14.659	43.624	15.724
Male	0.761	0.427	0.605	0.490
Household size	6.084	2.823	5.923	1.981
Number of dependents	4.127	2.619	4.622	2.290
Illiterate	0.051	0.220	0.185	0.389
Primary education	0.157	0.365	0.380	0.487
Secondary education	0.365	0.482	0.332	0.472
Higher education	0.426	0.495	0.103	0.303
Good or very good health	0.401	0.491	0.520	0.501
Poor Health	0.401	0.491	0.335	0.473
Very poor health	0.198	0.399	0.155	0.363
Income per month	49558.37	34118.01	7573.902	11579.38
Remittances received per month	45624.79	80699.97	24689.52	16194.35
Living environment	3.578	1.253	2.527	1.251
Land ownership	1.482	1.364	1.650	1.166
Home ownership	0.670	0.471	0.626	0.484
Unemployed	0.173	0.379	0.422	0.495
Self-employed	0.264	0.442	0.359	0.480
Employed	0.254	0.436	0.121	0.327
Retired	0.309	0.463	0.102	0.303
Socio-economic status	2.614	0.583	2.602	0.590
Birth position of the migrant	3.167	2.154	3.233	2.027
Migrants is the child of the HH head	0.319	0.467	0.349	0.477
Number of visits	2.695	2.939	1.000	1.318
Number of migrants	1.834	1.237	1.584	0.851
Household head migrant	0.169	0.376	0.411	0.493
Female head	0.235	0.457	0.406	0.492

Remittances and Happiness of Migrants and Their Home Households

Table 5.9: Frequency of responses to selected questions (Migrants responses)

	UK Migrants (%) n =212	Malaysia Migrant (%) N =209
Married	147 (69.33)	102 (48.80)
Education		
No education	---	16 (7.65)
Primary	20 (9.43)	92 (44.02)
Secondary	44 (20.75)	72 (34.45)
Graduate	51 (24.06)	---
Higher	97 (45.74)	29 (13.88)
Health		
Good/Very Good	145 (68.40)	169 (80.86)
Poor	52 (24.53)	25 (11.96)
Very Poor	15 (7.08)	15 (7.18)
Permanent Resident	135 (63.68)	5 (2.39)
Temporary Resident	77 (36.32)	204 (97.61)
Occupation		
Agriculture	---	36 (17.22)
Professional	82 (38.68)	28 (13.40)
Service/Sales	43 (20.28)	77 (36.84)
Labour/Production	80 (37.74)	68 (32.54)
Retired/Housewife	07 (3.30)	---
Perceived Cultural Conflict		
Strongly disagree	26 (12.26)	13 (6.22)
Disagree	77 (36.33)	42 (20.10)
Neither agree nor disagree	40 (18.87)	58 (27.75)
Agree	33 (15.57)	70 (33.49)
Strongly Agree	36 (16.98)	26 (12.44)
Perceived Discrimination		
Strongly disagree	61 (29.19)	25 (11.96)
Disagree	69 (33.01)	34 (16.26)
Neither agree nor disagree	20 (9.43)	55 (26.32)
Agree	40 (18.87)	68 (32.54)
Strongly Agree	22 (10.38)	27 (12.92)
Language Proficiency		
Not at all	10 (4.72)	25 (11.96)
Very little	31 (14.62)	91 (43.55)
Moderate	64 (30.19)	34 (16.26)
Well	91 (42.92)	48 (22.97)
Very well	16 (7.55)	11 (5.26)
Origin Family Structure		
Nuclear	135 (63.67)	87 (41.63)
Extended	77 (36.33)	122 (58.37)
Origin Family's capability without remittances		
Very low	7 (3.30)	48 (22.97)
Low	33 (15.57)	83 (39.71)
Same as others	62 (29.25)	45 (22.53)
Better than others	70 (33.02)	21 (10.05)
Higher	40 (18.86)	12 (5.74)
Origin family's standard of living		
Very low	2 (0.94)	3 (1.44)
Low	6 (2.83)	44 (21.05)
Same as others	25 (11.79)	73 (34.93)
Better than others	129 (60.85)	69 (33.01)
Higher	50 (23.58)	20 (9.57)
Life satisfaction		
Very dissatisfied	12 (5.66)	25 (11.96)
Not very satisfied	28 (13.21)	44 (21.05)
Neither dissatisfied nor satisfied	41 (19.34)	33 (15.79)
Fairly satisfied	88 (41.51)	48 (22.97)
Very satisfied	43 (20.28)	59 (28.23)
Reason to Migrate		
No future at origin/too poor at origin	96 (48.73)	95 (46.34)
Parents/family insisted and assisted financially and psychology	124 (62.94)	74 (36.10)

Remittances and Happiness of Migrants and Their Home Households

Table 5.10: Frequency of responses to selected questions (Home households responses)

	UK Home Household (%) N=197	Malaysia Home Household (%) N= 205
Average no. of dependents	4.12	5.68
Education		
No education	10 (5.07)	38 (18.54)
Primary	31 (15.74)	78 (38.05)
Secondary	72 (36.55)	68 (33.17)
Higher	84 (42.64)	21 (10.24)
Health		
Good/Very Good	79 (40.10)	105 (51.22)
Poor	79 (40.10)	68 (33.17)
Very Poor	39 (19.80)	32 (15.61)
Occupation		
Unemployed	34 (17.26)	87 (42.44)
Employed	50 (25.38)	24 (11.71)
Self-employed	52 (26.40)	74 (36.10)
Retired/Housewife	61 (30.96)	21 (10.24)
Living Environment		
Very Bad	15 (7.61)	54 (26.35)
Bad	28 (14.21)	53 (25.85)
Better	39 (19.80)	50 (24.39)
Good	58 (29.44)	32 (15.61)
Very Good	57 (28.93)	16 (7.80)
Land Ownership		
Land less	79 (40.10)	41 (20.00)
Small Land owner	23 (11.68)	62 (30.24)
Medium Landowner	16 (8.12)	28 (13.66)
Large landowner	79 (40.10)	74 (36.10)
Home ownership	132 (67.00)	129 (62.93)
Socio-economic status		
moving downward	10 (5.07)	11 (5.37)
roughly stay the same	56 (28.43)	59 (28.78)
moving upward	131 (66.50)	135 (65.85)
Migrant is the child of the household head	63 (31.98)	72 (35.12)
Spouse and Children left behind	06 (3.05)	57 (27.80)
Wishes to stay forever	137 (69.54)	140 (68.29)
Life satisfaction		
Very dissatisfied	28 (14.21)	30 (14.63)
Not very satisfied	36 (18.27)	40 (19.52)
Neither dissatisfied nor satisfied	50 (25.38)	67 (32.68)
Fairly satisfied	42 (21.33)	45 (21.95)
Very satisfied	41 (20.81)	23 (11.22)

Table 5.11: Life satisfaction, Income and Remittances of Migrants and households of origin

Life satisfaction	UK				Malaysia			
	Migrants		Households of origin		Migrants		Households of origin	
	Average income per month (BDT)	Average Remittances per month (BDT)	Average income per month (BDT)	Average Remittances received per month (BDT)	Average income per month (BDT)	Average Remittances per month (BDT)	Average income per month (BDT)	Average Remittances received per month (BDT)
Very dissatisfied	131073.40	18815.47	16709.64	19788.69	33320.80	11260.07	3750.00	11416.67
Dissatisfied	188849.90	38980.56	34423.61	25775.46	35925.57	11917.85	5475.00	19618.75
Neither satisfied nor dissatisfied	203741.30	35843.02	54572.00	49931.67	40381.18	14375.02	5000.00	21974.50
Fairly satisfied	396022.60	41936.33	54700.00	53571.43	50040.14	18259.69	11670.00	28616.67
Very satisfied	517798.20	119661.11	73899.46	67304.88	69344.66	32118.64	15695.65	52119.56

CHAPTER 6: CONCLUSION

6

Human trafficking is one of the worst forms of transnational crime, and is a major contemporary economic and social problem. This phenomenon is so multifaceted that special terms for human trafficking are routine jargon, such as commodification of persons, bonded slavery, forced labour, or debt bondage. The International Labour Organization (2012) recently estimated the number of persons in forced labour as a result of trafficking at 20.9 million, a marked increase over the 2.45 million estimates for 2005. While the current situation is thus rather bleak, the outlook is even more dismal. According to the US Department of State (2006), an estimated 600,000 to 800,000 people are trafficked annually. Despite a migration flow of this magnitude, human trafficking is an under-researched topic in the academic literature. The first half of the current thesis provides both a theoretical framework and empirical findings that attempt to address this gap in the literature, and highlights areas for future research and data collection.

The second half of this thesis deals with international migration and subsequent remittances. Remittances and their determinants are strongly linked to the economic growth and development of labour-exporting, remittance-receiving economies as workers' remittances provide additional capital flows. It is generally conjectured that remitting behaviour varies depending, among other things, upon age, education, occupation, employment, motive for remitting, gender, size of the household, access to credit, and years since migration. We investigate whether the

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remitting behaviour follows the voluntary, or involuntary, transfer models of Chapter Four and also estimate happiness functions to discover how remittances influence happiness among migrants and households of origin in the final chapter. Most empirical research on remittance behaviour has been based on information collected either from the recipients or from the migrants. This thesis represents a disaggregated view of international remittance flows among one of the top ten remittance receiving nations, Bangladesh, using *matched samples* of Bangladeshi migrant households living in the UK and Malaysia and their origin families living in Bangladesh.

6.1 Major Findings

In the second chapter, a theoretical model is constructed based on incomplete information which pays particular attention to the organisational process of human trafficking. It uses optimal contract theory, and focuses on the maximum likely profit of the traffickers. A key component of the model is a queue order of prospective migrants. Traffickers can deceive the migrants not only by altering the parameters of the migration-debt contract, but also by establishing a queue order of the prospective migrants. The optimal additional amount that a prospective migrant should pay is derived: it is a function of the effort that the traffickers will apply in the migration process. By doing so, they gain reputation on the one hand, and yet on the other hand, they are able to charge the migrants an amount beyond the contracted price to expedite the migration process, which involves moving the migrants up the queue order. The model is motivated through reference to human trafficking in Bangladesh though it should be applicable to most instances of human trafficking. The theoretical analysis shows that a model can be developed that is well aligned with key features of the trafficking process, and which yields predictions which are open to empirical testing.

In the third chapter, two aspects of the illegal migration process are examined. The first of these relates to the total sums of money that trafficked individuals pay to their traffickers. The second aspect relates to the use of migration contracts comprising both an up-front payment and a deferred payment (that is, a shared contract) as opposed to the contract based only on an up-front component.

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The empirical research is based on data on illegal migrants from three field surveys conducted in Bangladesh from April 2009 to November 2010. The results show that individual characteristics (age, gender and marital status), and the main features of the trafficking process (costs and extra payments) are key determinants of the incidence of shared contracts, and of the amount of the deferred component under these contracts. The migrant's household labour and asset endowments are also influential in this regard, but to a lesser extent than the individual characteristics and the cost and extra-payment variables. Even where variables are statistically insignificant, which may arise simply due to the relatively small sample size, the direction of impact is in accord with expectations.

In the fourth chapter, we examine under which condition migrants are compelled to remit to their households of origin. Our findings suggest that permanent and skilled migrants' age is negatively related to obligatory transfers of remittances, while the opposite is true for the temporary and semi-skilled or unskilled migrants. The amounts of voluntary remittances are greater among unmarried migrants. If migrants maintain more social ties with the host country then the likelihood of sending remittances under the obligation motive diminishes. However, the higher the percentage of migration cost borne by the origin family the higher is the likelihood of obligatory remittances. In this sense, migration and the consequent remittances could be treated as insurance for the home households. If the migrants are either a permanent resident or a citizen of host country, then voluntary transfers are higher than obligatory transfers. Alternatively, we can say that temporary migrants remit more for obligatory motives. Voluntary remittances increase with the migrant's duration to stay abroad while obligatory transfers have no such change. Migrants who frequently visit their home country are less inclined to remit for voluntary reasons. In addition, in the case of the UK migrants, it is evident that if migrants have a higher numbers of friends and relatives abroad, they generally remit more to their community at origin i.e. they opt for voluntary transfers. Migrants remit more for obligation if the spouse of the migrant's remains in the origin country and also the origin's family structure is extended. These variables indicate strong social attachments with the origin country. The relationship between higher number of economically active members at origin and voluntary transfers from the migrants are found to be positive which is consistent with the investment motive to remit.

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In the fifth chapter, based on a theoretical model, it is estimated how remittances affect the happiness of migrants and their households of origin using matched samples of Bangladeshi migrants living in the UK and Malaysia. The results indicate that migrants' remittances play a significant role in stimulating happiness, (conditional on a range of demographic characteristics, such as: human capital, various economic and psychological factors and the country of destination). In addition, migrants' social networks abroad have a positive and significant role in their life satisfaction which indirectly has positive consequences on sending higher amount of remittances. However, if the migrant's spouse lives in the origin country, his life satisfaction reduces in spite of remitting more.

The life satisfaction of migrants' households of origin was also considered, again using matched samples. The life satisfaction of the households of origin not only depends on receiving remittances but also other factors such as number of migrants from the household living abroad and the migrants' country of destination. A higher number of migrants from the same household have a negative impact on life satisfaction although receiving higher amounts of remittances. This assertion is true for the skilled migrant's origin family. If the skilled migrant's spouse and children are 'left behind', this makes the origin families household head (parents or elderly brothers) happier as the possibility of interaction is higher and the migrant in this case has greater responsibilities and for which generally remit more. For unskilled or semi-skilled migrants the relation of life satisfaction with spouse and children left behind is found to be negative suggesting that parental absence cannot be compensated for by remittance flows.

6.2 Policy Implications and the Current State-of-Play

While this thesis did not directly evaluate the influence of policy on economic outcomes, it has a number of relevant policy implications.

From a policy perspective, the implications of the second chapter are similar to those of previous theoretical studies. Any policies, whether unilateral, bilateral, or multilateral, that facilitate legal migration between countries will reduce the amount that potential migrants will be prepared to pay for illegal border crossings, and hence reduce trafficking (see also Wheaton *et al.*, 2010). Unfortunately, recent developments along these lines, such as the H-1B visas in the United States, and the 457 temporary visas in Australia, are aimed at skilled migrants, who can more readily afford to pay migration costs up front and so do not need to resort to migrant-debt contracts and illegal payments (Friebel and Guriev, 2006). Coverage of unskilled migrants needs to be considered in this regard. However, the concerns of Tamura (2010) and Omar Mahmoud and Trebesch (2010) that illegal migration flows are positively related to legal migration flows, suggest that less-restrictive migration policies in destination countries may not offer a realistic solution to this problem. Nevertheless, Omar Mahmoud and Trebesch (2010) argue that knowledge of this pattern at least allows for other anti-trafficking policies to be targeted on the regions more prone to human trafficking. More intense border control, and increases in post-arrival apprehension rates, which result in trafficking being less profitable (as they drive up the trafficker's costs, C), will result in high up-front and deferred prices, and hence reduce trafficking (see also Tamura, [2010], Wheaton *et al.*, [2010]), though this could also result in a higher incidence of migration-debt contracts within a given stock of illegal migrants (Friebel and Guriev, 2006).

In the third chapter it was found that the trafficking environment is characterised by many so-called "two-edged swords". For example, the provision of a job offer during the initial recruitment stage provides the migrant security, but increases the likelihood of exploitation via payments beyond the initial contracted price. Enhancing the potential migrant's wealth makes the migrant better off, but also increases the probability of the migration process containing above-contract payments. This raises concerns about the way that the authorities can effectively reduce human trafficking.

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Policy makers in Bangladesh appear to be content with a bureaucratic approach to human trafficking, with a focus on criminalising the issues. In 1995 the Bangladesh Government passed a law stating that any person convicted of trafficking women and girls from Bangladesh would either be hanged or sentenced to life imprisonment. This appears firm and decisive. But, most of the policy deliberations on human trafficking appear drawn out and indecisive. For example, following the Third Beijing Biennial Ministerial Meeting at Male, Maldives in 2000, the Bangladesh Government contemplated the setting up of a cross-ministerial Anti-trafficking Cell to coordinate actions in different areas of anti-trafficking, such as prevention, prosecution, and protection (UNIFEM, 2000). To date, however, there has been little progress on this important initiative. Bangladesh is a member of the South Asian Association for Regional Cooperation (SAARC). SAARC provided for its member states the SAARC Convention on Preventing and Combating Trafficking in Women and Children for Prostitution, which takes a comprehensive approach to the problem of trafficking. But SAARC lacks the authority to enforce action. Instead, SAARC merely provides a forum for member states to work together, thus leaving the enforcement to political pressure from other member states (Willman, 2009).

As a broader level, a number of bilateral and multilateral donors, such as the United States Agency for International Development (USAID), International Labour Organisation (ILO), United Nations Children's Emergency Fund (UNICEF), Norwegian Agency for Development Cooperation (NORAD), Asia Foundation, Red Bernet, Denmark and International Organisation for Migration (IOM) and the United Nations Development Fund for Women (UNIFEM), have shown their concerns about the increasing problem of human trafficking in Bangladesh and are taking initiatives and projects to address this issue. The USAID's Anti-trafficking project in Bangladesh is dealing with appropriate targeted research, strengthening of Bangladesh's anti-trafficking networks, supporting NGO/CBO capacity building, prosecution and protection (rehabilitation) and targeted anti-trafficking prevention efforts (USAID, 2000). Ruhi (2003) argued that as the issue of human trafficking has international and regional dimensions, integrated and rigorous efforts to combat the problem are needed on the part of the Government, the international agencies, the donor community and the NGOs.

At an even broader level, many civil societies in Bangladesh are campaigning vigorously against illegal and systematic human trafficking. Paul and Hasnat (2003)

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note that that many victimised families in Bangladesh have reported the names of traffickers or their agents to the local police but, unfortunately, the police have often been reluctant to arrest traffickers and to prosecute them. According to Paul and *Hasnat* (2003), “Police reports are subject to bribery, so they contain little or weak evidence against traffickers. Another obvious reason for weak prosecution is the reciprocal links between traffickers and law-enforcement authorities. Influential politicians may be involved in this trade”.

The contrast between the low intensity of government action⁴⁴ and the high level of public concern can perhaps be understood in the context of the geographic concentration of Bangladeshi migrants in Islamic countries, and remittances. Up to 1996, some 1,767,917 Bangladeshi migrant workers (74.3 per cent of the total migration from Bangladesh) were working in the Middle East and 256,308 (10.8 percent of the total migration from Bangladesh) were working in East Asia. A further 267,600 Bangladeshis were working in Malaysia. The remittance flows reflect this concentration. Thus, in FY2009, the net remittance inflow was US\$9689.26 million, of which US\$6380.4 million was sent by migrants working in Middle East. The remittance inflow from Malaysia was US\$282.22 million in FY 2009 (Economic Trend, 2011). Remittance transfers are approximately four times higher than the net flow of aid to Bangladesh and more than nine times higher than foreign direct investment (Abrar, 2008). Illegal migrants will be important contributors to this remittance flow. Given such economic dependency, the government of Bangladesh will face great financial difficulty confronting the issue of human trafficking. Thus, it is apparent that at present the policy initiatives aimed at human trafficking in Bangladesh do not impact on the variables that the economic model and empirical testing in this paper suggests are closely linked to this phenomenon. These need further consideration.

In the fourth chapter, it was found that the likelihood of remittances for obligatory motives are higher than the voluntary motives and temporary migrants remit more to their parents, siblings, children, or spouse than the permanent migrants. This findings support the existing policy implication that migration policies that encourage temporary migration are likely to lead to higher remittance

⁴⁴ Bangladesh can reasonably be described as being in an official state of denial that any Bangladeshi citizen is staying illegally in any foreign country, and, as such, so far no initiatives have been undertaken by the government to return illegal Bangladeshi migrants or those smuggled or trafficked into other countries.

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flows than migration policies that encourage permanent settlement (Dustmann and Mestres, 2010). Policy makers' attention might be drawn to reducing the differences in sending remittances between the permanent migrants and temporary migrants in their observable attributes.

From our empirical findings it was evident that skilled migrants living in the UK remit less though earning more than their unskilled or semiskilled Malaysian counterparts. Thus there is scope for policy intervention on the part of governments in Bangladesh to stimulate the inflow of remittances by the permanent and skilled migrants in particular for asset accumulation and investment in development project of their home country. This can be assured only when migrants will be willing to risk their capital in an investment in the country of origin economy when much safer investment climate exists.

In the last chapter, the results from the analysis showed unambiguously a 'double-edged sword' for both the migrant and the households of origin. For the migrant, having gained access to higher income abroad, sending more remittances at home makes the migrant happier on the one hand, leaving the families in particular spouse and children back home make them rather unhappy at abroad on the other hand. While receiving remittances improve the households of origin's socio-economic status and thereby increases the level of well-being. On the other hand, due to the absence of the emigrant who may have been contributing to the household via market or home production, household and monetary responsibilities need to be assumed by other family members. This reallocation of household responsibilities and market work is likely to be costly for the remaining family members, reducing happiness levels (Borraz et al., 2010).

The findings of the last chapter may have several policy implications. First, migration policies for the host country should allow the legal temporary migrants to accompany their spouse and children particularly in the case of Malaysia. Second, the well-being of migrants can be enhanced by facilitating remittances. Third, as perceived discrimination hinders immigrants' socioeconomic achievement in labour markets, and depress their happiness level, policies by the host country should be focused on equal opportunity for both the migrants and the natives. Thus, a clear understanding of the factors affecting life satisfaction can serve as an effective tool in the hands of organizations and institutions dealing with immigration and integration (Amit, 2010). Finally, for the households of origin, proper utilisation of

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remittances may have scope for origin family to advance socially, economically and personally which may open a window for the migrant to return to the family members and thereby, bring both economic success and family reintegration.

6.3 Future Research

This section introduces a range of potential extensions to the work presented in this thesis.

It would be interesting to test the model outlined in the second chapter on data that covers both legal and illegal migrants. This will enable the data to be aligned with the selection process inherent in the model. Such data would permit a focus on variations in p_1 , the payment of p_2 (that is, on the use of migration-debt contracts), as well as allow for examination of β , with appropriate accommodation of the selection process into this category of migrants (that is, illegal migrants who pay a bribe). Unfortunately, such a data set does not appear to exist at present, though it is argued above that the data could be collected from migrant communities in host countries known to have significant illegal populations. The respondent-driven sampling technique outlined in Zhang (2012) would be an appropriate method to employ in such data collections.

In the third chapter, the policy initiatives aimed at human trafficking in Bangladesh at the present time, which treat trafficking as a criminal offence similar to murder, do not affect the variables that the empirical testing in this chapter suggests are closely linked to this phenomenon. These need further consideration, through, for example, making it less profitable to engage in human trafficking and to be trafficked. In this regard, the results in this chapter show that data that will support empirical investigation into human trafficking can be collected. Future data collection can draw upon the questionnaire used in the current study. This could be augmented with further questions relating to the period following the return to the origin country. This will provide a basis for a better evaluation of the lifetime benefit or loss of the trafficking experience. It could also focus on intentions for further illegal migrations. Additionally, future data collection should seek to ascertain the circumstances under which traffickers provide various services, such as training for the illegal passage and job offers. Such data collection will help understand the motivations and effects of the growing phenomenon of human trafficking.

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In the fourth chapter, a matched sample of Bangladeshi migrant households living in the UK and Malaysia and their origin families living in Bangladesh was used to analyse the motives to remit. The survey design does not allow one to control for the selectivity of the migration decision. Future research could follow an alternative survey design that would involve selecting a random sample of origin family respondents and then tracking family migrants. This would provide a better picture of the motives to remit, utilization of remittances and the selectivity of migration decision. This would be very costly and difficult to implement within the context of international migration, yet possible to implement by the source country in collaboration with the host nation. This would not only provide more balanced information but also resolve the current small sample size issue. Now it would be possible to use more sophisticated econometric models which are likely to provide more reliable statistical estimates of the drivers of the flow, motives, and movement of remittances.

In the final chapter, a major implication of the results is that the measurement of economic welfare of migration should consider both conventional economic analysis and also subjective considerations such as the status utility of migrants. A caveat to these overall findings is that it is possible that happy migrants simply tend to remit more. A simultaneous empirical model to examine the impacts of happiness on remitting behaviour and remitting behaviour on happiness is beyond the scope of the current chapter, and certainly a topic for further research.

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Four journal articles were included in the original thesis as appendices. They have been removed from this version due to copyright restrictions.

Details of the journal articles are listed below:

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