The Family Formation Dynamics of Indian Migrant Families: Continuity or Change

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Abstract

This research combines three studies analyzing son preference, educational assortative mating patterns, and intergenerational co-residence patterns among Indian immigrant families in the United States of America, United Kingdom, Canada, and Spain, using IPUMS datasets and United Kingdom labor force data (UKLFS). The results of Study 1 suggest that lower educational attainment is associated with a stronger tendency to favor sons among the Indian immigrant groups studied in the USA, Canada, and Spain. The findings of Study 2 indicate that Indian male immigrants in the USA and Canada tend to marry hypogamously, use their "immigration status" to attract more educated female partners from their home country, while this is not the case in Spain. Finally, the results of Study 3 suggest that in all four countries (USA, Canada, UK and India); age, education level and occupation significantly impact patrilocal residence. The findings provide insight into some of the key patriarchal cultural norms and practices of the Indian population both in India and abroad, and highlight the importance of education and economic autonomy in promoting gender equity and empowerment among immigrant populations.

Keywords: Indian immigrants, son preference, educational assortative mating, post-marital co-residency patterns, patrilocal residence, matrilocal residence, cultural norms, gender roles.

"The total relationship of exchange which constitutes marriage is not established between a man and a woman. . . but between two groups of men, and the woman figures only as one of the objects in the exchange, not as one of the partners. . . This remains true even when the girl's feelings are taken into consideration, as, moreover, is usually the case. In acquiescing to the proposed union, she precipitates or allows the exchange to take place; she cannot alter its nature" **Claude Lévi Strauss, (1969)**

"*For nearly four thousand years women have shaped their lives and acted under the umbrella of patriarchy, specifically a form of patriarchy best described as paternalistic dominance. The term describes the relationship of a dominant group, considered superior, to a subordinate group, considered inferior, in which the dominance is mitigated by mutual obligations and reciprocal rights"* **Gerda Lerner, (1986).**

Introduction

Gender[1] norms are social principles and stereotypes about generalized expectations, attributes and roles associated to men and women. These norms are often shaped by patriarchal structures, which are deep-rooted social systems in which men hold primary power in society and family, while women are subordinated to them (Kabeer, 1999). Claude Lévi-Strauss, a French anthropologist, argued that female subordination has been reinforced by treating or exchanging women as objects or commodities, which has historically taken many forms, such as bride stealing, ritual defloration, and negotiated marriages. Gerda Lerner argues in her book "The Creation of Patriarchy" (1986) that gender norms play a critical role in establishing and maintaining power relationships between men and women, and are integral to the construction and maintenance of

[1] It is important to understand the difference between gender and sex because they are distinct concepts as well as the social constructs that create gender norms and perpetuate gender inequality. Gender is a socially constructed characteristic, behaviour, expression, and identity perceived by others (UN Women, 2015; National Institutes of Health, 2019). On the other hand, sex refers to physiological and biological differences, such as hormones, chromosomes, and reproductive organs (UN Women, 2015; National Institutes of Health, 2019). These differences form gender norms, which are the result of socialization and stereotyping and vary from society to society and over time.

patriarchal systems, which are passed down from generation to generation. In these systems, men are expected to be brave, strong, dominant, protective, independent, and competitive, while women are supposed to be caring, nurturing, obedient, dependent, and loving (Lerner, 1986). From a young age, boys are taught to be tough and protective while girls are taught to be submissive. Further, while men are expected to be the primary breadwinners of the family, women are expected to stay home and take care of the elderly and children. Additionally, women are financially dependent on their fathers (before marriage) and on their husbands and their families (post marriage). These factors are related to inequalities in terms of access to education, health care, and employment opportunities and lead to many other negative outcomes (Kabeer, 2005) such as domestic violence (Carson and Gerace, 2016; Walby and Allen, 2004), intimate partner violence (Walby and Towers, 2008; Cates, 2018), underrepresentation of women in political institutions (Elder, 2004; Sawer, 2000), parliaments, offices, and organizations, over-representation of women in low paying jobs (Tucker and Patrick, 2017), gender-based discrimination at work, gender pay gap (Blau, and Kahn, 2017; Goldin, 2014; Bertrand and Hallock, 2001) and motherhood penalty (Kahn, Garcia-Manglon and Bianchi, 2014; Budig and Hodges, 2010).

Although gender-based inequalities exist across all societies, they might not manifest in the same manner or have the same impact across cultures and countries (Kabeer, 2005). In her article, Kabeer argues that women globally have traditionally been excluded from formal economic opportunities, such as waged work, due to gender norms and stereotypes that position them as primarily responsible for caregiving and household work. However, Kabeer also notes that gender-based inequalities may vary across different cultural contexts. For example, in some societies, women's exclusion from economic opportunities may be compounded by restrictions on their mobility or participation in

public life, while in others, women may face discrimination and violence in accessing education or healthcare. Additionally, Kabeer emphasizes that gender-based violence and harassment can take different forms depending on the cultural context[2].

In specific cultures and contexts, such as India, Pakistan, Bangladesh, and Nepal, gender inequalities can lead to problems such as female foeticide, infanticide (Saravanan, 2002; Tandon and Sharma, 2006; Shah, Gyawali and Aro, 2018), malnourishment of females, son preference (Sen, 1990; Das Gupta, 2009; and Das Gupta and Zhenghua, 2002), dowry (Rastogi and Therly, 2006; Kumar, 2021), honor killing (Santhi et al., 2014; Hosseini, 2015; National Crime Records Bureau, 2019), unequal access to education (Kabeer, 2005), and patrilocal residence (Khalil and Mookerjee, 2019; Landmann, Setz and Steiner, 2017), among others.

While women are at the receiving end of gender-based inequalities, patriarchal systems also harm men in many ways. Managing the expectations of being providers and protectors is linked to increased stress and anxiety among men, leading to higher incidence rates of suicides and heart attacks (Mahalik, Good, and Englar-Carlson, 2003; Wong, Ho, Wang, and Miller, 2017; and Wong, Pituc, and Lee, 2018).

Traditional patriarchal gender norms and inequalities can shape how migration impacts gender dynamics (Kofman, 2004; Palmary, Burman, Chantler and Kiguwa, 2010; Hagan, 1998). In some cultures, gender norms may be deeply ingrained, and migrants may bring these norms with them to their new location. For instance, migration can exacerbate

[2] The 2021 Global Gender Gap Report by the World Economic Forum provides rankings of countries in terms of gender equality. Countries from the West generally score higher on gender equality indices. For example, Iceland, Finland, Norway, and Sweden scored the highest in gender equality, while Yemen, Iraq, and Pakistan were ranked at the bottom. The United States was ranked 30th, the United Kingdom 36th, Canada 16th, and Spain 11th. India, on the other hand, was ranked at 140th out of 156 countries. These rankings demonstrate that gender inequalities are not universal but rather a product of varying cultural and institutional factors.

gender inequalities by leaving women with additional caregiving and household responsibilities, perpetuating traditional gender roles (Kofman, 2004). However, migration can also provide opportunities for women to challenge traditional gender norms by accessing new economic and social opportunities, leading to a renegotiation of gender roles (Kofman, 2004; Kofman and Raghuram, 2015; Parrenas, 2001).

Human migration has been a well-documented phenomenon throughout history. The reasons why humans migrate can be complex and multifaceted, with various factors such as economic, social, political, environmental, and educational factors all playing a role (Massey et al., 1993; Borjas, 1989; Abel, 2010; Mazzucato and Schans, 2011; Black, 2001; Zetter, 2007; Piguet, 2010; McLeman and Hunter, 2010). This process of migration can have both positive and negative impacts on immigrants.

While immigration provides economic and educational opportunities and cultural enrichment, immigrants may also face discrimination, marginalization, language barriers, and cultural adjustment challenges (Yoshikawa, 2011). Previous research has shown that many immigrant women report adapting to the new culture and embracing more egalitarian attitudes and practices, while others struggle to reconcile their traditional cultural norms with the new cultural norms they find in the destination country (Yakushko, Morgan-Consoli, 2014; Rumbaut, 1994). Similarly, research on Chinese and Lebanese Muslim and Christian immigrant families found that while some maintained aspects of their traditional culture, they also adapted to new cultural norms they found in the United States (Zhou and Bankston 1998).

Bagchi, J and Dasgupta, S. (2008) examined the impact of migration on gender norms and values in India. They specifically focused on the migration of women from rural to urban areas of India and found that migration leads to changes in gender roles and norms as women

have more economic opportunities and access to education. Another study by Pessin and Arpino (2018) focused on the gender attitudes of immigrants and found similar results that migration leads to changes in gender roles and norms as migrants adapt to the new cultural norms of the host country. However, Dion and Dion (2002) found in their research that immigrants face challenges in adapting to new cultural norms and often make special efforts to maintain their traditional gender norms and practices. Therefore, a gender-sensitive approach should be used to understand immigrants. Similarly, in her article on gender equality and women's empowerment, Kabeer (2005) emphasizes that gender norms and cultural practices are entrenched and do not necessarily change with migration from one culture to another.

Previous research suggests that the impact of migration on immigrants' gender norms and cultural practices can be contradictory, with some adopting new norms and practices while others retaining their traditional ones (Yakushko, Morgan-Consoli, 2014; Rumbaut, 1994; Zhou and Bankston 1998; Bagchi, J and Dasgupta, S. 2008; Arpino 2018; Dion and Dion 2002; Kabeer 2005). Thus, further studies of immigrant gender norms and cultural practices are needed to better understand whether they change or remain unchanged. In addition, it should be noted that gender inequalities may vary depending on the specific cultural context of the immigrants' home and host countries. Therefore, a comparative intergenerational approach can be useful in examining how gender inequalities are shaped by both the global and specific cultural context of human migration, as it allows for the identification of similarities and differences in the experiences of different migrant groups and their descendants in different countries.

In this dissertation, I aim to investigate similar phenomena among Indian immigrants in Western destination countries such as the USA, UK, Canada, and Spain. Indians were selected as the focus of this dissertation due to India's patriarchal social system and its

cultural and contextual practices mentioned in previous research (Patil, 2021; Sivakumar and Manimekalai, 2021; Pandian, 2020; Desai, and Andrist, 2010). India's diverse population of 1.3 billion people also makes it possible to find an Indian diaspora throughout the world. For instance, according to 2019 immigration statistics 4,402,362 Indian immigrants were registered in the United States, representing 1.3% of the total population. In the United Kingdom, there are 862,000 Indian immigrants, accounting for 1.3% of the total population, according to the 2020 UK national statistics. In Canada, there are 1,374,710 Indian immigrants, accounting for 3.9% of the total population, (National Statistics of Canada 2021). In Spain, there are 38,300 Indian immigrants, representing 0.08% of the total population, according to the National Institute of Statistics (INE) in 2020. In addition, according to the United Nations, India has the largest number of natives living abroad in 2020, with 17.9 million people. The high prevalence of Indians in Western countries provides an excellent opportunity to examine cultural and gender norms among Indian immigrants in their host countries, with the Indian diaspora the largest number of any country in the world.

Specifically, I will examine the cultural practices and gender roles that Indian immigrants' practice in terms of son preference, educational assortative mating, and patrilocal residency, as these practices are prevalent in India but do not necessarily exist in the host countries. This context provides an excellent opportunity to study Indian immigrants and explore which cultural norms and practices they adopt in their destination countries. Historically, patrilocality and son preference have been linked with women's subordinate role in society leading to preference for sons and discrimination against daughters (Goli, Arora, and Jain, 2022). This discrimination often leads to hypergamous unions, which in turn are linked to gender inequality and the subordination of women in Indian society.

Therefore, understanding these cultural practices and norms is crucial for examining gender dynamics in both origin and destination countries of Indian immigrants.

Previous research has described India as a country with a fixed patriarchal system that perpetuates gender inequality in various aspects of women's lives, such as education, employment, marriage, and family dynamics. This has led to son preference, female foeticide, female infanticide, dowry, honor killing, and patrilocal residence, as documented in studies by Saravanan, 2002; Tandon and Sharma, 2006; Shah, Gyawali and Aro, 2018; Sen, 1990; Das Gupta, 2009; and Das Gupta and Zhenghua, 2002; Rastogi and Therly, 2006; Kumar, 2021; Santhi et al., 2014; Hosseini, 2015; National Crime Records Bureau, 2019; Kabeer, 2005; Khalil and Mookerjee, 2019; Landmann, Setz and Steiner, 2017, among others.

While India has made progress in gender equality in modern times, it is difficult to eliminate traditional gender roles that are deeply rooted in Indian society, as noted by Kabeer (2005). According to the Pew Research Centre's 2022 report[3] on Indian attitudes toward gender roles, an interesting and complex picture of social and cultural norms in Indian society emerges. Although many respondents expressed support for gender equality, the report shows that traditional patriarchal beliefs and gender dynamics still persist among Indians. On the one hand, the report suggests that Indians are increasingly recognising the importance of gender equality, which can be seen as a positive development toward a more

[3] According to the Pew Research Centre's 2022 report, although Indians claim that both women and men can be equally effective political leaders, men still take on more prominent and powerful roles in household gender roles compared to women. The survey found that 64% of Indians completely agree and 24% mostly agree that wives should obey their husbands. Despite expressing egalitarian views, patriarchy still persists in India, as 43% of Indians believe that men are obligated to earn and bring money home, and 34% believe that taking care of children is solely a woman's responsibility. The survey also found that 34% of respondents believe that sons should have greater rights than daughters, and 39% believe that sons are responsible for caring for their aging parents, while 63% believe that sons should primarily perform their parents' last rites, not daughters.
While Indians express strong support for equal rights for women (72%) in global public opinion, they tend to be more conservative when it comes to family dynamics, gender roles, and the economy. For example, 55% of Indians believe that men should have more job opportunities than women during times of scarcity, and 40% of respondents believe that traditional gender roles in marriage are more satisfying.

progressive and inclusive society. On the other hand, the persistence of traditional patriarchal beliefs and gender dynamics indicates that change is slow and not uniform across all segments of society.

To achieve gender equality and eradicate these embedded traditional roles, it is important to promote equal access to education and improve the country's literacy rate. According to the 2011 Indian Census, the overall literacy rate was 74.04%, with a significant difference between male and female literacy rates. However, in recent years, there has been a significant increase in the female literacy rate, especially in urban areas. This progress can be attributed to various factors, including government policies to promote girls' education, increasing economic opportunities for women, and changing attitudes toward gender roles and the value of education for girls. This shift toward greater educational opportunities for women is an important step toward achieving gender equality in India (Desai et al., 2010; Indian Ministry of Education, 2021). Despite this progress, gender disparities in education still exist in India, including bias in the workplace, which can limit women's career opportunities and earning potential, as well as the practice of patrilocality (Jayachandran, 2015). Previous research also suggests a positive correlation between educational hypergamy and patrilocality (Roychowdhury, 2021). In societies where patrilocality is prevalent, men are more likely to marry women from their own community or caste, which often results in educational hypergamy. Additionally, women in patrilocal households may have limited access to the labor market despite their education.

In this dissertation, a comparative intergenerational approach is applied to study Indian immigrants and second-generation Indians in Western countries. The main aim is to investigate whether Indians living abroad first and second generation exhibit the same cultural and gender norms as those prevalent in India. To achieve this, I have selected four popular destination countries for Indian immigrants: the USA, Canada, Spain, and the UK.

These countries were chosen because they are among the most popular destination countries for Indian immigrants and represent both English-speaking and non-English-speaking countries. Spain is a relatively new destination country for Indian immigrants, but the trend of Indian immigration to Spain is increasing, making it an excellent case study for comparing Indian immigrants in non-English speaking country. The USA, UK, and Canada are among the largest Indian populations in the world, making them important places to study Indian cultural and gender norms, as well as co-residence patterns, among Indian immigrants in these host countries. Furthermore, Indian immigrants in these four countries have different background and different experiences of assimilation in their host countries. By studying Indian immigrants, we can gain a better understanding of how cultural and gender norms play out in different contexts.

Moreover, the sex ratio in the US, Canada, and Spain is relatively balanced and not skewed as we observe in India, and the phenomenon of son preference does not exist in the native populations (Almond, Edlund, and Milligan, 2013; Duan and Hicks, 2020). Additionally, previous research has shown that hypergamous unions are not common in Western countries; instead, patterns of homogamous or hypogamous unions have been observed and traditional hypergamy has declined (Blossfeld and Timm 2003; Blossfeld 2009; Buss et al. 2001; Skopek, Schulz, and Blossfeld 2011; Schwartz 2013; Klesment and Van Bavel 2015; Esteve and Cortina 2006; Charles and Luoh 2003; Hou and Myles 2008; Esteve, García-Román, and Permanyer 2012). Similarly, previous studies of post marriage co-residence patterns in Western countries show that people generally live in a neolocal setting, while immigrants from South and East Asia generally live with their families and have provided various reasons for this type of cohabitation (Hannemann and Kulu, 2015). Finally, it should be noted that the practices and cultural norms examined in this dissertation do not exist in the targeted destination countries and provide a useful comparison.

This dissertation examines how traditional cultural practices and norms among Indian immigrants may be adapted or modified in response to new cultural and social contexts that act as moderating factors. Migration to a new culture may play a significant role in this process. The dissertation is divided into three chapters, each analyzing different consequences of traditional cultural norms among Indian immigrants in Western countries: son preference, educational assortative mating patterns, and co-residence patterns.

The first chapter presents the sex ratio of children (ages 0 to 15) of Indian immigrants in three host countries: the USA (2015), Canada (2011), and Spain (2011). Using census microdata from IPUMS International, I examine how education and endogamy influence son preference in each country. This chapter highlights differences in son preference among Indian immigrants in different countries and examines the role of education. Descriptive and logistic regression analyses are used to analyse the data.

In the second chapter, I compare the educational assortative mating patterns of Indian immigrants with natives of each host country, and with Indians in India using IPUMS International census microdata from the U.S. (2015), Canada (2011), Spain (2011), and India (2009). In this study India (2009) is used as a control group. In addition, I use the comparative approach to examine whether or not Indian men in receiving countries use their immigration status as leverage to get more educated female partners from their home country compared to them. The data are analyzed using descriptive and log-linear analyzes.

In the third chapter, I examine the impact of demographic variables on post-marital co-residency patterns in the Indian population, both in India and abroad. To do so, I use microdata from IPUMS-International from three countries: the United States (2015), Canada (2011), and India (2009), as well as labor force data from the United Kingdom (UKLFS) from 2008 to 2012. India (2009) is also used as a control group in this study. The objective

of this study is to examine the impact of demographic variables on post-marital co-residency patterns in the Indian population, both in India and abroad. The sample comprises of Indians residing in India, Indian immigrants, and ethnic Indians in the destination countries. The comparative approach employed aims to identify patrilocal co-residence patterns in India and to determine whether Indian immigrants abroad maintain their cultural norms or co-residence patterns. The study also seeks to observe patterns among second-generation Indians abroad. The data will be analyzed using descriptive and logistic regression analysis.

The persistence of traditional practices and norms among Indians living abroad can have a negative impact on gender equality. These practices can perpetuate unequal treatment and opportunities for women, making it critical to address them in order to create a more inclusive society. Son preference and patrilocal residence are part of a larger pattern of cultural practices that reinforce patriarchal power structures, and challenging and changing these practices is essential to achieving gender equality and social justice (Lerner, 1986). Specifically, son preference can lead to gender imbalance and discrimination against daughters, while educational assortative mating can reinforce educational and socio-economic disparities within the community. Additionally, the practice of patrilocal residence can impact family dynamics and limit women's social ability. By examining these aspects, I hope to gain a deeper understanding of whether or not cultural norms persist among Indian immigrants. This research will allow me to examine how these norms manifest and are negotiated in different cultural contexts. By shedding light on these issues, I hope to contribute to the broader discussion of cultural practices and their intersections with gender inequality, ultimately promoting a more inclusive and equitable society. This dissertation will provide a more nuanced understanding of how cultural norms are transmitted across generations and how they may be modified in response to changing social and cultural contexts, with consideration of moderating factors. The results of this dissertation can make

an important contribution to the scholarly and policy debate on immigrant integration in Western societies.

First chapter:

Sex Ratios among Children of Indian Migrants in the USA, Canada and Spain

Abstract

Son preference is a systematic bias in favor of male children, resulting in a skewed sex ratio at birth. Although son preference has been studied widely in India, it is still unclear how the migration of Indian immigrants from patriarchal to relatively egalitarian societies affects the pronounced son preference. Using census microdata from IPUMS international, this chapter examines the sex ratio among children (0 to 15 years) of Indian immigrants in three countries: the USA 2015, Canada 2011, and Spain 2011. A logistic regression analysis controlling for place of birth, parental education, age, and spouse origin shows that son preference is highest among Indian immigrants in Spain. A similar trend is observed in the USA and Canada only when fathers are married to Indian mothers. The overall results show that Indian immigrants in these countries tend to have a balanced sex ratio when they are high educated and show evidence of son preference when they are low educated. The sex ratio in Spain is 1.17 times that of the USA and 1.12 times that of Canada. These differences between Spain and the other two countries are due to differences in the parental educational attainment.

Keywords: Sex ratio, Son preference, Indian immigrants, Parental education, Parental endogamy.

1.1 Introduction

*"I think **gender inequality** is not the natural human condition. But the idea that somehow women have to be in an inferior position – or not quite such dominant position – is really wholly artificial for me"* **Amartya Sen**

Son preference is a systematic positive bias in favour of male children, that is highly prevalent in certain societies/countries, mainly in Asia (India, China, and South Korea). India and China accounts for about 40% of the world's population and about 70% of the Asian population. Underlying son preference, there is a belief that sons/males are superior to daughters/females. Consequently, while on the one hand son preference leads to a favourable treatment of the male children, on the other hand it also manifests as various discriminatory practices against female children (Clark, 2000), for example, unequal access to education (Bose, 2012), nutrition and health care (Clark, 2000 Mitra, 2014), property rights and dowry (Singh, 2013; Parmar, 2014). Love for a male child also leads to sex-selective abortions and consequently skewed sex ratio at birth (Clark, 2000; Kana Fuse, 2008). In most countries, the normal sex ratio at birth may range from 102-106 males per 100 females due to biological differences between females and males. According to the 2011 census, the general sex ratio at birth in India is 1.08, but it ranges from 1.19 to 1.03 in different states of India.

In this chapter, we focus on sex ratios as the key outcome variable and compare Indian immigrants in three high-income countries (the USA (2015), Canada (2011) and Spain (2011)). These three countries are Western societies with normal sex ratios. We aim to explore whether the immigrants' sex ratios vary as compared to their parent population and whether it differs across the three host countries. To make the comparison, we also focus on the influence of parental education, place of birth, age, and endogamy status

(defined as the origin of spouses). The immigration context presents an interesting juxtaposition of different sets of cultural values related to gender equality (including son preference), thereby providing a fertile ground for research.

This chapter makes three key contributions. First, it presents a comparative analysis of sex ratios among children of Indian immigrants from India (a country with high son preference), living in three Western host countries; Spain, USA and Canada (countries with no son preference). Second, it includes Spain as a host country in the analysis. Spain is a new country for Indian immigrants that has attracted low-skilled immigrants from India (Cortina, Esteve and Jimènez, 2008; Garha, 2020). To the best of our knowledge, very few studies have focused on sex ratios among children of Indian immigrants outside the traditional or more popular destination countries for Indian diaspora, such as the USA and Canada (Hank and Kohler, 2000; Almond, Edlund and Milligan, 2013; Ray, Henry, and Uruquia, 2012). It is interesting to examine this phenomenon in relatively recent destinations such as Spain, which are culturally and linguistically different from both the parent country and other destination/host countries. Third, parental education and endogamy are considered as explanatory variables. To our knowledge, no previous study has examined these variables before.

1.2 Background

1.2.1 Son Preference in USA, Canada, Spain and India

Son preference refers to negative attitudes toward female children and higher desirability for male children (Clark, 2000). Previous research has documented that son preference is an outcome of patriarchy (Tracy, 2007), a social system in which the father (or other male family member) is the leader of the household and this leadership role is descended through the male line (Hunnicut, 2009; Tracy, 2007). In this system, women are

seen as inferior to men and are expected to abide by men's decisions, with deviation often punished with violent and abusive behavior (Hunnicut, 2009). This also signifies that women are expected to bear male children and they do not get respect in husband's family until or unless they give birth to a son (Shah, 2005). Additionally, women get lesser representation in the workforce and lesser wages. Further, they must leave their parental house and move into their partner's house, often ending up taking care of the household chores and living a subservient existence as compared to their male counterparts (Bhat and Zavier, 2003). Love for a male child also leads to sex-selective abortions and consequently skewed sex ratios at birth (Clark, 2000; Kana Fuse, 2008). Sex ratios at birth is one of the most commonly used measures of "son preference" in the previous literature and based on this, we have also focussed on sex ratios in this chapter which is a global indicator of son preference (Das Gupta, 1987; Bhat and Zavier, 2003; Gaudin, 2011; Vanneman, Desai and Vikram, 2012; Aparna Mitra, 2014; Seema Devi, 2016).

Previous research shows that females have a higher survival rate at birth as compared to males as the female fetus is supposedly more resilient than the male fetus (Sen, 1990). Yet, there are fewer females compared to males worldwide (Sen, 1990). This clearly shows a gender bias, a phenomenon that first studied and brought to the attention of the world by Amartya Sen (1990). He expressed it with the term "missing women" and claimed that more than a hundred million women are missing worldwide due to female feticide and infanticide. This skew was notable or concentrated in Middle East, North Africa, South Asia and East Asia (Pande and Astone, 2007) and has been observed in many countries such as India, China, South Korea, Vietnam, Nepal, and Bangladesh (Das Gupta and Mari Bhat 1997; Guilmoto 2012; 2015; Dyson, 2012). According to Datt et. al., 2000, India (7.7%) and China (5.3%) have the highest percentage of missing girls. Son preference also leads to psychological, social, and familial pressure on women to bear male

children, and they are often blamed if they are unsuccessful in fulfilling this obligation/duty. This increases fertility rates and places a significant reproductive burden on women, as in many cases, they are expected to continue having children until the family has the desired number of male children. The female children produced under these circumstances are discriminated against from a very early age and feel "unwanted", eventually falling into the same vicious cycle experienced by their mothers (Clark, 2000; Bhat and Zavier, 2003; Pande and Astone, 2007; Das Gupta, Chung and Shuzhuo, 2009; Kana Fuse, 2010).

In this chapter, we will specifically examine the sex ratios among children (0 to 15 years) of Indian immigrants in three countries: Spain, the USA, and Canada. Sex ratio has been used as a proxy for "son preference" in previous studies (Das Gupta, 1987; Bhat and Zavier, 2003; Gaudin, 2011; Vanneman, Desai and Vikram, 2012; Aparna Mitra, 2014; Seema Devi, 2016). Sex ratio is defined as the ratio of "number of males" to "number of females" in a given population, and is generally expressed as the number of males per 100 females. For most countries, the normal sex ratio at birth can range from 102-106 males per 100 females. According to the World Bank data, the sex ratio at birth in Western countries such as Canada (1.054), the USA (1.048), and Spain (1.064) was normal/balanced in 2011 and remained the same in 2019 (1.054, 1.047 and 1.064 respectively). However, the sex ratio at birth in India was skewed in 2011 (1.099) and remained the same in 2020 (1.10) (World Bank data). According to the 2011 Indian Census, the overall sex ratio in India in the age group 0 to 6 years was 1.09. This ratio is significantly skewed in certain Indian states like Punjab and Haryana (1.18 and 1.20 respectively), while in certain Indian states like Meghalaya, Mizoram and Kerala (1.03, 1.03 and 1.04 respectively) it is very balanced as in Western countries.

It is clearly evident that the sex ratios in India are more skewed compared to the host countries: Spain, the USA and Canada (Hank and Kohler, 2000; Almond, Edlund, and Milligan 2013; Ray, Henry, and Urquia 2012; Urquia et al. 2016; Duan and Hicks, 2020). According to Hank & Kohler (2000), there is a strong tendency in Western societies to favor a mixed-sex composition. The USA has also shown a significant decline in various indicators of gender inequality or in other words, there has been dramatic progress in the movement toward gender equality (Levine and Mishel, 2020). There is no evidence of son preference among Caucasian population of the United States, however, there is strong evidence of son preference among Indian immigrants (Duan and Hicks, 2020). Similarly, according to Almond, Edlund, and Milligan (2013); Ray, Henry, and Urquia, the sex ratio at birth in Canada's white population is within the normal range, suggesting that sex selection does not exist among them. However, Almond, Edlund, and Milligan (2009) have documented a clear son preference and discrimination against daughters among Asian immigrants in Canada. In contrast to their findings, Tønnessen, Aalandslid, and Skjerpen (2013), find evidence of more balanced sex ratios among children of Indian immigrants in Norway, in fact, there are more female births as compared to males'. In their study, they indicate that the trend has changed among Indian immigrants. Further, the third country of focus in this research, Spain, is one of the societies that believe very strongly in the values of women's rights, equality, justice, and acceptance (Minguez and Martin, 2010). India, on the other hand, represents a very contrasting and conservative culture where the abuse of women's rights and gender inequality is widely observed (Clark, 2000).

In previous studies researchers have used alternative measures besides sex ratio at birth (which is simple to understand, easy to measure and non-intrusive), such as, "Ideal family size and sex composition/attitudes", NFHS-2 (1998-1999), NFHS-3 (2005-2006) and (NHFS-4) (2015-2016) (National Family Health Survey), (Shelley Clark, 2000; Bhat

and Zavier, 2003; Pande and Astone, 2007; Jas Ellis, 2008; Kane Fuse, 2008; Gaudin and College, 2011; Vanneman, Desai and Vikram, 2012), "fertility preference" (Vanneman, Desai and Vikram, 2012), "Fertility behaviour (Vanneman, Desai and Vikram, 2012), "Sex-selective abortions" (Vanneman, Desai and Vikram, 2012), Sex differences in child mortality (Vanneman, Desai and Vikram, 2012) and Vaccination and medical treatment (Gulzar Bin Rehman, 2014).

Most studies on sex ratios have been conducted only at the national level. There is very little research on how migrants from sex-selective countries behave when they migrate to relatively egalitarian countries. Therefore, in this chapter we focus specifically on sex ratios among the children of Indian immigrants living in three Western countries.

1.2.2 Sex ratios among Immigrant children

Although human immigration is not a new phenomenon, it has experienced tremendous growth in recent decades. A large proportion of immigrants move from low/medium income countries to high income countries in search of a better life and opportunities (Dos et al, 2003). According to an estimate by United Nation's (World Migration Report, 2020), there were 272 million immigrants worldwide in 2019 and 60% of these immigrants moved to developed countries (e.g.: Europe, North America, Canada, Australia, and New Zealand). More than 40% of all international migrants worldwide in 2019 (112 million) were Asians, primarily originating from India, China, Bangladesh, Pakistan and Afghanistan (World Migration Report, 2020). India is one of the most densely populated countries in the world, with a population of more than 1.3 billion. Historically, Indian citizens have moved to all parts of the world. In recent decades, the top destinations for Indian immigrants have been Saudi Arabia, Malaysia, UAE, the USA, Canada,

England, Australia and Europe (Pew Research Center, 2017). In 2015, there were 15.6 million Indian-born people living in other countries (Pew Research Center, 2017).

Recently, non-English speaking countries like Spain, have also started receiving immigrants from India and it is a relatively new destination for Indian immigrants. Within Europe, Spain is among the top host countries in terms of immigration. According to the Eurostat report, 2019, there were 5.2 million foreign-born people in Spain, over 11% of the total population. The majority of these immigrants were from Latin American countries, while a small but significant proportion of them were from Asian countries such as Pakistan, India and China. Indian immigration to the USA began in the early 19th century and as of 2019, there are 2.7 million Indian immigrants living in the United States (Migration Policy Institute, 2019). Now Indian immigrants make up about 6 percent of the foreign-born USA population and are the second largest immigrant group in the country (Migration Policy Institute, 2019). On the other hand, Canada is also one of the top destinations for Indian immigrants (Almond, Edlund and Milligan 2009). People of Indian origin are among the largest immigrant groups in the world.

There are more than 20 million Indians living in more than a hundred countries (Center for the studies of the Indian diaspora, 1996) including Spain, where their number is estimated at about 40000 (Instituto Nacional de Estadística de España, 2016) . In this chapter, we compare son preference among Indian immigrants in three countries (the USA, Canada and Spain) to examine whether there are differences among the three groups.

Sex ratios show variation within India and across social groups of the Indian diaspora living abroad. Presumably, we expect that the selective nature of migration might also influence the sex ratios. Therefore, we use education as a proxy for social class and cultural background and there are strong arguments for using education in this chapter.

Moreover, the migration patterns allow us to study additional dimensions: spouse's origin and place of birth. Although most Indian international migrants are married to Indian spouses, there are a few who are married to native spouses and spouses of other origins. Based on the literature on endogamy, we hypothesize that this may be a relevant variable for our research. First, the study of endogamy allows us to examine whether marriage to natives has an impact on the sex ratios of their children. Second, the study of endogamy allows us to examine whether Indian fathers or Indian mothers, when married to non-natives, have different patterns of sex ratios.

Finally, we are able to track place of birth, which allows us to distinguish between children born in India, the so-called 1.5 generation, and children born in the destination country. This distinction may indicate a possible assimilation process. Although we do not have the best data to measure assimilation, significant differences by place of birth could indicate one.

1.2.3 Parental educational attainment and endogamy

Previous research has focused on child order (Admund and Edlund, 2008; 2009; Blau et al 2019), sex ratio at birth (Postulart and Srinivasan, 2018), and paternal vs maternal son preference (Duan and Hicks, 2020) among Indian immigrants, but has not examined the effects of demographic variables such as level of parental education and endogamy on son preference. To fill this gap in the previous literature, we include these variables in this study. According to Chung and Das Gupta, (2007), country's rapid development, increased education and urbanization reduce negative attitudes toward girl children and possibly eliminate parental preference for male children. While some empirical research supports this claim, there is also evidence to the contrary (Yoo, Hayford and Agadjanian, 2017; Kohli, 2018). Yoo, Hayford and Agadjanian (2017), found considerable evidence of declining son preference in South Korea in their study. Their

findings suggested that individual-level changes in urban residence, ideal family size, or both partners' education and employment only partially explain the decline in the association between the sex composition of existing children. However, they also documented evidence that preferential attitude towards sons over daughters still persists among educated middle-class women in Korea. Similarly, Kohli (2018), reported that son preference is considered natural and acceptable among educated middle-class women in India. Similarly, Robitaille and Chatterjee (2019), in their study found that spouses mutually influence each other in terms of son preference, and they investigated whether an individual's self-reported son preference is associated with their spouses' son preference. Most of the previous literature on son preference has focused on knowing only mother's fertility preferences and ignoring fathers, whereas it is important to know how sex-discriminatory attitudes are constructed within the household and the role of the father in this process (Robitaille & Chatterjee, 2019). Therefore, in this chapter we considered both parents (fathers and mothers) and examined the influence of their educational attainments and endogamy on son preference.

1.3 Data and Methods

We examined harmonized census microdata from the IPUMS International (www.ipums.org/international) from three countries: the USA (2015), Canada (2011) and Spain (2011). IPUMS-International provides census and survey data from around the world (Minnesota Population Center, 2019). Using these data, we evaluated preference for male children among Indian immigrants residing in these three countries. We restricted the sample to households in which at least one person in the household reported "India" as their place of birth. The resulting datasets contained 3.615.875, 898.870 and 46.833 cases for the USA (2015), Canada (2011) and Spain (2011), respectively. These are the weighted

number of cases with individuals born in India and individuals living in a household with at least one person born in India. The smaller size of the Spanish sample reflects the fact that Spain has fewer immigrants of Indian origin as compared to the other two countries.

We focused on the sex ratio as a global indicator of son preference, as documented in the literature (Das Gupta, 1987; Bhat and Zavier, 2003; Gaudin, 2011; Vanneman et al., 2012; Mitra, 2014; Devi, 2016; Tønnessen et al., 2013). Using aggregate data on sex ratios of Indian immigrants from Spain, the USA, and Canada, we examine the prevalence of son preference among Indian immigrant families and identify its patterns. To represent the Indian community, we included all households in our datasets, which consisted of first-generation Indians co-residing with other household members. To distinguish other household members, we utilized information on their place of birth and parental birthplace. This approach enabled us to accurately characterize the Indian community. For each person we know her or his age, sex and educational attainment. By using the variable of spouse's location, we identify co-resident partners. This information allows us to classify couples based on the spouse's place of birth, we classified the couples with three groups i.e., Indians married to Indians; Indians married to natives of host countries; Indians married to people from countries other than India and the host countries.

To estimate sex ratios, we focused attention on children. We focused on co-resident children aged 15 and younger, born to at least one Indian parent. We included children born in India, in the destination country, or elsewhere.

We began our analysis by presenting population pyramids that provide an overview of the Indian immigrant population and their co-residents in the three selected countries (Spain, USA, and Canada). Further, we provided general information on the Indian community for all quinquennial age groups and for different combinations of "place of

birth" (self and parental) and presented it in three population pyramids, one for each dataset/country of analysis.

We also considered three additional independent variables, parental educational attainment, parental marital status and parental endogamy and examined their descriptive analysis and percentage distribution across the three countries. In addition, we also examined the children (0 to 15 years) of Indian immigrants (father and/or mother born in India). We distributed the Indian children by sex and country of birth across three countries and computed their sex ratios and also provided their descriptive analysis. Moreover, we also analysed the sex ratios to examine the influence of parental education and endogamy on the sex ratio of their children. For this particular analysis, we restricted our data to parents (father and mother) who were 25-39 years old and born in India and children who were 0 to 15 years old. We classified the child's place of birth into three categories: *born in India, born in host countries,* and *born in other countries.*

For the final comparison, we used logistic regression as the strategy for multivariate analysis. We performed binary logistic regression analysis to predict son preference based on the selected independent variables like: Child's place of birth, Parental place of birth, Parental education and Parental age.

1.4 Results

The results section is divided into three subsections. The first subsection (1.4.1), gives an overview of the Indian immigrant population in the three selected countries. The second subsection (1.4.2) presents an in-depth analysis of the influence of parental educational attainment and endogamy on sex ratio. The third subsection (1.4.3) demonstrates the results of binary logistic regression analysis.

1.4.1 Population Pyramids and general representation of the Indian community in three countries

Figure 1.1 shows population pyramids of Indian immigrants and their co-residents (Spain 2011, Canada 2011 and the USA 2015) for all quinquennial age groups, and by place of birth: born in India; born in host country and both parents born in India; born in host country and only mother born in India; born in host countries and only father born in India.

The population pyramids in Figure 1.1 represent Indian communities in three different countries and provide a general introduction to them in relative terms. These pyramids provide information about first- and second-generation Indian males and females as well as their age distribution.

For the first group (born in India), after expanding the number of cases using individual weight, we obtain a total population of 30.381 in Spain (with 18.477 males and 11.904 females) as compared to the total population of 2.415.428 in the USA (with 1.267.763 males and 1.147.665 females) as compared to the total population of 5.782.56 in Canada (with 2.890.40 males and 2.892.16 females).

For the second group (born in the host countries and both parents are born in India), after expanding the number of cases by using the individual weight, we obtain a total population of 6.634 in Spain (with 3.658 males and 2.976 females) as compared to the total population of 839.778 in the USA (with 443.019 males and 396.759 females) as compared to the total population of 320.621 in Canada (with 166.409 males and 154.212 females).

For the third group (born in the host countries and only mothers are born in India), after expanding the number of cases by using the individual weight, we obtain a total population of 4.361 in Spain (with 2.513 males and 1.848 females) as compared to the total

population of 718.486 in the USA (with 378.767 males and 339.719 females) as compared to the total population of 226.030 in Canada (with 122.625 males and 103.405 females).

Finally, for the fourth group (born in host countries and only fathers are born in India) after expanding number of cases using individual weight, we obtain a total population of 5.104 in Spain (with 2.748 males and 2.356 females) as compared to the total population of 720.244 in the USA (with 381.361 males and 338.883 females) as compared to the total population of 218.038 in Canada (with 117.292 males and 100.746 females).

The size of the Indian immigrant populations in the USA and Canadian samples is larger than the size of the Indian immigrant population in Spain. Spain has more males and younger age groups. Moreover, the size of the second-generation Indian immigrant population in Spain is smaller compared to the USA and Canada. The Indian immigrant population in the USA and Canada has more balanced sex ratios than the Indian immigrant population in Spain.

Figure 1.1: Age and sex distribution of the Indian community in Spain (2011), Canada (2011) and USA (2015)

Source: Authors' own elaboration, with data from the IPUMS International.

1.4.2 Characteristics of parents

In this section, we describe the characteristics of Indian parents. We restrict our data to individuals who are 25 to 39 years old and have India as their place of birth.

Table 1.1 shows parental educational attainment (low, medium, and high for the USA and Canada; low and medium for Spain)[4] and marital status (single, married, divorced, and widowed). The results show strong differences in the educational attainment of Indian immigrants in the USA and Canada compared to those in Spain. In other words, parents in the USA and Canada are more educated than parents in Spain. In Spain 62% of males and 46% of females have a "low" level of education whereas in the US and Canada, these figures are very low (USA: 1.2% for males and 1.7% for females; Canada: 8.7% for males and 7.1% for females).

Cross-national differences by marital status are not as dramatic as for educational attainment. The majority of Indians born in these age groups are married/in union. Percentage of singles and widows is negligible in the three countries. The proportion of singles is higher among males due to later age of marriage. Spain has the highest proportion of single men and the lowest proportion of single women. The large differences between the proportion of single male and female indicate very different patterns of union formation. However, in all three samples, the percentage of married females (Spain: 92%, the USA: 87.3%, Canada: 87.5) is higher than that of males (Spain: 67.7%, the USA: 70.9%, Canada: 78.4%).

[4] For the Spanish sample, low = less than primary and primary completed, medium = secondary completed and university completed; for the US and Canada, low = less than primary and primary completed, medium = secondary completed, high = university completed.

Table 1.1: Educational attainment and marital status of Indian-born 25 to 39 years old populations living in Spain, the US and Canada by sex

	Educational attainment			Marital Status				Total (*N*)
	Low	Medium	High	Single	Married	Seperated	Widowed	
Males								
Spain	62.3	37.7		30.8	67.7	1.5	0.0	100 (*260*)
USA	1.2	10.9	87.8	27.6	70.9	1.4	0.0	100 (*4508*)
Canada	8.7	37.0	54.3	18.6	78.4	2.9	0.1	100 (*2489*)
Females								
Spain	46.0	54.0		6.8	92.5	0.6	0.0	100 (*161*)
USA	1.7	11.7	86.5	10.8	87.3	1.7	0.2	100 (*4179*)
Canada	7.1	36.0	56.9	8.0	87.5	4.4	0.2	100 (*2791*)

Source: Authors' own elaboration, with data from the IPUMS International.

Table 1.2 presents the endogamy (native, India, others)[5] and shows that the majority of Indian immigrants (males and females) in the USA and Canada and only females in Spain are married to people of Indian origin. The percentages of males married to people of Indian origin are 61.9% in Spain, 89.5% in the USA, and 90.3% in Canada. For females, these percentages are 87.9% in Spain, 91.7% in the USA, and 91.5% in Canada. Less than 7% are married to natives and between 2 to 6% are married to people of other origins in the USA and Canada. In Spain, on the other hand, 14.4% of males and 6.4% of females are married to natives and 23.7% of males and 5.7% of females are married to people of other origins. When compared to other characteristics in terms of patterns of assortative mating/endogamy, the three communities show striking similarities.

[5] Native = people who were born in host countries, India = people who were born in India, others = people who were neither born in host countries nor in India.

Table 1.2: Origin of the Spouses of Indian immigrants (25-39) by Country

		Birthplace			Total (N)
			Abroad		
		Native	India	Other	
Males					
	Spain	14.4	61.9	23.7	100 (139)
	USA	6.3	89.5	4.2	100 (2960)
	Canada	5.7	90.3	4.0	100 (1836)
Females					
	Spain	6.4	87.9	5.7	100 (140)
	USA	5.4	91.7	2.8	100 (3550)
	Canada	5.3	91.5	3.3	100 (2368)

Source: Authors' own elaboration, with data from the IPUMS International.

1.4.3 Analysis of children (0 to 15)

Table 1.3 examines the sex ratios among co-resident children born (native, India and other) to Indian migrants residing in Spain, the USA and Canada. The analysis is restricted to children aged 0 to 15 years, as it can be safely assumed that the vast majority of these children co-reside with their parents. The majority of children in the USA (79.7%) males: (79.2%), females and in Canada (78.6%) males: (77.6%) females, are natives (born in the host countries) as compared to Spain (45.7%) males: (57.6%) females. There is a high percentage of children in Spain (50%) males: (38.50%) females who are born in India, as compared to the USA (16.86%) males: (18.32%) females and Canada (17.38%) males: (17.35%) females. In the USA and Canada, more than 75% of these children are born in the USA and Canada. However, in Spain, 50% of male children and 38% of female children were born in India and came to Spain as migrants, suggesting a more recent phenomenon and a family migration type.

Table 1.3 also allows us to compute the total sex ratios and classify by country of birth. The total sex ratio in Spain is more skewed (1.58), as compared to the USA (1.06)

and Canada (1.09). The sex ratio in Spain in all the three groups: native (1.25), India (2.10) and other (1.58) is greater as compared to the sex ratios in the USA: native (1.07), India (0.98) and other (1.48) and in Canada: native (1.11), India (1.09) and other (0.86). This suggests that there is a strong son preference among Indian immigrants in Spain compared to the US and Canada. The results need to be interpreted with caution, as this could reflect sex-selective migration patterns for children born in India but living in Spain.

Table 1.3: Children (0 to 15) Born to Indian-Born Parents by Birth Place and Country of Residence

	Birthplace			Total (*N*)
		Abroad		
	Native	India	Other	
Males				
Spain	45.73	50.00	4.27	100 (*164*)
USA	79.76	16.86	3.37	100 (*3469*)
Canada	78.66	17.38	3.95	100 (*3009*)
Females				
Spain	57.69	37.50	4.81	100 (*104*)
USA	79.27	18.32	2.41	100 (*3276*)
Canada	77.60	17.35	5.05	100 (*2755*)
Sex Ratio				
Spain	1.25	2.10	1.40	1.58
USA	1.07	0.98	1.48	1.06
Canada	1.11	1.09	0.86	1.09

Source: Authors' own elaboration, with data from the IPUMS International.

1.4.4 Descriptive results

Table 1.4 shows a new set of sex ratios among children based on parental educational attainment and spousal birthplace. Children of Indian-born low educated fathers and mothers in Spain show the greatest sex ratios as compared to high educated individuals and compared to the low educated in the USA and Canada. For children of

Indian-born low educated fathers and mothers in Spain, the sex ratio in Spain is greater (2.36) and (2.05); as compared to the sex ratio in the USA (1.28) and (1.29); and Canada (1.19) and (1.09), respectively (Table 1.4). This suggests that low educated immigrants in Spain have more skewed sex ratios than low educated immigrants in the USA and in Canada. The baseline for comparison is the expected biological sex ratio which could range from 1.02 to 1.06.

Table 1.4: Sex ratios among children born to Indian parents in Spain, US and Canada by parental education and spousal birthplace

	Educational attainment			Total	Birthplace			Total
						Abroad		
	Low	Medium	High		Native	India	Other	
Males								
Spain	2.36	1.00		1.65	1.75	1.81	1.11	1.51
USA	1.28	1.06	1.05	1.05	0.95	1.06	1.14	1.06
Canada	1.19	1.11	1.06	1.09	0.99	1.11	0.90	1.10
Females								
Spain	2.05	1.13		1.52	1.45	1.81	2.08	1.80
USA	1.29	1.04	1.06	1.06	1.01	1.06	1.13	1.06
Canada	1.09	1.10	1.09	1.09	0.97	1.11	1.09	1.11

Source: Authors' own elaboration, with data from the IPUMS International.

Children of medium and high educated parents show more balanced sex-ratios. For children of Indian-born to the medium educated immigrant group, the sex ratio in Spain is 1.00 (fathers) and 1.13 (mothers); in the USA is 1.06 (fathers) and 1.04 (mothers); and in Canada is 1.11 (fathers) and 1.10 (mothers) (Table 1.4). For children of Indian-born the high educated immigrant group, the sex ratio in the USA is 1.05 (fathers) and 1.06 (mothers) and in Canada is 1.06 (fathers) and 1.09 (mothers) (Table 1.4).

Furthermore, we compare sex ratios for all three populations across groups based on parental endogamy. For the children born to native fathers and mothers (Indian immigrants married to the people from host countries), the sex ratio is higher in Spain (1.75) and (1.45); compared to the sex ratio in the USA (0.95) and (1.01) and Canada (0.99) and (0.97) respectively (Table 1.4). Children born to Indian parents in Spain display largest sex-ratios. Children born to intermarried couples including natives show lower sex ratios, but still significantly higher than the natural sex ratios of 1.05, especially if the father is Indian born. In the US and Canada, sex ratios fluctuate and show no particular patterns. Endogamous couples in the US are close to normal. Intermarried couples are even below that.

For the children born to Indian fathers and mothers (Indian immigrants married to the people of Indian origin), the sex ratio is higher in Spain (1.81); compared to the sex ratio in the US (1.06) and Canada (1.11) respectively (Table 1.4).

For the children born to other fathers and mothers (Indian immigrants married to people from the other countries), the sex ratios in Spain are (1.11) and (2.08); and in the US (1.14) and (1.13) are higher as compared to Canada (0.90) and (1.09) respectively (Table 4).

1.4.5 Logistic Regression analysis

Finally, we turn to logistic regression to examine the sex ratios using a multivariate framework. The model does not test for causation but helps to compare the results for the three countries considering the same variables. The model is based on children aged 0-15 years of Indian-born migrants co-residing with them at the time of the census. The 'dependent' variable is the sex of the children. If there were the same number of males and females the baseline parameter of the model, the intercept, would be close to 0. We use

logistic regression to predict the sex of the children from the child's place of birth, parents' place of birth, father's education, mother's education, father's age and mother's age. For this analysis, we restricted the children's age to a period of 0–15 years and the parents age to a period of 25–39. Table 1.5 shows the regression coefficients. The results are expressed in log-odds. Thus, positive values indicate higher presence of males than females in the population.

Model 1 has no control variable. Intercept values indicate higher (positive values) or lower (negative values) skewed sex ratios in favour of male children compared to female children. Consistent with the descriptive results, Spain has the largest intercept value, indicating a higher presence of boys than girls. Model 2 adds the place of birth of the children.

Model 1 represents the base model, containing only the intercept (constant). In Model 2, we add the child's place of birth (India (reference), native and other). In Model 3, we add parent's place of birth (only father born in India (reference), only mother born in India and both parents born in India). In the last Model we restricted our data to parents with Indian place of birth. In this model, we added father's education and mother's education (low (reference), medium and high). We have also added the age of the father and mother (age groups 25-29- (reference), 30-34- and 35-39- years).

The model results are consistent with the results of the descriptive analysis. Due to the small number of cases for Spain, it becomes difficult to reach statistical significance. The results from Spain confirm that there is a high proportion of male children among Indian immigrants which is reflected in the intercept values. Additional controls in Model 2 and Model 3 do not change this either. Model 3 for Spain shows that the proportion of male children is lower in couples where only the mother is Indian than in the other

arrangements. Model 2 and Model 3 for the US show that the proportion of male children is significantly higher among Indian children born neither in India nor in the US. We have no explanation for this result. In contrast, Model 2 for Canada suggests a lower presence of male children born in neither India nor Canada. No significant associations are found with the characteristics of mothers and fathers when filters such as place of birth of fathers and mothers are applied. However, in the US and Canada, we find that among children born to Indian parents, the proportion of male children is higher when the father is married to an Indian mother.

All in all, this suggests that the role of individual controls in explaining cross-country differences is relatively small and that cross-country differences must be driven by other factors.

Table 1.5: Logistic Regression Analysis

	Spain					USA					Canada				
	All			At least ... born in India		All			At least ... born in India		All			At least ... born in India	
	M1	M2	M3	Father	Mother	M1	M2	M3	Father	Mother	M1	M2	M3	Father	Mother
Intercept	0.19^{+}	0.32*	0.91**	1.05	-0.06	0.05*	-0.02	-0.07	-0.63	0.21	0.08***	0.09	-0.06	-0.27	-0.32
Child's place of birth															
India		ref	ref	ref	ref		ref	ref	ref	ref		ref	ref	ref	ref
Native		-0.21	-0.5^{+}	-0.33	-0.01		0.08	0.09	0.17*	0.14^{+}		0.01	0.02	0.16	0.15^{+}
Other		-0.42	0.13		0.40		0.41**	0.41**	0.75*	0.46^{+}		-0.24^{+}	-0.21	-0.05	-0.08
Partents' place of birth															
Only father born in India			ref	ref				ref	ref				ref	ref	
Only mother born in India			-0.96*		ref			0.03		ref			0.09		ref
Both parents born in India			-0.09	-0.19	0.65			0.04	0.21^{+}	0.11			0.16	0.25^{+}	0.09
Father's Education															
Low				ref					ref					ref	
Medium				0.02					0.41					-0.1	
High															
Mothers's Education															
Low					ref					ref					ref
Medium					-0.30					-0.23					0.09
High										-0.29					-0.29
Age															
Father's Age															
25-29				ref					ref					ref	
30-34				-0.82					0.18					-0.12	
35-39				0.21					0.07					0.11	
Mother's Age															
25-29					ref					ref					ref
30-34					-0.12					-0.12					0.01
35-39					-0.03					-0.09					0.07

Note: ***p<0.001 **p<0.01 *p<0.05 $^{+}$p<0.1

Source: Authors' own elaboration, with data from the IPUMS International.

1.5 Conclusions and Discussion

In this chapter, we examined the sex-ratios among children of Indian migrants residing in Spain, the USA and Canada using census microdata from IPUMS International. Our results show that the sex ratios of Indian immigrant children in Spain are significantly more skewed as compared to the Indian immigrant children in the USA and Canada. To assess the prevalence of son preference among Indian immigrant families, we used aggregate data on sex ratios of Indian immigrants from the three countries. This approach provides an indirect indicator of son preference and allowed us to understand the patterns of son preference among Indian immigrant families in the USA, Canada, and Spain. Previous research has established a correlation between high levels of son preference and sex-selective abortions, which can skew the sex ratio in favor of males (Puri and Adams 2013; Puri and Adams 2016). Therefore, we compared the sex ratios of Indian immigrants' children to gain insight into the prevalence of son preference in Indian immigrant communities.

Low-educated Indian immigrants have a higher sex ratio in all three countries. In Canada, the sex ratio is slightly skewed among children of medium educated Indian immigrants. On the other hand, the sex ratio is not skewed among children of medium educated Indian immigrants in the USA and Spain, and among children of high educated Indian immigrants in the USA and Canada. Thus, we can conclude that education influences son preference. When parents (Indian immigrants) have higher levels of education, the sex ratio is more balanced. Education is the moderating variable in this study and it is one of the key variables in virtually all demographic processes. Our results show that Indian immigrants in the USA and Canada are more educated compared to those in Spain.

Moreover, our analysis of the influence of parental endogamy on sex ratios shows that in Spain the sex ratio of children of Indian immigrants is more skewed (regardless of who they are married to: natives, Indians or others) compared to the children of Indian immigrants in the USA and Canada. However, the sex ratio is slightly skewed among children of Indian immigrants in the USA (among Indians married to others) and Canada (among Indians married to Indians). Thus, we can conclude that Indian immigrants in Spain exhibit a strong son preference compared to their counterparts in the USA and Canada. However, in the USA and Canada, there is a slight evidence of son preference. Our findings are consistent with those of Almond, Edlund, and Milligan (2009) and Duan and Hicks (2020), who found strong evidence of son preference in Indian/Asian communities in the USA and Canada, as mentioned earlier.

The analysis of influence of endogamy on sex ratios shows that when Indians are married to Indians they tend to have more skewed sex ratios as compared to when intermarry.

Our results suggest that while son preference exists among Indian immigrants in all three countries, it is particularly prevalent among low and medium educated immigrants. One of the strongest explanations for this phenomenon could be sex-selective abortions, as this practice has been prohibited in India but still persists. Studies in Canada and USA have linked skewed sex ratios among children of Indian immigrants with sex-selective abortions (Puri and Adams, 2013; Puri and Adams, 2016), and a similar study in India has found comparable results (Garg and Khan, 2017). These studies have found that sex-selective abortions were concern among Indians in India and Indians abroad, particularly among those who had strong son preference and who value males more over females. Therefore, we could say that the skewed sex ratios among Indian immigrants with low and medium education levels are likely the result of sex-selective abortions.

Comparative analysis of sex ratios has revealed that Indian immigrants in Spain have a higher son preference than Indian immigrants in the USA and Canada. There could be some possible explanations for this. The role of language could be an interesting moderating variable, as language is associated with immigrants' assimilation and integration in the host country. Due to the prevalence of the English language, Indian immigrants may find it easier to assimilate in the USA and Canada compared to Spain. Lack of proficiency in the language can create barriers for accessing education and job opportunities. Proficiency in the local language can provide opportunities for social and economic mobility, as well as facilitate contact with native speakers. In the absence of local integration, immigrants do not tend to change, but to become frozen in the ideologies they brought with them from their homeland, even as the homeland is constantly changing. Previous research has shown that migrant families with low cultural and socioeconomic integration tend to maintain their traditional norms and are less likely to adapt to host country norms (Mcvay and Pailhé, 2021). Further, there could also be important systematic differences among groups of immigrants from India moving to different countries. It is possible that these preexisting differences lead to different levels of integration across immigrant groups and are consequently related to the observed variations in son preference. Overall, integration into the host society could explain these differences, regardless of whether the barriers to integration are due to language-related factors, preexisting differences or segmented assimilation (Gisselquist, 2021). Future research in this area could examine differences across immigrant groups (socioeconomic background, education level, region of origin etc.) and language issues. Also, more attitudinal and qualitative information on variables such as son preference could help enrich these findings.

We are aware that our research may have limitations. We have a relatively smaller number of cases in the Spanish dataset because the size of the Indian community in Spain is much smaller than the size of the Indian community in the USA and Canada. It is plausible that this limitation may have influenced the results obtained from Spain. Despite the smaller number of cases in Spain, we see patterns of son preference among Indian immigrants.

These results are limited by the number of cases available, which reduces comparability. The new round of the census may shed more light on these issues. The differences between Spain, the USA and Canada could be due to sex selective migration, but also to other factors such as abortion laws and community settlement (in Spain, people with low levels of education may be more segregated in terms of jobs, education, etc). Interestingly, we observed high levels of endogamy in all three countries, suggesting few intermarriages.

In this chapter, we have shown that sex-ratios among children of Indian immigrants show very different patterns depending on the country of destination and also compared to the values recorded in India. Our analysis suggests that this depends very much on the type of migration. Among immigrants with low levels of education, such as those found among Indian-immigrants in Spain, the sex ratios are more skewed, with values even higher than those recorded in India. Intermarriage softens this pattern but not as much. In the USA and Canada, the fact is that the population with low levels of education is residual and does not exhibit these sex ratios. Even among intermarried couples' sex-ratios are below one.

Second Chapter:

Educational Assortative Mating Patterns among Indian Immigrants in the USA, Canada and Spain: The Role of Indian Males' Immigration Status.

Abstract

Using IPUMS International census microdata from the USA (2015), Canada (2011), Spain (2011) and India (2009), we compare the educational assortative patterns of Indian immigrants in the USA, Canada, and Spain with the natives of the respective host countries and with the natives of India. Additionally, we also compare the educational assortative patterns among natives of USA, Canada, Spain and India. Data were analysed using descriptive and loglinear analysis. The overall results show that Indian immigrants in the USA and Canada tend to marry hypogamously, while this is not the case for Indian immigrants in Spain. We conclude that Indian male immigrants in the USA and Canada use their "immigration status" as leverage to attract more educated female partners from their home country, while this is not the case in Spain. We provide explanation for the "leverage" phenomenon and discuss possible reasons for the disparity found in the Spanish context.

Keywords: Educational assortative mating patterns, Indian immigrants, Natives, Educational hypergamy, Educational hypogamy, Educational homogamy

2.1 Introduction

In this chapter, we test whether Indian male immigrants (who arrived in host countries before their female counterparts) use their immigration status (additional qualification for males in the marriage market) to find better-educated female partners. We test the following hypotheses: (H_0) Indian immigrants in host countries exhibit the same educational assortative patterns as natives of host countries, and (H_A) less educated Indian immigrants use their immigration status as leverage in the marriage market to attract highly educated female partners relative to them. The H_A suggests a reversal of hypergamy and that highly educated females in India are willing to marry less educated males.

There is an extensive literature on the marriage market of Indians in India (Parkash and Singh, 2014; Kashyap, Esteve and Garcia, 2015; Lin, Desai, and Chen 2020) and natives in destination countries (Kalmijn, 1998; Schoen and Cheng, 2006; Qian, 1998; Esteve and Cortina, 2006; Esteve and McCaa, 2007), but very little is known about the educational assortative mating patterns of Indian immigrants abroad who use their immigration status as leverage to find better-educated mates. Indians exhibit different assortative mating patterns compared to natives of destination countries, and it will be interesting to explore these in the context of immigration. We have discussed these ideas in more detail in the Background section.

This chapter makes two key contributions. First, it presents a comparative analysis of educational assortative mating patterns among Indian immigrants in three Western host countries; the USA, Canada and Spain and compares them with natives in four countries (India, USA, Canada, and Spain). Second, it examines whether the "immigration status" of male Indian immigrants (who arrive in host countries before their female counterparts), which is considered as an additional "qualification" during the matchmaking, takes precedence over educational achievement in mate choice. There is no research on whether

Indian immigrants in destination countries (such as the USA, Canada, and Spain) use their "immigration status as leverage to attract more educated female partners from their home country. To our knowledge, no study has yet examined this before.

2.2 Background

Educational attainment (achieved characteristic) is an important structuring dimension in union formation (Esteve, Garcia, and Permanyer, 2012; Kalmijn, 1998; Mare, 1991; Smits, Ultee, and Lammers, 1998; Blossfeld and Timm, 2003; Schwartz and Mare, 2005; Smits and Park, 2009). According to Kalmijn, (1998), women have traditionally not had, on average, the same education as men, resulting in educational hypergamy (male being more educated than his spouse). However, this trend is changing as womens' educational attainment increases, resulting in a decrease in the proportion of men marrying women with less education (marrying down educationally) (Mare, 1991; Esteve, Garcia and Permanyer, 2012). The disappearing educational disparity between the two sexes is reflected in the changing patterns of assortative mating, which has recently evolved from hypergamy to homogamy and even hypogamy in an increasing number of countries such as Spain, the US, France, etc. (Schoen and Cheng, 2006; Qian, 1998; Esteve and Cortina, 2006; Esteve and McCaa, 2007).

2.2.1 Assortative Mating Patterns in India

Self-selection in marriages (people choose their own partners and make their own decisions without family involvement) is not yet widespread in certain cultures such as India. Most marriages in India are arranged and families play an important role in making marriage decisions for their children, although these marriage arrangements are often consulted with brides and grooms (Desai and Andrist, 2010; Jeffery, 2014). Arranged

marriages, early age at marriage[6], and age and educational asymmetries in union formation are the three main characteristics of Indian nuptiality patterns (Kashyap et al, 2015). Arranged marriages are reinforced by traditional gender norms in India which place different expectations on men and women. Men with higher education and a good occupation are more desirable in the Indian marriage market than women with the same characteristics because of the prevalence of traditional gender norms, which assume that men are the primary breadwinners in the household. Due to women's low status in Indian society, their preferences have often been ignored when selecting a mate (Das, 1975; Parkash and Singh, 2014). However, this trend has been changing over time due to western influence. Nowadays, parents have begun taking their children's desires into account when looking for a partner, and participation of brides and grooms (to be) has increased in the whole process (Chowdhury, 2007; Parkash and Singh, 2014). Moreover, the younger generation pays more attention to achieved characteristics in finding a mate like economic potential, and jobs etc., rather than ascribed characteristics such as caste and religion, etc. (Parkash and Singh, 2013). Women in India prefer a male partner who can provide economic stability for her and her future children by having higher economical and earning potential (Todosijevic et al., 2003; Klasen and Pieters, 2015), and men also seek women who have the economic potential to support the family financially (Parkash and Singh, 2014), in addition to a physically attractive and beautiful female partner (Townsend and Levy, 1990; Klasen and Pieters, 2015).

Endogamous and arranged marriages are still the norm in India, but marriage arrangements have changed as men's and women's education attainment and occupations have become more important (Fuller and Narasimhan, 2008). The likelihood of homogamous union formations increases when both the man and the woman are university

[6] The trend of early marriage in India has been changing with the rise in women education (Dommaraju, 2008)

educated; otherwise, the marriages in India are significantly hypergamous (Kashyap et al., 2021). Although women's educational attainment is increasing in India, there is no correlation between higher levels of women's education and better employment opportunities or economic prospects (Chatterjee et al., 2018). Despite the increase in women's educational achievements, financial dependence, and employment opportunities, hypergamous unions still exist in India (Lin, Desai and Chen, 2020). Although women in India receive more education compared to men, they are expected to marry men with higher education than them, otherwise this could threaten men's dominance in households (Weitzman, 2014).

2.2.2 Assortative Mating Patterns in Western Countries.

Among more recent union formations, educational homogamy is the predominant pattern in European countries, as homogamous couples tend to contribute financially equally to the household compared to heterogamous couples, although it is more common among highly educated ones (Blossfeld and Timm, 2003; Blossfeld, 2009; Buss et al., 2001; Skopek, Schulz, and Blossfeld, 2011; Schwartz, 2013). Klestment and Van Bavel, (2015), found that highly-educated women are more likely to be the main breadwinner in 27 European countries, but only if their unions are hypogamous as compared to women with medium and low education, (which is not the case if their unions are hypergamous). Low-educated women are least likely to be the main breadwinners, in fact, most likely to be dependent on their husbands, regardless of their husband's education (Klestment and Van Bavel, 2015).

Educational level influences mating decisions in contemporary Spain, and as the number of educated people increases, highly educated people apparently form more homogamous partnerships, suggesting that people mate assortatively rather than randomly

(Esteve and Cortina, 2006). Traditional hypergamy has declined as differences between males and female's education have narrowed (Esteve and Cortina, 2006). Similar to Europe and many other countries, educational attainment has increased in the USA, especially among women, and there are more hypogamous union formations (Charles and Luoh, 2003). Considering another example, although women in the USA tend to marry down in terms of education, suggesting a reversal of gender inequality in education, it is still less common for women to earn more than their male counterparts (Bertrand, Pan, and Kemencia, 2013). Schwartz and Mare, (2005) examined trends in educational assortative mating from 1940 to 2003 in the USA with focus on prevailing marriages because they are a more appropriate unit of analysis for examining the implications of assortative mating. Additionally, Hou and Myles, (2008) report in their study that over the past three decades, absolute and relative rates of educational homogamy have increased clearly in the USA and Canada among young adults. In local marriage market in the USA, returning migrants may become more attractive because of their higher socio-economic position relative to non-migrants (Massey and Espinosa, 1997; Parrado, 2004). When Mexican migrants return to marry in their home country, their improved economic status allows them to marry desirable partners who can overlook their low educational attainment, and they tend to marry up educationally (Parrado, 2004; Choi and Mare, 2012). Gender roles egalitarianism in western countries promotes men to compete for women with high educational attainment, just as women traditionally competed for highly educated men (Mare, 1991; Mason and Jensen, 1995). Educational homogamy has become more prevalent among college graduates since 2000 in the USA (Schwartz and Mare, 2005).

Among low educated homogamous couples, women more likely to stay home when they have children as compared to their low educated male partners because of the high costs of childcare expenses in the USA (Bertrand, Pan, and Kemencia, 2013). Most

women take off from work after the child birth and do not return to the labor market until the child's mandatory education starts; and this is known as the motherhood penalty which keeps recent mothers out of the labor market (Buidg and England, 2001; Stier, Lewin-Epstein, and Braun, 2012; Budig, Misra, and Boeckmann, 2012). For this reason, hypogamous unions in European countries do not always result in wives earning more money compare to their husbands (Klestment and Van Bavel, 2015). Motherhood penalty is responsible for women with children earning less income compared to their male partners and other females without children (Klesment and Van Bavel, 2015). That clearly shows women's dependence is strongly related to their education (Klestment and Van Bavel, 2015). Changing educational assortative mating patterns affect family formation, educational hypogamy impacts the labor market, women earn more money, become the main breadwinner of the home, and all of this also affects their decision making as well (Van Bavel, 2012; Schwartz and Han, 2014; Klestment and Van Bavel, 2015). All in all, women gain independence and decision-making power through their education.

2.3 Objectives and hypotheses

Marriage is an important factor that builds strong bonds not only between two individuals but also with families and social groups. To analyse the marriage patterns of immigrants, previous research has examined their social assimilation in host countries (Pagnini and Morgan, 1990; Qian and Lichter, 2001; Alba and Nee, 2003; Qian and Lichter, 2007; Kalmijn and Van Tubergen, 2010). Most studies of assortative mating patterns among immigrants focus on their intermarriage with natives and their social integration (Kalmijn, 1998; Kulu and González-Ferrer, 2014) and compare them with the educational assortative mating patterns of the native population (Schwartz and Mare, 2005;

Klestment and Van Bavel, 2015; Bertrand, Pan, and Kemencia, 2013; Esteve and Cortina 2006). In this chapter we focus on the educational assortative mating patterns of Indian immigrants with their Indian partners in three Western destination countries: the USA, Canada, and Spain. To study marriage patterns, it is important to examine people's educational attainment, because education provides individuals with opportunities and preferences when choosing a mate (Kalmijn, 1998). Previous studies have analyzed the immigrant's integration in host countries by examining how many of them marry with natives of the host country (Alba and Nee 2003). However, there is no research on whether Indian male immigrants in destination countries (such as the USA, Canada, and Spain) use their "immigration status" (additional qualification for men in the marriage market) as leverage to attract more educated female partners from their home country. In this chapter, we examine the role that immigrant status plays when Indian male immigrants (who arrived in host countries before their female counterparts) use it to find better-educated female partners. A previous study found that immigrants with higher educational attainment have a higher chance of marrying natives in Switzerland because they compensate with their educational status advantage (Potarca and Bernardi, 2018). Similarly, in this chapter, we aim to examine whether or not low-educated Indian immigrants compensate for their low educational attainment with their immigration status when it comes to finding highly educated mates from India. We test the following hypotheses:

(H_0) Indian immigrants in host countries exhibit the same educational assortative patterns as natives of host countries.

(H_A) Less educated Indian immigrants use their immigration status as leverage in the marriage market to attract highly educated female partners compared to them.

In this chapter, we have examined patterns of educational assortative mating among Indian immigrants in the USA, Canada and Spain and compared them with natives of these countries and with Indians in India. We also analyze whether less educated Indian males in host countries use their immigrant status in the marriage market to attract highly educated females from their home country. We address the question of whether or not Indian male immigrants increase their chances of finding more educated spouses from their home country by means of immigration status.

2.4 Data and Methods

We examined harmonized census microdata from IPUMS International (www.ipums.org/international) from four countries: USA (2015), Canada (2011), Spain (2011), and India (2009). IPUMS-International provides census and survey data from around the world (Minnesota Population Center, 2019). The sample from India (IPUMS, 2009) was used as a control group. Overall, we made three comparisons in this chapter (Table 2.1). We compared the educational assortative patterns of Indian immigrants: first, Indian immigrants in the USA, Canada, and Spain with the Indians in India; and second, Indians in India with the natives in the USA, Canada, and Spain; and third, we compared the immigrants with natives (the USA, Canada and Spain) (Table 2.1). We identified couples living in a relationship based on the location variable of the spouse (SPLOC[7]). We further identified the Indian community and the native community and classified couples by birthplace. For each person, we know the age, sex, birthplace, education level, and relationship status. We classified couples into two groups: Indian men married to Indian women, and Native women married to Native men. To measure the educational assortative

[7] SPLOC is a constructed variable indicating whether or not the individual's spouse lived in the same household (IPUMS, 2020)

patterns among Indian immigrants living in the above-mentioned countries, we restricted the sample to the 30-39 age group and to households in which both the husband and wife reported "India" as their birthplace. We further restricted the sample by selecting only those couples in which the husbands arrived abroad before their partners. The resulting datasets contained 2.636, 1.354, and 151 cases (weighted) for the USA (2015), Canada (2011), and Spain (2011), respectively. The smaller size of the Spanish sample reflects the fact that there are fewer immigrants of Indian origin in Spain than in the other two countries. For Indians in India (2009), we also used a sample of individuals aged 30 to 39 years, and the resulting dataset contained 31.218 cases (weighted).

To obtain accurate results, we selected only non-Hispanic whites for the US born women and men. In the datasets for Canada and Spain, we do not have all the specific variables available to create this particular variable for the native-born population, otherwise we could have followed the same procedure as in the dataset for the US. For the native-born population, we also limited our datasets to individuals aged 30 to 39 years. The resulting datasets contained 61.710, 27.133, and 158.649 cases (weighted) for the USA 2015, Canada 2011, and Spain 2011, respectively.

Table 2.1: Educational Assortative Mating Comparison Model

	Natives			
	USA	**Canada**	**Spain**	**India**
Indian Immigrants				
USA	**x**			**x**
Canada		**x**		**x**
Spain			**x**	**x**

Source: Authors' own elaboration, with data from the IPUMS International.

Data were analysed using descriptive analysis. We considered the educational level (low, medium, and high) of each case from the USA, Canada, Spain, and India. The

descriptive analysis shows that majority of Indians in India and Indians in Spain have low level of education and majority of Indians in the USA and Canada have very high level of education. Since in this chapter, we are comparing the educational assortative patterns of people with different levels of education, we have further examined the data using loglinear analysis. We have accounted for all of these differences in educational profiles, but even after so, we find very different patterns of assortative mating, which are discussed in more detail in the results section.

Loglinear models generally analyse the patterns of relationships between two or more categorical variables (Knoke and Burke, 1980). This model is used to test hypotheses. Loglinear models do not require to have differences between independent and dependent variables, but measures the association between these variables (Esteve and Cortina 2006). This model provides a comprehensive picture of the marriage market because it accounts for all the interactions between variables.

Figure 2.1 shows the topological structure of the loglinear model we use in this analysis. This model includes two main parameters: The first parameter tests whether there is a tendency to marry within the same group (homogamous unions where the husband and wife are equally educated). If the number we get is positive after adding this parameter to the model, it means that there is a tendency among unions to concentrate in the diagonal than outside, and that there are homogamous unions (see Figure 2.1 Homogamy design). The second parameter identifies the hypogamous unions (wife has more education). Here the model tests whether there is a tendency for these unions to concentrate above the diagonal than below, and the number we get is positive, it means that there are hypogamous unions (see Figure 2.1 Hypogamy design).

Figure 2.1: Topological Structure of the Log-Linear Model

Homogamy design				Hypogamy design			
	Women				Women		
	Low	Medium	High		Low	Medium	High
Men				Men			
Low	**1**	0	0	Low	0	**1**	**1**
Medium	0	**1**	0	Medium	0	0	**1**
High	0	0	**1**	High	0	0	0

Source: Authors' own elaboration, with data from the IPUMS International.

2.5 Results

The results section is divided into three subsections. The first subsection (2.5.1), provides a descriptive analysis of the Indian immigrant population in three selected countries. The second subsection (2.5.2) presents a descriptive analysis of the native population in four countries, namely the USA, Canada, Spain, and, India. The third subsection (2.5.3) demonstrates the results of the loglinear analysis.

2.5.1 Descriptive Analysis of the Indian Community in Three Countries

This section presents descriptive data on the educational assortative patterns of Indian immigrants in three countries: the USA, Canada and Spain. Tables 2.2 to 2.4 show the educational attainment (low, medium and high) of the Indian population (Indian males and Indian females) in the three countries. Table 2.2 shows that majority of young Indian couples (87.3%) in the USA have high levels of education. Very few Indian couples in the USA fall into the low (0.1%) and medium (3.2%) education level category. Although there is a tendency for young Indian couples in the USA to be in homogamous unions, the descriptive results show that there is also a tendency to have more Indian couples above the diagonal (men low and women medium = 4 (0.1%); men low and women high = 15 (0.6%); men medium and women high = 134 (5.1%)) than below the diagonal (women low

and men medium = 3 (0.1%); women low and men high = 5 (0.2%); women medium and men high = 86 (3.3%). This suggests that Indian couples marry hypogamously in the US.

Table 2.3 of Indian couples in Canada shows similar patterns to those we observed in the US. The majority of young Indian couples (44.9%) in Canada also have high levels of education, followed by medium (23.9%) and low (3.3%) levels of education. Similar to the patterns of Indian couples in the USA, the young Indian couples in Canada also marry homogamously however, the descriptive results of the Indian couples in Canada show that there is also a tendency to have more couples above the diagonal (men low and women medium = 51 (3.8%); men low and women high = 24 (1.8%); men medium and women high = 156 (11.5%)) than below the diagonal (women low and men medium = 36 (2.7%); women low and men high = 10 (0.7%); women medium and men high = 102 (7.5%)). This indicates that Indian couples marry hypogamously in Canada.

Table 2.4 shows different educational trends among Indian immigrants in Spain compared to the USA and Canada. In contrast to the USA and Canada, the majority of young Indian couples in Spain fall into the low (55%) educational category, followed by the medium (16.6%) educational category. A very small number of young Indian couples in Spain are in high educational category (6.6%). The results show strong differences in the educational attainment of Indian immigrants in the USA and Canada compared to those in Spain. The educational profiles of the young Indian population in these countries are different. In the USA they have high levels of education, while in Spain, the majority of Indian immigrants have low levels of education. The pattern of having more young couples above the diagonal in the USA and Canada has changed in Spain. In Spain, we found that there are slightly more couples below the diagonal (women low and men medium = 4 (2.7%); women low and men high = 0; women medium and men high = 5 (3.3%)).The tendency to have more couples above the diagonal is slightly weaker in Spain (men low

and women medium = 13 (8.6%); men low and women high = 9 (6%); men medium and women high = 2 (1.3%)). This suggests that young Indian couples in Spain have a slight tendency to marry hypergamously.

Table 2.2: Indian Immigrants in the USA (2015)

		Indian Women			
		Low	Medium	High	Total
Indian Men					
	Low	2 (0.1%)	4 (0.2%)	15 (0.6%)	21 (0.8%)
	Medium	3 (0.1%)	85 (3.2%)	134 (5.1%)	222 (8.4%)
	High	5 (0.2%)	86 (3.3%)	2302 (87.3%)	2393 (90.8%)
Total		10 (0.4%)	175 (6.6%)	2451 (93%)	2636

Source: Authors' own elaboration, with data from the IPUMS International.

Table 2.3: Indian Immigrants in Canada (2011)

		Indian Women			
		Low	Medium	High	Total
Indian Men					
	Low	44 (3.3%)	51 (3.8%)	24 (1.8%)	119 (8.8%)
	Medium	36 (2.7%)	323 (23.9%)	156 (11.5%)	515 (38%)
	High	10 (0.7%)	102 (7.5%)	608 (44.9%)	720 (53.2%)
Total		90 (6.7%)	476 (35.2%)	788 (58.2%)	1354

Source: Authors' own elaboration, with data from the IPUMS International.

Table 2.4: Indian Immigrants in Spain (2011)

		Indian Women			
		Low	Medium	High	Total
Indian Men					
	Low	83 (55%)	13 (8.6%)	9 (6%)	105 (69.5%)
	Medium	4 (2.7%)	25 (16.6%)	2 (1.3%)	31 (20.5%)
	High	0	5 (3.3%)	10 (6.6%)	15 (9.9%)
Total		87 (57.6%)	43 (28.5%)	21 (13.9%)	151

Source: Authors' own elaboration, with data from the IPUMS International.

2.5.2 Descriptive Analysis of the Native Population in the USA, Canada, Spain, and India.

This section presents descriptive data on the educational assortative patterns of the native population in four countries: the USA, Canada, Spain, and India (Tables 2.5 to 2.8). Table 2.5 shows that the majority of native couples (37.5%) in the USA have a medium level of education, followed by (31.8%) couples with a high level of education. Very few native couples (1%) in the USA fall into the low educational category. The educational assortative patterns of the native-born population in the USA are similar to those of the Indian immigrant population in the USA. Table 2.5 shows that there are homogamous unions among the native population in the USA, however, there is a tendency to have more couples above the diagonal (men low and women medium = 1701 (2.8%); men low and women high = 229 (0.4%); men medium and women high = 34189 (16.2%)) than below the diagonal (women low and men medium = 1013 (1.6%); women low and men high = 129 (0.2%); women medium and men high = 5233 (8.5%)). This indicates that native couples in the USA marry hypogamously.

Table 2.6 shows that the majority of natives couples (42.4%) in Canada have a medium level of education, followed by (18.8%) couples with a high level of education. A very small number (2.7%) of couples fall into the low educational category. The educational assortative patterns of the native population in Canada are similar to those of the Indian immigrant population in Canada. Table 2.6 shows that there are homogamous unions among the native population, however, there is a tendency to have more couples above the diagonal (men low and women medium = 1622 (6%); men low and women high = 301 (1.1%); men medium and women high = 4711 (17.4%)) than below the diagonal (women low and men medium = 1051 (3.9%); women low and men high = 98 (0.4%);

women medium and men high = 1998 (7.4%)). This suggests that native couples in Canada marry hypogamously.

Table 2.7 shows the descriptive analysis of native couples in Spain. Majority of young native Spanish couples (27.3%) have medium level of education followed by (20.3%) couples with low level of education. Only (9.8%) of young native Spanish couples belong to the category with a high educational level. This pattern of educational assortative mating among young native Spanish couples differs from the patterns of young native couples in the USA and Canada. However, there is a tendency to have more couples above the diagonal (men low and women medium = 25104 (15.8%); men low and women high = 4241 (2.7%); men medium and women high = 14576 (9.2%)) than below the diagonal (women low and men medium = 12867 (8.1%); women low and men high = 1365 (0.9%); women medium and men high = 9363 (5.9%)). This indicates that native couples in Spain marry hypogamously. This pattern is similar to the pattern we observed among native couples in the USA and Canada.

Table 2.8 shows the descriptive analysis of the young native Indian couples in India. Majority of young native couples in India have (59.6%) low level of education followed by (10.1%) medium level of education. Only (5.4%) of young Indian couples in India have high level of education. The educational assortative mating patterns among young Indian couples in India are similar to the patterns of Indian immigrants couples in Spain. However, these patterns are significantly different from the patterns of Indian immigrants in the USA and Canada. The analysis shows that the native population in India has more couples below the diagonal (women low and men medium = 4173 (13.7%); women low and men high = 504 (1.6%); women medium and men high = 1165 (3.7%)). Rather than having them above the diagonal (men low and women medium = 1265 (4%); men low and women high = 79 (0.3%); men medium and women high = 580 (1.9%)),

which we have observed in the native and Indian immigrant population in the USA and Canada and in the native population of Spain. This suggests that young couples in India marry hypergamously. This pattern of hypergamous marriages among Indians in India is completely different from the patterns among the native population in the other three countries (the USA, Canada and Spain).

Table 2.5: Not Hispanic Whites in the USA (2015)

		Not Hispanic White Women			
		Low	Medium	High	Total
Not Hispanic White Men					
	Low	620 (1%)	1701 (2.8%)	229 (0.4%)	2550 (4.1%)
	Medium	1013 (1.6%)	23169 (37.5%)	10007 (16.2%)	34189 (55.4%)
	High	129 (0.2%)	5233 (8.5%)	19609 (31.8%)	24971 (40.5%)
Total		1762 (2.9%)	30103 (48.8%)	29845 (48.4%)	61710

Source: Authors' own elaboration, with data from the IPUMS International.

Table 2.6: Native Population in Canada (2011)

		Canadian Women			
		Low	Medium	High	Total
Canadian Men					
	Low	739 (2.7%)	1622 (6%)	301 (1.1%)	2662 (9.8%)
	Medium	1051 (3.9%)	11503 (42.4%)	4711 (17.4%)	17265 (63.6%)
	High	98 (0.4%)	1998 (7.4%)	5110 (18.8%)	7206 (26.6%)
Total		1888 (7%)	15123 (55.7%)	10122 (37.3%)	27133

Source: Authors' own elaboration, with data from the IPUMS International.

Table 2.7: Native Population in Spain (2011)

		Spanish Women			
		Low	Medium	High	Total
Spanish Men					
	Low	32192 (20.3%)	25104 (15.8%)	4241 (2.7%)	61537 (38.8%)
	Medium	12867 (8.1%)	43331 (27.3%)	14576 (9.2%)	70774 (44.6%)
	High	1365 (0.9%)	9363 (5.9%)	15610 (9.8%)	26338 (16.6%)
Total		46424 (29.3%)	77798 (49%)	34427 (21.7%)	158649

Source: Authors' own elaboration, with data from the IPUMS International.

Table 2.8: Native Population in India (2009)

		Indian Women			
		Low	Medium	High	Total
	Indian Men				
	Low	18598 (59.6%)	1265 (4.%)	79 (0.3%)	19942 (63.9%)
	Medium	4173 (13.4%)	3161 (10.1%)	580 (1.9%)	7914 (25.4%)
	High	504 (1.6%)	1165 (3.7%)	1693 (5.4%)	3362 (10.8%)
Total		23275 (74.6%)	5591 (17.9%)	2352 (7.5%)	31218

Source: Authors' own elaboration, with data from the IPUMS International.

2.5.3 Log Linear Analysis

To get accurate results, we need loglinear model which basically accounts for the different educational profiles of Indians in India and Indians in the USA, Canada and Spain. However, even after accounting for these differences, the model reveals very different patterns of educational assortative mating between Indian couples in India and abroad.

Figure 2.2 shows the main parameters of log linear analysis of the Indian population in four countries: the USA, Canada, Spain and India. We compare Indian immigrants in three countries (the USA, Canada, Spain) and Indians in India. We compare the educational attainment of Indian couples in India in two contexts: first, with Indian immigrants in high-income countries, and second, with the native population of high-income countries (the USA, Canada and Spain). Figure 2.2 shows that there are homogamous unions among couples in the four countries. These positive values, or values above zero of homogamy, indicate that couples tend to marry people with the same level of education, or in other words, that the husband and wife are equally educated.

Figure 2.2 illustrates educational assortative patterns among Indian immigrant couples abroad and Indian couples in India, showing a prevalence of hypergamous unions among Indian immigrants in Spain and Indians in India, where men tend to marry women

with lower levels of education. Overall, the prevalence of hypergamous unions and asymmetry in education levels of spouses is strong in India, with men typically marrying down and women marrying up.

In the USA, on the other hand, we find no evidence of hypergamous unions, but rather a little evidence of hypogamous unions. In Canada, there is no evidence of hypergamy and more evidence of hypogamy. Taking into consideration these structural constraints what is the propensity for men and women to marry across educational groups? We find no evidence of hypergamy in the USA and Canada. There is a positive trend toward hypogamy in the USA and it is even more pronounced in Canada.

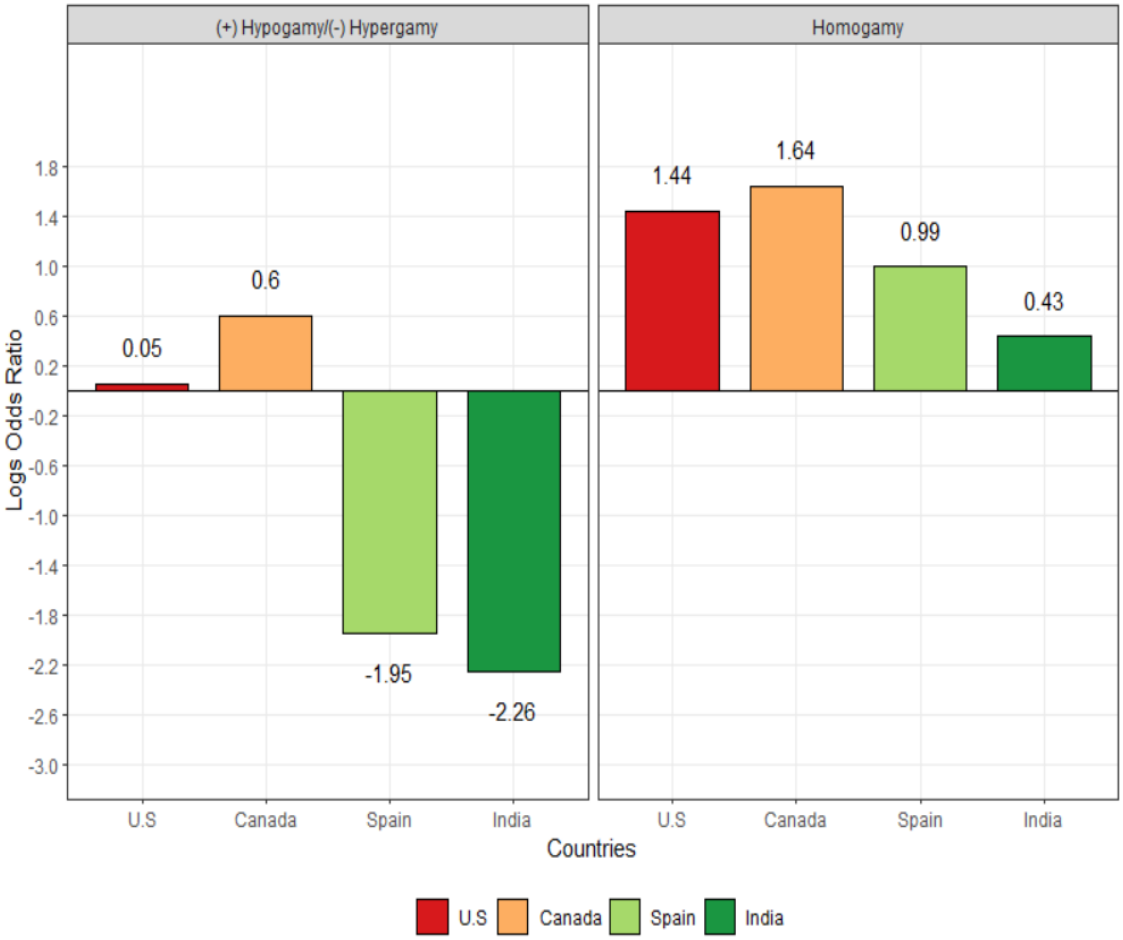
When we examine Indian immigrants in the USA, this pattern of hypergamy changes. The value is no longer negative, but positive, that is, there is a slight tendency for women to marry down and men to marry up. This analysis shows that in couple formation, it is more common to find couples in which the female partner has a higher education than her male partner. No hypergamous unions compared to Indians in India. In Canada, these effects are stronger, this signifies that there is a tendency to have hypogamic unions (where wife is more educated) among Indian immigrants in Canada. The model calculates the parameters and explains that there is a tendency to have more Indian couples in the US and Canada above the diagonal (when the values are positive) than below the diagonal.

The model shows different patterns of Indian couples in Spain compared to Indian couples in the USA and Canada because the trends of Indian immigration in Spain are different from those in the USA and Canada. Our descriptive analysis shows that the majority of Indian immigrants in the USA and Canada have high levels of education, while this is not the case for Indian immigrants in Spain. They tend to fall into the low educational attainment category. The educational profiles of Indian immigrants in Spain

are more similar to those in India. In Spain, the model shows that there is a tendency toward hypergamy (men are more educated and marry down). In India there is a strong tendency toward hypergamy, however, in Spain this pattern of hypergamy is not as strong as in India. In Canada, we see that hypergamy does not occur. Indian couples in Canada marry differently than in India and the same as in the USA.

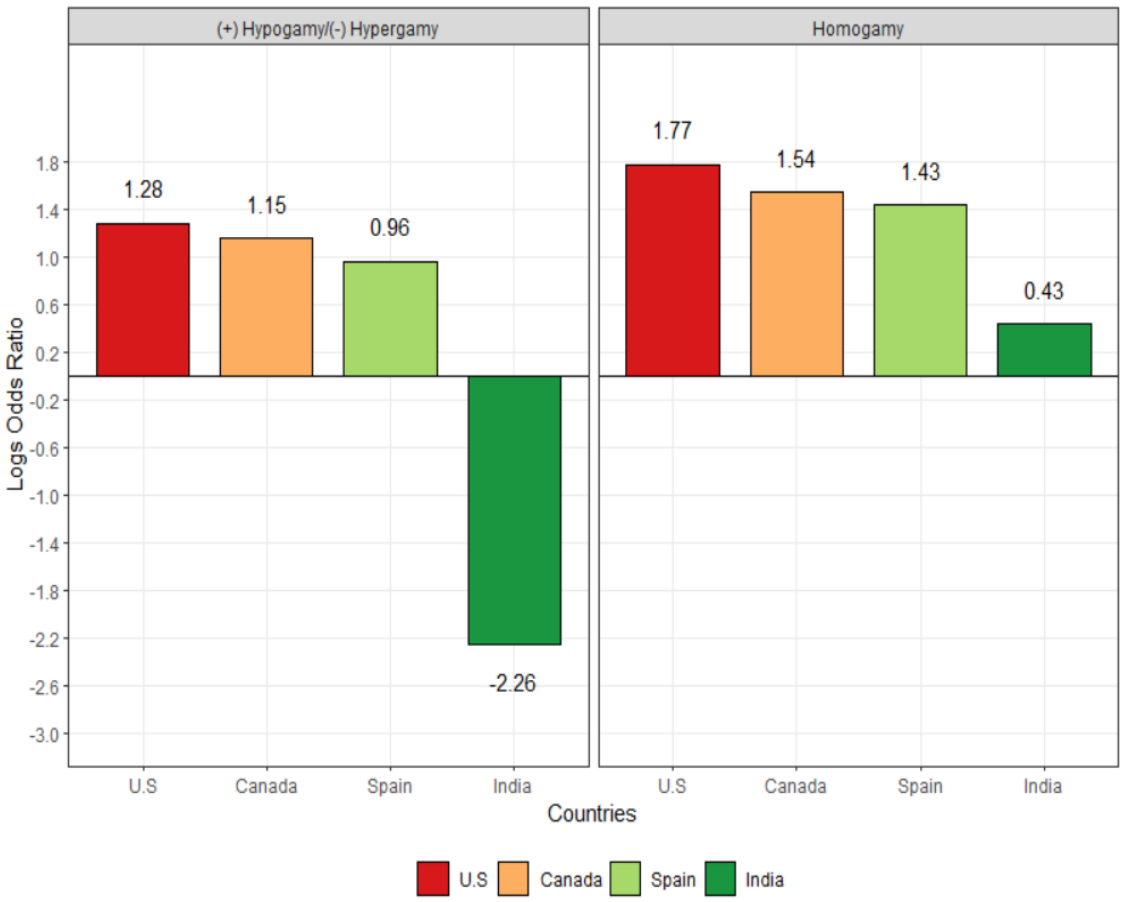
Figure 2.3 shows that there are homogamous unions among the native couples in the four countries (the USA, Canada, Spain and India). These positive values, or values above zero for homogamy indicate that couples tend to marry people with the same level of education, or in other words, that wives and husbands have equal educational levels. Similarly, Figure 2.3 shows positive values for hypogamy among native couples in the USA, Canada and Spain, indicating a tendency toward hypogamy among these couples: more women are married to men who have lower education than themselves. This tendency toward hypogamy is even higher among native couples in the USA, Canada and Spain than among Indian immigrant couples in the USA and Canada. The negative value of Indian couples in Figure 2.3 in hypergamy indicates a clear pattern of hypergamous unions (husbands have more education) among Indians in India, meaning that more men are married to women who have lower education than themselves and that they tend to marry down.

Figure 2.2: Educational Assortative Mating among Young Indian (30-39) Couples in the US, Canada, Spain and India



Source: Authors' own elaboration, with data from the IPUMS International.

Figure 2.3: Educational Assortative Mating among Young Native (30-39) Couples in the US, Canada, Spain and India



Source: Authors' own elaboration, with data from the IPUMS International.

2.6 Conclusion and Discussion:

The focus of this chapter was to examine whether Indian couples in destination countries exhibited the same patterns of assortative mating as in their own country. To analyse this, we compared the educational attainment of Indian couples in India in two contexts: first, with Indian immigrants in high-income countries, and second, with the

native populations of high-income countries (the USA, Canada, and Spain). We found different patterns of assortative mating among Indian immigrants in the USA and Canada compared to Indians in India. In India it was not common for men to marry up educationally and men tended to marry women with low levels of education and there was strong prevalence of hypergamous unions. In the USA, and Canada, on the other hand, we found no evidence of hypergamous unions among Indian immigrants and natives, but rather some evidence of hypogamous unions. In the USA, there was a positive trend toward hypogamy, which was even more pronounced in Canada. The tendency toward hypogamy was even higher among native couples in the USA, Canada, and Spain than among Indian immigrant couples in the USA and Canada. These results are consistent with the findings of previous research by Esteve et al., (2016) that there is a shift from male to female dominance in educational attainment and this dominance affects educational assortative mating patterns. Hypogamous unions among young Indian immigrants in the USA, and Canada, suggest that patterns of traditional educational hypergamy are changing to hypogamy. This may also suggest that Indian men in the USA, and Canada use their immigrant status as leverage to attract more educated women from India.

Possible explanation for these results could be that the young generation in India feels a strong urge to move abroad due to economic constraints such as the lack of employment opportunities and the highest number of educated unemployed youth. As a result, it can be possible that highly educated women in India are willing to marry less educated men abroad to find a better life. Indian men in destination countries, may be less educated themselves, but they understand the importance of education of their partners, as it leads to financial, and status improvement, and helps their future children to get better education. Therefore, they use their immigration status as leverage to attract more educated women from their home country.

However, this reversal of educational mating patterns that we have observed among young Indian immigrants in the USA and Canada was not found among young Indian immigrants in Spain. In Spain, there was a tendency toward hypergamy among Indian immigrants but not among natives. Young Indian immigrants showed a tendency towards the same assortative hypergamous mating patterns as Indians in India. Indian immigrants in Spain had different educational profiles compared to Indian immigrants in the USA, and Canada. The majority of young Indian couples in Spain were in the low education category, and a very small number of young Indians in the high education category. In contrast, the majority of young Indian couples in the USA and Canada had high educational attainment and very few were in the low and medium education categories. The educational profiles of Indians in Spain were similar to those of Indians in India, whereas this was not the case for Indians in the USA and Canada.

The differences in educational assortative mating patterns between Indians in the USA and Canada and Indians in Spain may be due to the smaller size of the Spanish sample, as there are few Indian immigrants in Spain compared to the other two countries. Spain is not an English-speaking country and it is likely that highly educated/skilled Indian professionals prefer to go to English-speaking destinations such as the USA or Canada[8]. Previous research has found that education and parental socioeconomic background are co-related (Li, Xu and, Xia, 2020; OECD, 2019). Thus, it could be that people with good socioeconomic backgrounds in India migrate to their preferred English-speaking destinations and individuals' socioeconomic backgrounds determine their immigration and settlement in destination countries. Only those who are wealthy go to their preferred English-Speaking destination countries to study, professional work, or business, since

[8] The U.S. and Canada are the favourite destinations of Indians (Pew Research Center, 2017).

Spain is not an English-speaking country, it can be difficult for educated professionals to settle there. As a result, Indians from low socioeconomic backgrounds and low levels of education (See Table 2.4) might go to Spain for more labor intensive jobs. Since Indian men in Spain had low levels of education and did not have highly skilled jobs, they might not be able to use their immigrant status as leverage. Highly skilled women in India may prefer to go to English-speaking countries where they can easily establish themselves professionally. In Spain, they may find it difficult to immerse themselves in the culture and find a job without learning the language. Future research in these areas could help to better understand these findings.

We are aware that our research may have limitations. We have a relatively smaller number of cases in the Spanish dataset because the size of the Indian community in Spain is much smaller than the size of the Indian community in the USA and Canada. It is plausible that this limitation may have influenced the results obtained from Spain. Despite the smaller number of cases in Spain, we saw patterns of educational hypergamy among Indian immigrants. These results were limited by the number of cases available, which reduces comparability. The new round of the census may shed more light on these issues. Another limitation that this research may have is that we do not know whether highly educated women from India who marry and move abroad with their less educated immigrant husbands become the primary breadwinners after marriage or whether they are dependent on their husbands- a future study could address this question.

Third Chapter:

Intergenerational Co-Residence Patterns among Indians: A Comparative Study of Patrilocality in India and Abroad (USA, UK, and Canada)

Abstract

This study examines the impact of demographic variables on post-marital co-residency patterns among the Indian population, both in India and abroad. Binary logistic regression analysis is used to explore the relationship between post-marital co-residence patterns and independent variables such as age, education level, and occupation. The sample includes Indians residing in India (2009), Indian immigrants, and ethnic Indians in the USA (2015), UK (2008 to 2012), and Canada (2011). By adopting a comparative approach and studying intergenerational social change, the objective is to determine the cultural norm in India and examine whether Indian immigrants abroad maintain their cultural norms, as well as observe patterns among second-generation Indians abroad. The results show that age and education level have a significant impact on patrilocality and matrilocality practices. Indians in India are 95.9% more likely to reside in patrilocal residences when highly educated, although the tendency of co-residing in patrilocal residence decreases as age increases in all studied groups. The results also suggest that first-generation Indian immigrants with higher levels of education and occupation are less likely to live in patrilocal residence. Instead exhibit a tendency to be in matrilocal residence. However, the second generation of ethnic Indians exhibit a higher tendency to be in patrilocal settings. These findings shed light on the cultural norms and practices of the Indian population both in India and abroad, providing a nuanced understanding of

Indian family dynamics. The findings also highlight the potential for education and economic empowerment to challenge traditional gender roles.

Keywords: Patrilocal residence, matrilocal residence, age, education, occupation, Indian immigrants, ethnic Indians.

3.1 Introduction

This chapter aims to investigate post-marital co-residence patterns among Indians in India, Indian immigrants, and ethnic Indian communities abroad, as well as to explore the influence of factors such as age, education, and occupation on these patterns. Post-marital residence patterns refer to the living arrangements of married couples after they have tied the knot (Ebenstein, 2014). These patterns can vary greatly across different cultures and societies. For example, in some societies, the tradition of the joint family system is prevalent, where the newlywed couple continues to live with their parents and other extended family members. In contrast, in other societies, couples typically move out and establish their own independent households.

There are also different types of post-marital residence patterns. Patrilocality refers to the practice where the wife moves in with the husband's family after marriage, while matrilocality is when the husband moves in with the wife's family. Neolocality refers to the practice where the couple establishes a new household independently of either set of parents. Moreover, in many western societies, people may choose to live together as partners without getting married at all. This marks a departure from traditional patterns where couples would get married first before moving in together.

The research questions that this chapter seeks to address are as follows:

1. What are the post-marital co-residence patterns among Indians in India, and how do factors such as education and occupation influence these patterns?
2. To what extent do Indian immigrants and individuals of Indian ethnicity living in host countries reproduce the original co-residence patterns observed in India?
3. To what extent do Indian communities abroad exhibit comparable rates of co-residence and gender symmetry in co-residence patterns to those documented in India?

To answer these questions, we will identify Indian-born immigrants, and individuals of Indian ethnicity who were born in host countries or are children of migrants living in host countries. We will compare their levels of co-residence to those documented in India, and consider the factors that may contribute to any similarities or differences.

The question may arise as to why we chose to study of patrilocality in India and among Indian immigrants. The answer is clear as patrilocality is a common practice in India, prevalent in many parts of the country and deeply ingrained in its culture for centuries. Moreover, India has a large population, being the first-most populous country in the world with over 1.3 billion people. Due to the prevalence of patrilocality in India, the large population size, the diversity of Indian immigrants, and the rich cultural history of India, studying patrilocality in this context can provide valuable insights into how cultural practices are maintained and adapted.

This chapter makes several contributions to the literature on Indian family dynamics and cultural norms. We provide a comparative analysis of intergenerational data from Indians living in different countries. Our analysis offers insights into the similarities and differences between Indian immigrants and ethnic Indians in host countries, shedding light on the ways in which cultural norms are transmitted across generations and adapted to

new contexts. To the best of our knowledge, this is the first study to undertake such a cross-cultural comparison, making it a valuable addition to the existing scholarship.

Patrilocal residence is a significant artifact of a patriarchal society, as it reinforces gender norms, perpetuates gender inequality and promotes male authority which can create complex power dynamics and relationships within the family (Ebenstein, 2014). In a patrilocal system, the wife moves in with the husband's family after marriage, thereby creating a hierarchical power structure where the husband and his family hold more power and control over the wife's life. This can lead to negative outcomes for women, such as limited mobility, restricted decision-making power, and reduced economic independence.

It is therefore essential to study the current patterns and changes in patrilocal residence among Indian communities in India and abroad. Such research can shed light on the prevalence and persistence of patriarchal structures which has negative outcomes on women's lives. Exploring the current patterns and changes in patrilocal residence, as well as the factors that influence these patterns, is valuable for promoting gender equality and women's empowerment.

The findings of this study provide insights into the persistence of patriarchal family structures in Indian society. The fact that more men than women continue to co-reside with their parents after marriage suggests that traditional cultural norms continue to shape family dynamics, despite the growing influence of education and economic empowerment.

However, this study also reveals that more educated and employed women exhibit a higher prevalence of matrilocality, indicating the potential for education and economic empowerment to challenge traditional gender roles and disrupt patriarchal family structures. This finding highlights the importance of promoting education and economic opportunities for women as a means of advancing gender equality and women's empowerment.

Finally, our study helps to understand that higher levels of education and employment are associated with a decreased likelihood of patrilocality. These findings have important implications for understanding the ways in which cultural norms evolve over time among immigrants.

3.2 Background

Patrilocality is a traditional but still persistent cultural practice where a married woman leaves her parental home and moves to her husband's home and live with his family. This practice is often associated with gender discrimination, which manifests in various forms of inequality and oppression faced by women. Women in patrilocal families have limited autonomy, decision-making power, and are subject to strict rules and norms set by their husband's family (Khalil and Mookerjee, 2019). Women are expected to take on the role of caregivers and child bearers, while men are privileged and entitled and frequently avoid domestic chores and responsibilities (Grogan, 2013) and young married women often occupy a lower status position at their in-law’s house (Kuehnast, 2004; Hunnicut, 2009).

This preference for sons is deep rooted in the culture of patrilocality (Sen, 1990). In a patrilocal society, sons are seen as carriers of the family lineage and responsible for the family's economic and financial needs (Clark, 2000). As a result, parents often invest more in the education and health of their sons, and daughters are viewed as liabilities without any benefits. This leads to a preference for sons, female infanticide, and femicides. Women in patrilocal societies endure oppression, abuse, and domestic violence, and are subject to long-term social and psychological consequences. The cycle of oppression often continues, as women who have internalized this oppression become oppressors themselves as mothers-in-law.

Previous research has shown that not only do political and social institutions influence economic development, but deep-rooted cultural institutions such as marriage customs and intergenerational inheritance norms (such as patrilocality) also negatively influence economic development along with other demographic and socioeconomic outcomes such as freedom of movement, participation in decision making and incidence of domestic abuse (Khalil and Mookerjee, 2019). Previous research has documented that patriarchal social structures are prevalent in India, where son preference and patrilocality are commonly practiced social norms. (Klasen and Wink 2002; Khalil and Mookerjee, 2019).

The cultural preference for sons and the practice of patrilocality are closely linked. In patrilocality, sons typically remain with their parents while daughters move out after marriage. Parents often favour having sons who can take care of them and provide them with security in their old age (Jayachandran, 2015). Since sons remain in the household, they are perceived as more valuable than daughters (Tracy, 2007; Clark, 2000). This is because parents who have sons may view them and their spouses as potential caregivers in their old age, while those with daughters may not have the same level of expectation or support, even from their own daughters (Jayachandran, 2015). As a result, sons are often privileged over daughters and this behaviour leads to gender-based discrimination against daughters (Ebenstein, 2014). This is the intergenerational inherited norm which people are passing on from one generation to another. In patrilocality, girls' families provide dowry (jewellery, home furniture, expensive clothes, electrical appliances, expensive gifts, etc.) to girls and to their in-laws even though it is illegal by law (Anderson, 2007; Jeffery and Jeffrey, 1997; Sharma, 1984; Srinivas, 1984; Kaur, 2007). In addition to verbal and physical harassment and denial of visits to their families, some brides have been subjected to extreme violence, including bride burning, when the brides' families are unable to meet

the demands for dowry by their in-laws (Jutla and Heimbach, 2004; Kaur and Byard, 2020; Rudd, 2001).

Previous research has shown that despite increasing education levels for women in India, families may prioritize marrying their daughters rather than focusing on their career prospects, unlike with their sons (Kohli, 2017; Saha, 2013). Traditional Indian mentality holds that parents should marry their adolescent daughters because they are considered "perishable commodities" who could dishonour their families if they do not marry (Lal, 2015). Additionally, some parents may believe that their daughters will not provide them with support in their old age because they will be expected to care for their in-laws with their husbands. As a result, women may suffer subordination and various forms of violence (physical, emotional, mental) after marriage due to their dependence on their husbands for all resources (Naved and Persson, 2005). They may be unable to return to their parents' home even if they face violence because their own families may not accept them after marriage.

To empower women and challenge traditional stereotypes, it is important for women to receive education and become financially independent before marriage (Biswas and Mukhopadhyay, 2018). Patrilocality is a key reason for women's dependence and subordination in societies where it is prevalent (Ebenstein, 2014). Previous research has found a positive association between education and neolocal residence (where couples live separately in their own home without parental involvement) (Gruijters and Ermisch, 2018). Specifically, traditional practices decline when women are more educated and economically independent and create critical thinking abilities in them (Stromquist, 2015).

Previous studies have highlighted the importance of considering cultural factors when studying co-residence patterns (Glick, Bean, and Van Hook, 1997; Mazurik,

Knudson, and Tanaka, 2020; Milan, 2016; Reyes, 2020). Mazurik et al., (2020) found that young adults with higher education in the United States and Canada are more likely to live independently, while Glick et al., (1997) and Milan, (2016) found that the opposite trend exists among immigrant groups, with more immigrants co-residing with their parents compared to natives. Co-residence patterns also vary among different immigrant groups, ethnic backgrounds, and countries, with immigrants from South Asian and West Asian countries more likely to co-reside with their parents than native Canadians (Milan, 2016; Landale et al., 2011). Immigrants are also more likely to co-reside with family members than non-immigrants because cultural norms and family ties are important factors in co-residence decisions, but economic circumstances such as poverty, and lack of affordable housing also play a role (Reyes, 2020; Van Hook and Glick, 2007).

Choi et al., (2020) studied co-residence patterns among families in the United States and found that adult married children are less likely to live near their parents than unmarried children. Stone, Berrington, and Falkingham, (2013) explored the determinants of living arrangements among young adults in the United Kingdom and found that various factors, such as education, employment, and partnership status, influence their decisions and education has become an increasingly important factor in recent years which can change the family dynamics. These studies have highlighted the significance of cultural norms and family ties in co-residence decisions, which can vary across ethnic groups and countries. However, an important question that arises is whether immigrants continue to practice patrilocality in their host countries. This could be an interesting area of research that has not been explored before.

Therefore, this chapter aims to specifically focus on patrilocality, which is a global indicator of female subordination and gender inequality. We will examine the patterns of post-marital co-residence among Indians in India, Indian immigrants, and ethnic Indians

living in Western host countries using IPUMS international data and UK Labor Force data. We want to explore whether Indians living in host countries where the social norm of patrilocality does not exist still practice traditional Indian patrilocality and the influence of education and occupation on these patterns.

3.3 Objective and Hypotheses

The objective of this chapter is twofold. First, we aim to investigate post-marital co-residence patterns among Indians in India, Indian immigrants, and ethnic Indian communities abroad. Second, we aim to explore the influence of factors such as age, education, and occupation on these patterns, as well as their relationship with patrilocality. By adopting a comparative approach and studying intergenerational social changes, our objective is to determine the cultural norm in India and examine whether Indian immigrants abroad maintain their cultural norms. We also aim to observe patterns among second-generation Indians abroad.

The hypotheses formulated for this study are:

1. In India, post-marital co-residence patterns often exhibit high levels of gender-based and family dynamics-driven asymmetry, with parents co-residing with their married sons but not with their married daughters. This may be due to cultural and social expectations may contribute to these gender-based asymmetries.
2. Among Indian immigrants abroad, post-marital co-residence patterns may be less asymmetric with respect to gender compared to Indians in India, but more asymmetric compared to the ethnic Indian community abroad. This may reflect the influence of host country norms and values, as well as the maintenance of traditional Indian cultural practices among immigrants.
3. Across the three groups studied, we hypothesize that women with high levels of education will be less likely to live in patrilocal households compared to those with

low levels of education. This may be because education is associated with greater economic independence and autonomy, which in turn may lead to more egalitarian post-marital co-residence patterns.

4. For all the three groups studied, we hypothesize that employed women will be less likely to live in patrilocal households compared to unemployed women. This may be because employment provides women with a source of income and social support outside the household, which in turn may reduce their dependence on their natal family and increase their bargaining power within the household.

3.4 Data and Methods

We used harmonized census microdata from IPUMS-International (www.ipums.org/international) for three countries: the United States (2015), Canada (2011), and India (2009), and United Kingdom labor force data (UKLFS) from 2008 to 2012. IPUMS-International provides census and survey data from around the world (Minnesota Population Center, 2019). To understand post-marital co-residency patterns with parents among Indian immigrants in India and abroad, we restricted the sample to married individuals aged 25 to 49 and used weighted number of cases. India was used as a control group to establish the cultural norm of co-residence after marriage, and a comparative approach was used to analyze intergenerational social changes, with a focus on the cultural norm of co-residency after marriage among Indians living abroad, such as in the UK, USA, and Canada.

In all three western countries (Canada, USA, and UK), we formed two groups: the first group consisted of Indians born in India but living in host countries, and the second group consisted of people who were born in host countries but have Indian ethnicity/Indian parents (second-generation Indians). Selecting the Indian ethnic group in the UKLFS data

was straightforward, thanks to the ethnicity variable in the dataset. However, in the IPUMS dataset, the ethnicity variable was absent, so we created an ethnicity variable (following the example of Khalil and Mookerjee, 2019) by using the language spoken at home/mother tongue and the host country as a country of birth.

For each person, we had access to the following information: age, sex, education level, occupation, presence of spouse, and presence of parents in the household. The presence of the married person's parents in the household was used to classify the household type as patrilocal or matrilocal. If the married couple lived with the husband's parents, the household was referred to as patrilocal, and if the married couple lived with the wife's parents, the household was referred to as matrilocal.

To examine post-marital residency patterns among married males and females, we created a dependent dummy variable. This variable was set to 1 if the parents were residing with the couple and 0 if they were not. The IPUMS datasets made it relatively easy to create this dependent dummy variable using the MOMLOC and POPLOC (mother's and father's location in the household) variables. However, it was somewhat challenging in the UKLFS data due to the absence of parental location variables. Therefore, we used the relationship to the head of household and its family members to create the dependent variable.

The resulting datasets contained 145.747 married individuals in India in 2009, 7.151 Indian immigrants in Canada in 2011, 11.789 in the USA in 2015, and 2.575 in the UK (2008 to 2012). Additionally, 340. 558, and 635 people were born in Canada, USA, and the UK, respectively, but had Indian ethnicity.

Our analysis consisted of a descriptive analysis, followed by a logistic regression analysis to compare cultural norms of patrilocality and matrilocality. We used selected

independent variables, including age (25-49 years), education level, and occupation, all treated as categorical variables, to make predictions about these cultural norms.

The age variable was divided into five-year groups ranging from 25 to 49 years (25-29, 30-34, 35-39, 40-44, 45-49), with "25-29" as the reference category. Education level was divided into three categories: "low", "medium", and "high", with "low" as the reference category. Occupation was divided into two categories: "yes-occupation" and "no-occupation", with "no-occupation" as the reference category. Individuals with an occupation were categorized as "yes-occupation" and those without an occupation as "no-occupation".

3.5 Results

The results of this study are presented in two sections. First, we conducted a descriptive analysis to understand the data and identify any trends or patterns. We presented the descriptive data through two figures and a corresponding table (see Table 3.1).

Table 3.1: Total percentages of married people co-residing with parents

	Males				Females			
	All	Low	Med	High	All	Low	Med	High
India	32.7	28.0	41.6	42.3	1.1	0.9	1.8	2.1
Canada_India	24.7	35.3	32.4	17.5	2.8	1.7	3.6	2.4
Canada_Ethnicity Indian	42.7	33.3	41.2	45.0	7.7	-	8.7	6.4
USA_India	8.6	11.8	29.4	6.2	4.8	6.7	10.2	3.9
USA_Ethnicity Indian	22.7	-	37.3	18.4	7.1	25.0	7.1	6.5
UK_India	3.6	3.3	8.3	2.8	0.7	0.7	0.8	0.6
UK_Indian ethincity	24.8	28.3	28.0	22.5	2.0	-	2.2	2.2

Source: Authors' own elaboration, with data from the IPUMS International and the UK labor force data.

Second, we performed a logistic regression analysis to examine the relationship between post-marital co-residency patterns and various independent variables, including age (grouped into five-year intervals from 25 to 49), education level (categorized as low, medium, or high), occupation (coded as 0 for non-working individuals and 1 for those in employment), and gender.

3.5.1 Descriptive Results

Figure 3.1 compares the intergenerational social change between married Indians in India and Indian abroad (first and second generation) based on their post-marital residency patterns. The figure presents the total percentage of men and women living in patrilocal or matrilocal households. Figure 3.2 examines the patterns of co-residence and how they vary with education level across four selected countries: India, Canada, USA, and UK.

Table 3.1 presents the descriptive data results for the percentage of men and women living in patrilocal and matrilocal households in different countries, including total Indian men and women living in these households, both in India and abroad, and their educational attainment levels, categorized as low, medium, and high percentages. Such as in the 2009 Indian dataset in India, where 32.7% of men lived in patrilocal households, and only 1.1% of women lived in matrilocal households. Similarly, among Indian immigrants in Canada, 24.7% of men lived in patrilocal households, while 2.8% of women lived in matrilocal households. Among ethnic Indians in Canada, 42.7% of men lived in patrilocal households, while 7.7% of women lived in matrilocal households.

Additionally, the data shows that among Indian immigrants in the USA, 8.6% of men lived in patrilocal households, while 4.8% of women lived in matrilocal households. Among ethnic Indians in the USA, 22.7% of men lived in patrilocal households, while

7.1% of women lived in matrilocal ones. Among Indian immigrants in the UK, 3.6% of men lived in patrilocal households, while 0.7% of women lived in matrilocal households. Similarly, among ethnic Indians in the UK, 24.8% of men lived in patrilocal households, while 2% of women lived in matrilocal ones. Overall, the data suggests that the percentage of men living in patrilocal households is generally higher than that of women, and the percentage of women living in matrilocal households is generally lower than that of men, across all studied groups and countries.

3.5.2 Logistic regression results:

We conducted a logistic regression analysis to predict patterns of post-marital co-residence among Indians both in India and abroad. The aim of the analysis was to examine the relationship between a binary outcome variable Y (where a value of 1 was assigned to individuals who co-reside with their parents after marriage and 0 to those who do not), and predictor variables, including age (ranging from 25 to 49 years), educational attainment, and occupation.

The descriptive data showed that there were more male cases in the sample, so the analysis was conducted separately for males and females to obtain accurate results. The objective was to identify which predictor variables, if any, significantly predicted the outcome of post-marital co-residence with parents.

A comparative approach was used, comparing different Indian populations living in India and abroad. Indian males and females from India served as the control group. The Indian population living abroad was further divided into two groups: the first one consisted of Indian immigrants who lived in host countries but were born in India, and the second group consisted of individuals born in host countries but of Indian ethnicity (or referred to as

second-generation Indian ethnics). The model does not establish causality, but it helps to compare results among the four groups while considering the same variables. If married individuals do not co-reside with their parents, the baseline parameter of the model, the intercept, would be close to zero.

3.5.2.1. Indians in India

Results of the logistic regression (Table 3.2) show a significant association between the predictor variables and the outcome in the case of both males and females in the Indian sample. Age, education, and occupation were found to be significant predictors of the outcome of patrilocality ($p < 0.001$) for Indian males and females in India, except for the female age group 30-34 ($p < 0.1$).

We analyzed the relationship between age and co-residing with parents after marriage among Indian men and women. The estimated coefficients for categorical age predictor were negative, indicating that as the age group increases, the odds of co-residing with parents after marriage decrease. The p-values for all coefficients were less than 0.05, indicating a significant relationship between age group and co-residence with parents. Overall, our findings suggest that older Indian males and females are less likely to co-reside with their parents after marriage.

The estimated coefficients for education were positive for both groups, indicating that as education level increases, so does the likelihood of co-residency. The p-value was less than 0.05 at a 95% confidence level, indicating a significant relationship. The highest positive coefficient was found for Indian men with high education, implying that they were 95.9% more likely to co-reside with parents than those with low education. Similar positive coefficients were found for Indian women with high and medium education. However, the

confidence intervals were wide, suggesting uncertainty in the estimates. Overall, our results suggest that Indian males and females with high and medium education are more likely to co-reside with their parents after marriage compared to those with low education.

We examined the relationship between occupation and co-residency with parents after marriage among Indian men and women Results showed that men with an occupation were less likely to co-reside with parents after marriage. Women with an occupation, on the other hand, were more likely to co-reside with parents after marriage. The estimates have wide confidence intervals, but overall, the findings suggest that occupation may have different effects on co-residency for males and females in India.

3.5.2.2. Indian Immigrants and Ethnic Indians in Canada

The logistic regression results (Table 3.3) for Indian immigrants and the Indian ethnic group in Canada show a significant relationship between post-marital co-residency patterns and several predictor variables. For Indian male immigrants in Canada, age categories 35-39 ($p < 0.05$) and 45-49 ($p < 0.01$), as well as high education ($p < 0.001$), were found to be significant predictors of co-residency with parents. For Indian female immigrants in Canada, the age variable was a significant predictor across all age categories ($p < 0.001$). Among males with Indian ethnicity in Canada, only the age category 40-44 ($p < 0.01$) was a significant predictor of co-residency with parents. For females with Indian ethnicity in Canada, the occupation variable ($p < 0.01$) was the only statistically significant predictor of post-marital co-residency with parents.

For Indian immigrant and Indian ethnic men and women in Canada, we have similar results as Indians in India, on average, as the age increases, the odds of staying with parents after marriage decreases compared to the reference category (25-29).

A logistic regression analysis of education among Indian immigrant males and females in Canada showed differing patterns. For males, higher education was associated with lower odds of co-residing with parents after marriage. The largest negative coefficient was found for those with high education. For females, higher education was associated with higher odds of co-residing with parents after marriage. The highest positive coefficients were found for those with medium and high education. However, there was significant uncertainty in these estimates. Overall, medium and high-educated Indian immigrant females are more likely to co-reside with parents after marriage, while the trend is the opposite for males.

The results of the logistic regression analysis of education as a categorical predictor among ethnic Indian males in Canada showed that the estimated coefficients for the medium education group were negative and the coefficients for the high education group were positive. This indicates that, on average, as the level of education increases, the odds of co-residing with parents after marriage decrease for those in the medium education group, but increase for those in the high education group among ethnic Indian males in Canada. It should be noted that the results for female ethnic Indian group in Canada were not reported as there were no cases of individuals who co-resided with their parents after marriage in the reference category (low education level).

The results of the logistic regression analysis for the occupation predictor among both men and women in Canada show that they are less likely to co-reside with their parents after marriage, compared to the reference group of individuals without an occupation.

3.5.2.3. Indian Immigrants and Ethnic Indians in the USA

Among Indian immigrant males in the USA (Table 3.4), age with all categories ($p < 0.01$), medium education ($p < 0.001$), and occupation ($p < 0.001$) were found to be

significant predictors of post-marital co-residency with parents. However, among female Indian immigrants in the USA, only high education ($p < 0.05$) and occupation ($p < 0.001$) were found to have a statistically significant impact. Additionally, among male ethnic Indians in the USA, only the logistic regression estimated coefficients for the age category 35-39 ($p < 0.05$) were significant predictors of the outcome. In contrast, among females of Indian ethnicity in the USA, the age category 30-34 ($p < 0.01$) and both education categories ($p < 0.1$) were significant predictors of patrilocality, with the rest being non-significant.

Among Indian immigrant men and women in the USA, individuals in all age groups were found to be less likely to reside with their parents after marriage, compared to the reference group of 25-29-year olds. For Ethnic Indian men in the USA, the findings showed that except for the age group of 30-34, all other age groups were less likely to reside with their parents after marriage, compared to the reference group of 25-29-year olds. However, the magnitude of these coefficients was relatively small. Similarly, for Ethnic Indian women in the USA, the results showed that individuals in all age groups were less likely to co-reside with their parents after marriage, as indicated by the negative coefficients. However, the magnitude of these coefficients, compared to the reference group of 25-29-year olds, was relatively low.

The results indicate that the impact of education on co-residence with parents after marriage varies between men and women. In the USA, men with a medium level of education were more likely to co-reside with their parents after marriage compared to those with low education, while those with high education were less likely to do so. On the other hand, among Indian immigrant women in the USA, those with medium education were more likely to co-reside with their parents after marriage compared to the reference group, while those with high education were less likely to do so. It is important to note that these results

were statistically significant at a 95% confidence level (p-value < 0.05), but the wide confidence intervals suggest some uncertainty in the estimates.

For all countries and groups, we used the low education category as the reference group for our logistic regression analysis. We did not report the analysis for ethnic Indian men in the USA as there were no cases in the low education category among those who co-resided with their parents after marriage. However, among medium and high-educated ethnic Indian women in the USA, the odds of co-residing with parents after marriage were higher, respectively, compared to the reference group of individuals with low education. As education level increases, the odds of co-residence with parents after marriage decrease.

The logistic regression analysis of the effect of occupation on co-residence with parents after marriage shows that Indian immigrant men in the USA with an occupation were less likely to co-reside with their parents after marriage, compared to the reference group of men without an occupation. In contrast, for female Indian immigrants in the USA, those with an occupation were more likely to co-reside with their parents after marriage, compared to the reference group of women without an occupation.

Since there were no cases in the "no occupation" reference category among ethnic Indian men in the USA who co-resided with their parents after marriage, the analysis is not reported for this group. Among ethnic Indian women in the USA, those with an occupation were less likely to co-reside with their parents after marriage, compared to the reference group of women without an occupation.

3.5.2.4. Indian Immigrants and Ethnic Indians in the UK

Among Indian male immigrants in the UK (Table 3.5), age categories 30-34 ($p < 0.01$), 35-39 ($p < 0.01$) and medium education ($p < 0.1$) were found to be significant predictors of co-residency with parents after marriage. However, only occupation ($p < 0.1$)

was found to be a statistically significant predictor among female Indian immigrants in the UK. Additionally, among male Indian ethnic groups in the UK, the logistic regression analysis found that age categories 25-29 to 40-44 ($p < 0.001$) and 45-49 ($p < 0.01$) were significant predictors of co-residency. Conversely, no independent variables were found to be statistically significant predictors among female Indian ethnic groups in the UK, as shown in Table 3.5.

The results of the logistic regression analysis of the effect of age on post-marital co-residency with parents among Indian immigrant and ethnic Indian men, the estimated coefficients for the age groups 30-34, 35-39, 40-44, and 45-49 were all negative. This indicates that individuals in all these age groups were less likely to reside with their parents after marriage, compared to the reference group (25-29 years old).

For Indian immigrant and ethnic Indian women in the UK, the results show positive coefficients for the age groups indicating that individuals in these age groups were more likely to reside with their parents after marriage, respectively, compared to the reference group (25-29 years old). However, the magnitude of effect is smaller than that of the male counterparts. There are no cases of women Indian immigrants in the UK, in the age groups of 35-39 and 40-44, who co-reside with their parents after marriage, therefore, these results are not reported.

The results of the logistic regression analysis of the categorical predictor education among Indian immigrant men in the UK indicated that the estimated coefficients for the categorical predictor education for medium education group were positive and for the high education group were negative. On the other hand, among Indian immigrant women in the UK the estimates coefficients for the categorical predictor for the medium and the high education were negative. This suggests that, on average, as the level of education increases,

the odds of a positive outcome (i.e., co-residing with parents after marriage) increases in medium educated Indian immigrant men, however, decreases in high educated group among Indian immigrant men and women and also in medium educated women.

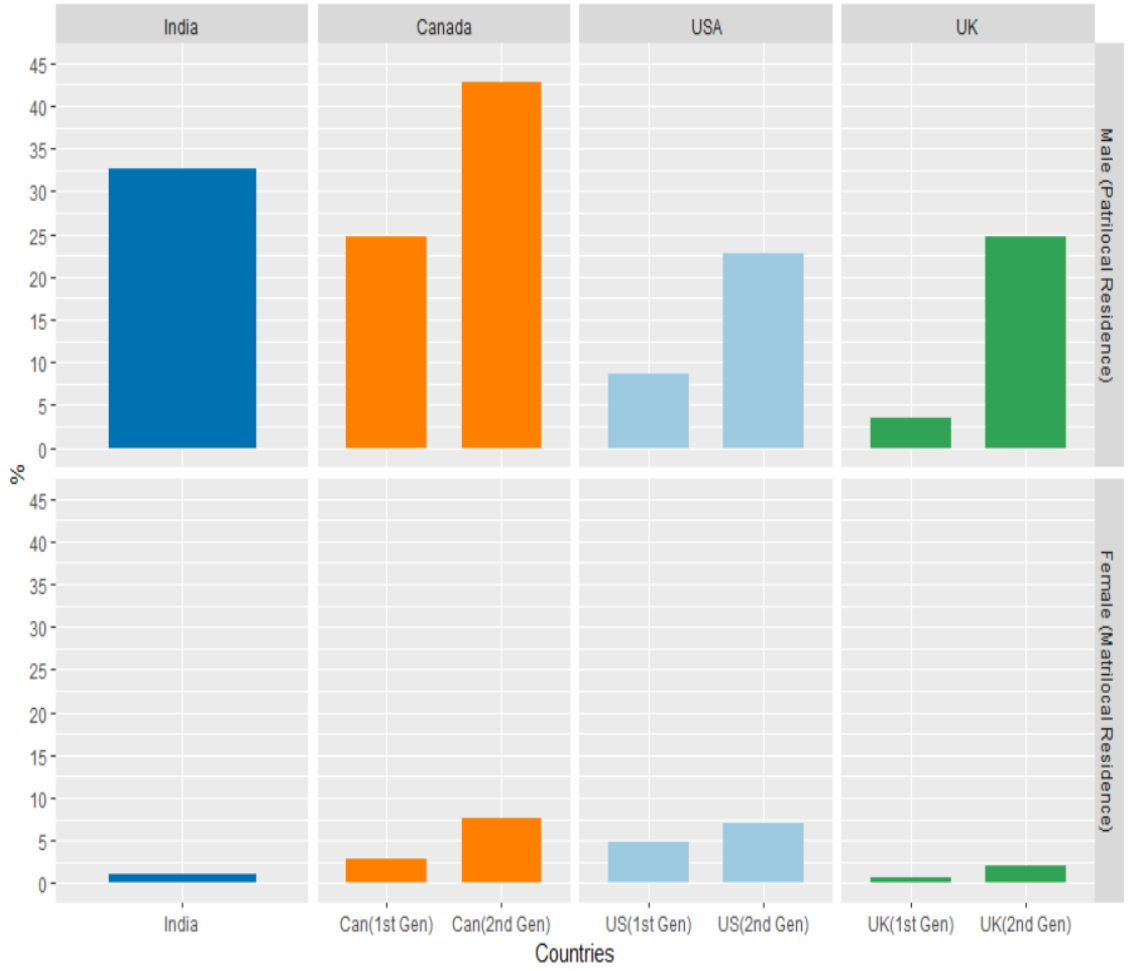
Among ethnic Indians a medium level of education was associated with an increased likelihood of co-residence with parents after marriage compared to those with a low level of education (the reference group). Conversely, Indian immigrant men with a high level of education in this group had a lower likelihood of co-residence with parents after compared to the reference group.

Among Indian ethnic women in the UK, a medium and high level of education were associated with a lower likelihood of co-residence with parents after marriage compared to the reference group (low education). However, the wide confidence intervals might suggest significant uncertainty in these estimates.

The results of the logistic regression analysis investigating the relationship between occupation and co-residency with parents after marriage among Indian immigrants in the UK indicate that the impact of occupation on co-residency varies between men and women Indian immigrants. Indian immigrant men with an occupation were less likely to co-reside with their parents after marriage compared to men Indian immigrants without an occupation. In contrast, Indian immigrant women with an occupation were more likely to co-reside with their parents after marriage compared to female Indian immigrants without an occupation.

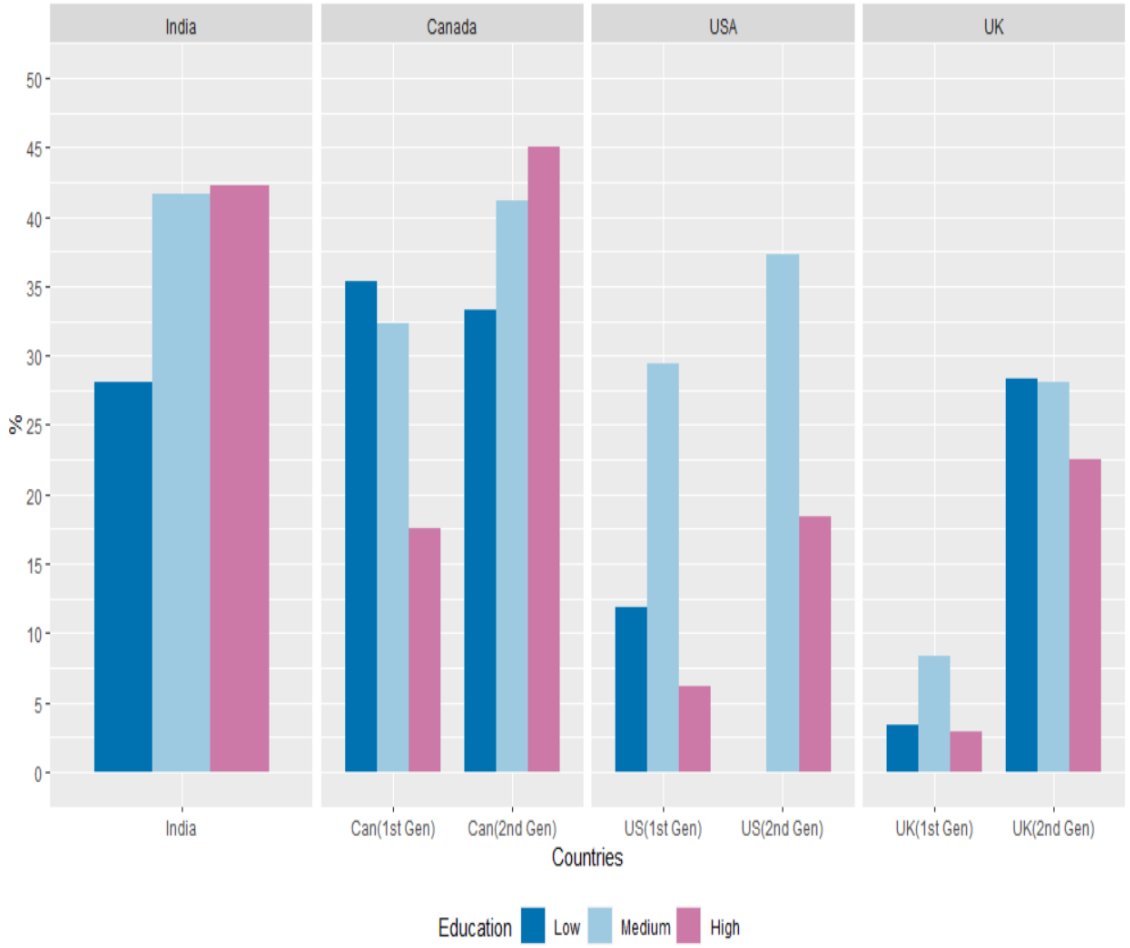
Ethnic Indian men and women in the UK with occupation were more likely to co-reside with their parents after marriage compared to those without occupation.

Figure 3.1: Percentages of Indian Male and Female in different countries Living in Patrilocal and Matrilocal Residence



Source: Authors' own elaboration, with data from the IPUMS International and the UK labor force data.

Figure 3.2: Percentage of Indian Males in Patrilocal Residence by Educational Level and Country of Residence



Source: Authors' own elaboration, with data from the IPUMS International and the UK labor force data.

Table 3.2: Logistic Regression Results: India for "Indians in India"

		Male				Female			
		Coefficient	SE	Odds Ratio	95% CI	Coefficient	SE	Odds Ratio	95% CI
	Intercept	0.204**	0.066	1.226	-	-4.635***	0.07	0.01	-
Age									
	25-29	ref	ref	ref	ref	ref	ref	ref	ref
	30-34	-0.427***	0.024	0.652	(0.62, 0.68)	-0.171^{+}	0.089	0.84	(0.70, 1.00)
	35-39	-0.907***	0.025	0.404	(0.38, 0.42)	-0.420***	0.097	0.66	(0.54, 0.79)
	40-44	-1.289***	0.027	0.275	(0.27, 0.26)	-1.097***	0.138	0.33	(0.25, 0.43)
	45-49	-1.723***	0.030	0.179	(0.17, 0.16)	-1.076***	0.148	0.34	(0.25, 0.45)
Edu_attain									
	Low	ref	ref	ref	ref	ref			
	Medium	0.576***	0.019	1.780	(1.78, 1.71)	0.739***	0.086	2.09	(1.76, 2.47)
	High	0.672***	0.027	1.959	(1.95, 1.85)	0.818***	0.110	2.27	(1.82, 2.81)
Occupation									
	No	ref	ref	ref		ref	ref	ref	ref
	Yes	-0.343***	0.064	0.710	(0.62, 0.80)	0.820***	0.072	2.27	(1.96, 2.61)

Note: ***p<0.001 **p<0.01 *p<0.05 $^{+}$p<0.1, SE = Standard Error and CI = Confidence Interval

Source: Authors' own elaboration, with data from the IPUMS International

Table 3.3: Logistic Regression Results: Canada for "Indians Immigrants" and "Ethnic Indians"

	Male								Female							
	India				EthnIndian				India				EthnIndian			
	Coefficient	S E	Odds Ratio	95% C I	Coefficient	S E	Odds Ratio	95% C I	Coefficient	S E	Odds Ratio	95% CI	Coefficient	S E	Odds Ratio	95% C I
Intercept	-0.251	0.239	0.778	-	-0.873	1.223	0.418	-	-3.008***	0.46	0.049	-	-19.880	16202.17	0.00	-
Age																
25-29	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
30-34	-0.184	0.151	0.832	(0.61, 1.12)	-0.411	0.391	0.663	(0.30, 1.42)	-0.660**	0.252	0.517	(0.31, 0.84)	-0.982	0.818	0.374	(0.07, 1.86)
35-39	-0.321*	0.148	0.726	(0.54, 0.97)	-0.499	0.458	0.607	(0.24, 1.49)	-1.262***	0.289	0.283	(0.16, 0.49)	-0.494	0.817	0.61	(0.12, 3.02)
40-44	-0.236	0.144	0.79	(0.59, 1.04)	-1.997**	0.718	0.136	(0.03, 0.55)	-1.822***	0.354	0.162	(0.08, 0.32)	0.204	0.973	1.227	(0.18, 8.26)
45-49	-0.500**	0.163	0.607	(0.44, 0.83)	-21.372	29647.06	0.000	(< 0.001, N/A)	-1.425***	0.386	0.240	(0.11, 0.51)	-19.924	28568.70	0.00	(< 0.001, N/A)
Edu_attain																
Low	ref		ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Medium	-0.165	0.13	0.848	(0.65, 1.09)	-0.475	0.975	1.609	(0.23, 10.87)	0.578	0.429	1.782	(0.76, 4.13)	19.127	16202.17	202623988.42	(< 0.001, N/A)
High	-0.962***	0.131	0.382	(0.29, 0.49)	0.628	0.979	1.874	(0.27, 12.76)	0.109	0.431	1.115	(0.47, 2.59)	19.235	16202.17	225814621.99	(< 0.001, N/A)
Occupation																
No	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Yes	-0.072	0.193	0.931	(0.63, 1.35)	-0.873	0.775	1.761	(0.38, 8.03)	0.101	0.241	1.106	(0.68, 1.77)	-1.827**	0.696	0.161	(0.041-0.630)

Note: ***p<0.001 **p<0.01 *p<0.05 $^{+}$p<0.1, SE = Standard Error and CI = Confidence Interval

Source: Authors' own elaboration, with data from the IPUMS International and the UK labor force data.

Table 3.4: Logistic Regression Results: USA for "Indians Immigrants" and "Ethnic Indians"

	Male								Female							
	India				EthnIndian				India				EthnIndian			
	Coefficient	S E	Odds Ratio	95% C I	Coefficient	S E	Odds Ratio	95% C I	Coefficient	S E	Odds Ratio	95% C I	Coefficient	S E	Odds Ratio	95% C I
Intercept	-0.529	0.381	0.589	-	-20.018	46290.83	0.000	-	-3225***	0.361	0.040	-	0.152	1.038	1.164	-
Age																
25-29	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
30-34	-0.339*	0.166	0.712	(0.51, 0.98)	0.363	0.443	1.438	(0.60, 3.42)	0.095	0.194	1.100	(0.75, 1.60)	-1.820**	0.754	0.162	(0.03, 0.71)
35-39	-0.529**	0.173	0.589	(0.42, 0.82)	-1.185*	0.557	0.306	(0.10, 0.91)	-0.150	0.203	0.861	(0.57, 1.28)	-1.036	0.627	0.355	(0.10, 1.21)
40-44	-0.559**	0.168	0.572	(0.41, 0.79)	-0.336	0.488	0.714	(0.27, 1.86)	0.027	0.202	1.027	(0.69, 1.52)	-0.924	0.650	0.397	(0.11, 1.42)
45-49	-0.537**	0.195	0.584	(0.39, 0.85)	-0.794	0.874	0.452	(0.08, 2.50)	0.081	0.231	1.084	(0.68, 1.70)	-0.649	0.881	0.523	(0.09, 2.94)
Edu_attain																
Low	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Medium	1.289***	0.345	3.629	(1.84, 7.13)	20.887	25083.80	1177953899.81	(< 0.001, N/A)	0.323	0.332	1.382	(0.72, 2.64)	-1.859^{+}	1.044	0.156	(0.02, 1.20)
High	-0.498	0.339	0.608	(0.31, 1.18)	20.082	25083.80	526409684.45	(< 0.001, N/A)	-0.752*	0.320	0.471	(0.25, 0.88)	-1.632^{+}	0.919	0.196	(0.03, 1.18)
Occupation																
No	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Yes	-1.285***	0.231	0.277	(0.17, 0.43)	-1.279	52650.14	0.278	(< 0.001, N/A)	0.986***	0.166	2.682	(1.93, 3.71)	-0.399	0.599	0.671	(0.20, 2.16)

Note: ***p<0.001 **p<0.01 *p<0.05 $^{+}$p<0.1, SE = Standard Error and CI = Confidence Interval

Source: Authors' own elaboration, with data from the IPUMS International and the UK labor force data.

Table 3.5: Logistic Regression Results: UK for "Indians Immigrants" and "Ethnic Indians"

	Male								Female							
	India				EthnIndian				India				EthnIndian			
	Coefficient	S E	Odds Ratio	95% C I	Coefficient	S E	Odds Ratio	95% C I	Coefficient	S E	Odds Ratio	95% C I	Coefficient	S E	Odds Ratio	95% C I
Intercept	-2.654***	0.633	0.070	-	0.841	0.657	2.320	-	-6.827***	1.462	0.001	-	-20.726	7647.52	0.000	-
Age																
25-29	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
30-34	-1.568**	0.573	0.208	(0.06, 0.64)	-1.699***	0.416	0.183	(0.08, 0.41)	1.421	1.076	4.139	(0.50, 34.10)	0.738	0.958	2.092	(0.32, 13.67)
35-39	-1.090*	0.518	0.336	(0.12, 0.92)	-1.946***	0.421	0.143	(0.06, 0.32)	-15698	2284.58	0.000	(< 0.001, N/A)	-0.825	1.399	0.438	(0.02, 6.79)
40-44	-0.422	0.500	0.655	(0.24, 1.74)	-2.350***	0.477	0.095	(0.03, 0.24)	-15.813	2987.20	0.000	(< 0.001, N/A)	-17.293	4965.341	0.000	(< 0.001, N/A)
45-49	-0.109	0.470	0.897	(0.35, 2.25)	-2.590**	0.848	0.075	(0.01, 0.39)	0.852	1.204	2.345	(0.22, 24.84)	-17.337	12232.25	0.000	(< 0.001, N/A)
Edu_attain																
Low	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Medium	0.768^{+}	0.436	2.156	(0.91, 5.06)	0.048	0.522	1.049	(0.37, 2.92)	-0.042	1.155	0.959	(0.10, 9.21)	17.044	7647.52	25240933.07	(< 0.001, N/A)
High	-0.026	0.367	0.974	(0.47, 2.00)	-0.476	0.513	0.621	(0.22, 1.69)	-0.507	0.719	0.603	(0.14, 2.46)	17.031	7647.52	24915396.76	(< 0.001, N/A)
Occupation																
No	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref	ref
Yes	-0.091	0.551	0.913	(0.31, 2.68)	-0.051	0.498	0.951	(0.35, 2.52)	1.958^{+}	1.179	7.088	(0.70, 71.49)	-0.060	1.041	0.941	(0.12, 7.23)

Note: ***p<0.001 **p<0.01 *p<0.05 $^{+}$p<0.1, SE = Standard Error and CI = Confidence Interval

Source: Authors' own elaboration, with data from the IPUMS International and the UK labor force data.

3.5 Conclusion and Discussion

This chapter aimed to examine the co-residence patterns of Indians in India, Indian immigrants, and second-generation ethnic Indians in the USA, UK, and Canada. It sought to understand whether immigration to host countries changes the practice of patrilocality among Indians abroad, and how cultural, economic, and educational factors influence these patterns. The study's findings indicated that men in all three groups were more likely to co-reside with their parents and spouses than women, suggesting significant gender differences. These findings offered insights into the persistence of patriarchal family structures in Indian society. The fact that more men than women continued to co-reside with their parents after marriage suggested that traditional cultural norms continued to shape family dynamics, despite the growing influence of education and economic empowerment. Gender differences were always presented in this study, regardless of the groups examined, and when age, education, and occupation were controlled for, these differences and the level of intensity remained robust because they reflected deeper underlying patterns in the data.

Our findings suggested that as age increased within all the studied groups, the practice of patrilocality decreased. Treas and Mazumdar (2002) explained in their study that a possible reason for this is that individuals become financially independent and can afford their own residence. Another theory is that over time, conflicts may arise between young couples and their parents, leading to a separation of the household between the couple and their parents. Furthermore, in a medium-mortality country like India, the likelihood of parental death increases with age. There were fewer Indian male immigrants living in patrilocal households in the USA and UK, possibly because the immigration process for parents was not as straightforward compared to Canada.

Normally, it could be expected that higher education is associated with lower patrilocality, but this was not the case among Indians in India, as highly and medium-educated men were more likely to live in patrilocal households. However, among Indian immigrant males, higher levels of education were associated with a lower likelihood of co-residing with parents after marriage. It could be possible that their parents had not migrated to the destination country yet. On the other hand, for Indian immigrant females, higher levels of education were associated with a higher likelihood of co-residing with parents after marriage.

Interestingly, educated and employed women were less likely to live in patrilocal households in both India and among Indian immigrants. Additionally, among Indian immigrants and those born abroad, more educated and employed women were more likely to practice matrilocality. This suggests that education and economic empowerment have the potential to challenge traditional gender roles and disrupt patriarchal family structures, as more educated and employed women exhibited a higher prevalence of matrilocality. These findings underscore the importance of promoting education and economic opportunities for women as a means of advancing gender equality and women's empowerment.

Overall, the findings suggested that understanding the relationship between cultural norms and demographic factors was crucial, and these relationships were complex and nuanced. More educated and employed Indian immigrants, as well as ethnic Indian women, exhibited a higher prevalence of matrilocality, indicating that education and economic empowerment played a role when they migrated or were born abroad. In contrast, individuals without occupations might be more likely to exhibit patrilocality, which could be due to a lack of economic opportunities or exposure to different cultural norms and values in their occupational settings.

The study's most surprising finding was the lower levels of co-residence among Indian ethnic born men in the UK, USA, and Canada compared to those observed in India. This trend showed a negative gradient where highly educated men were less likely to co-reside with their parents. However, it is worth noting that ethnic Indian men in the UK with medium education were more likely to stay in patrilocal households. These findings suggested that Indian ethnic groups adopted prevalent cultural norms in their destination countries. Conversely, the odds of residing in matrilocal households among ethnic Indian women in the destination countries were higher than those in India. Perhaps higher levels of education and employment opportunities might allow them choose to live in matrilocal residence patterns in destination countries.

Finally, we found that higher levels of education and employment were associated with a decreased likelihood of patrilocality, indicating that education and economic empowerment can serve as catalysts for change. These findings suggested potential implications for understanding the ways in which cultural norms evolved over time, particularly in the context of immigration. As individuals and families navigate new cultural environments, exposure to new ideas and perspectives can challenge traditional norms and values. By understanding the factors that contribute to the evolution of cultural norms, we can design more effective interventions and promote gender equity.

Given that India's family structure is often patriarchal, with the male head of the family holding a dominant role, cultural norms may prioritize the needs of sons over daughters. Gender roles are often strongly defined in Indian society, with women traditionally taking on the role of homemakers and caregivers, while men are expected to provide for their families. Overall, these cultural and social factors may contribute to the gender-based asymmetries observed in post-marital co-residence patterns in India.

This study offers insights into family structure dynamics in India, with implications for social welfare and family support policies. However, the study has limitations, such as potential selection bias and reliance on cross-sectional data. Further research is necessary to confirm and expand the findings, exploring underlying reasons for co-residence pattern differences by gender and education. Research on patrilocal residence can inform interventions promoting gender equality and women's rights, and policymakers can design more effective interventions by understanding challenges and opportunities in shifting from patrilocal to other patterns. Understanding the complex interplay between cultural norms, gender, and socioeconomic status is critical for promoting gender equity and addressing challenges faced by women. Economic empowerment and education can challenge traditional gender roles, and effective interventions can support women's empowerment and promote gender equality. Moreover, establishing a truly causal mechanism in this chapter was challenging; however, conducting a future study using experimental or quasi-experimental research designs can provide better insights.

Overall Conclusions

This dissertation presented a comparative analysis of whether Indians who migrated to host countries (USA, Canada, Spain, and UK) adhered to traditional gender roles and cultural practices from their home country, such as son preference, educational assortative mating patterns, and co-residence patterns (specifically patrilocal and matrilocal arrangements), or whether they adopted other cultural practices similar to those of native residents of host countries. The purpose of this dissertation was to compare the three traditional cultural practices prevalent in Indian society that previous research has found can lead to gender discrimination against women (Dyson and Moore, 1983; Das Gupta, 1987; Jeffery, Jeffery and Lyon, 1989; Sen, 1990; Mason, 1995; Clark, 2000; Allandorf, 2013; Aparna Mitra, 2014; Seema Devi, 2016).

This research aimed to provide nuanced insights into the ways in which Indian immigrants negotiated and reconciled cultural practices and gender roles in the context of migration, taking into account the moderating factor of educational attainment. The analysis was based on quantitative analyses of secondary data from IPUMS International and UKLFS. This dissertation consisted of three chapters, the conclusions of which are described below.

The first chapter of this dissertation examined son preference (a cultural phenomenon in which parents prefer a son to a daughter) among Indian immigrants in the USA, Canada and Spain. The measurement of son preference in this chapter was based on the sex ratio of males to females among Indian immigrant children ages 0 to 15. Indian immigrants with low education levels showed a higher son preference in all three countries, and the prevalence of son preference differed by education level and country. Education was a moderating variable in this study, with higher levels of education being

associated with more balanced sex ratios. The results indicated that the sex ratios in Spain were significantly more skewed compared to those in the USA and Canada. The impact of endogamy on the sex ratios also varied across countries. The results showed that Indian immigrants in destination countries tended to maintain their cultural norms when they had low levels of education. From this, I can conclude that education influences the preference for sons. However, it should be noted that this conclusion did not reflect generalized patterns. Nonetheless, the consequences of son preference may indeed be significant.

Some of these consequences may include gender imbalance and discrimination against girls in such households, as boys receive more attention, education, and opportunities while girls are often neglected. This can lead to fewer educational and employment opportunities for girls, which can have a long-term impact on their socioeconomic status. In extreme cases, preference for sons can lead to infanticide, where female babies are aborted or killed at birth because of the desire to have a male child. On the other hand, sons may face significant pressure to succeed and meet their parents' expectations, which can lead to psychological problems, stress, and anxiety. Conversely, if son preference is not widespread among highly educated Indian immigrants, the above effects may be less severe.

Education plays a critical role in changing cultural attitudes about gender. It serves as a means of raising awareness of the importance of gender equality and the negative consequences associated with son preference, thus enabling a change in societal views. Empowering girls through education and creating opportunities for them can have a positive impact on society's attitudes toward gender and significantly reduce discrimination against girls. Public campaigns and education programs can help raise awareness of the negative consequences of son preference and promote gender equality. Supporting families

can help reduce the economic pressures that can lead to son preference. This can include financial support, access to health care, and educational opportunities.

The second chapter of this dissertation examined whether patterns of educational assortative mating among Indian couples in destination countries were similar to those in India and to those of natives in host countries. It also investigated whether male Indian immigrants in host countries used their immigrant status as leverage to attract highly educated partners from their home country when they arrived earlier than their spouses. The results showed different patterns of assortative mating among Indian immigrants in the USA and Canada compared to Indians in India. Indian immigrants in the USA and Canada tended to engage in hypogamous unions, while those in Spain exhibited hypergamy (similar to Indians in India), possibly due to variations in sample size and educational profile of immigrants. These differences suggested variations in cultural values, access to education, and opportunities in the receiving countries. Compared to Indian immigrant couples in the USA and Canada, native couples in the USA, Canada, and Spain showed a higher inclination toward hypogamy.

Despite rising levels of female education in India, there is no clear link between higher levels of education and improved employment opportunities or economic prospects for women (Chatterjee et al., 2018). Even with the increase in women's education, financial dependence, and employment opportunities, hypergamous marriages still prevail in India (Lin, Desai, and Chen, 2020). Moreover, women in India often continue to face subordinate roles despite their educational achievements, which may be one reason why highly educated women choose to marry less educated men when living abroad due to financial constraints. Indian men in these countries may also leverage their immigration status to attract more highly educated women from India. The lure of a better life abroad may also be a possible explanation for this phenomenon. Future research could examine

the role of these women in the postimmigration labor market or how they balance housework with other responsibilities. Overall, the findings in this chapter showed that patterns of educational assortative mating among Indian immigrants in different countries might be influenced by a variety of factors, including economic constraints and cultural values. Finally, further research could examine the long-term effects of these patterns of assortative mating on social and economic outcomes among Indian immigrants and their offspring.

The third chapter of this dissertation examined patterns of co-residence among the Indian diaspora in the UK, USA, and Canada, as well as among those living in India. The study aimed to understand gender differences in co-residence patterns and the influence of education and economic empowerment on family dynamics. The study showed that in all groups studied, the proportion of men co-residing with their parents and wives was higher than the proportion of women. This suggested that patriarchal family structures persisted among Indians both in India and abroad, despite the growing influence of education and economic empowerment. Additionally, demographic variables such as age, gender, and education had a significant impact on co-residency patterns among the Indian population. However, as age increased, the practice of patrilocality decreased. Education and employment were associated with a lower likelihood of patrilocality.

Furthermore, this study showed that educated and employed women in Indian immigrant communities and ethnic Indian communities were more likely to practice matrilocality, highlighting the potential for cultural change in family dynamics among highly educated and empowered women. Overall, the results suggested that while patriarchal family structures persisted in Indian society, education and economic empowerment could serve as a catalyst for change. Highly educated and economically independent women were more likely to challenge traditional gender roles and family

structures. These findings have important implications for policymakers and social programs to promote gender equality and address the challenges women face in different cultural contexts. Further research is needed to examine the reasons for and consequences of observed differences in co-residence patterns by gender and education.

The three chapters of this dissertation shed light on the impact of immigration on Indian families in various parts of the world. The central question of this dissertation was why some Indian cultural norms were retained by Indian immigrants living abroad while others were not. To answer this question, this dissertation analyzed the educational attainment of individuals abroad, which is a key factor in eliminating traditional cultural practices and gender norms that may lead to gender imbalance among Indian immigrants and ethnic Indians abroad.

The results of this analysis showed that there was no evidence of son preference or patrilocality among educated immigrants. Instead, educated and employed women tended to practice matrilocality. As we know, women are often exposed to domestic, emotional, and financial violence due to patrilocality. Thus, the findings suggested that education is an important factor in promoting gender equality and empowering women in Indian immigrant families abroad.

While several studies had examined the independent variables of interest among Indians in India, to my knowledge, there was no research comparing these variables among Indian immigrants and ethnic Indians abroad with the host country natives, including education as a determinant factor. It is important to note that these practices are interrelated and influence each other. This is because both son preference and patrilocality contribute to gender-based discrimination against women and reinforce traditional gender roles. In patrilocal societies, women may have limited autonomy and decision-making power, which can make it difficult for them to challenge or change gender-based discrimination.

Son preference can also reinforce the idea that women are less valuable than men and perpetuate harmful practices such as sex-selective abortion or the neglect of female children. Studying son preference practices and patrilocal residence patterns among immigrants can improve our understanding of how cultural practices and gender dynamics are impacted by immigration and how they evolve over time. This knowledge can inform policies and interventions that promote integration and gender equality and prevent harmful practices. Promoting girls' education and empowerment can help reduce son preference, while policies that prohibit sex-selective abortions can prevent such practices. In addition, through education and employment, women can become self-reliant and avoid the negative consequences of living in patrilocal residences.

Educational levels could explain differences in son preference among Indian immigrants in different countries, with language-related factors, pre-existing differences, and segmented assimilation all potentially playing a role. This research acknowledges limitations, such as the smaller sample size in Spain and the lack of information on the socioeconomic background of Indian immigrants. Future research in this area could shed more light on these findings and help to better understand the conditions for women in patrilocal residences and financial circumstances, as well as who the decision-makers are in these households among Indian couples in destination countries.

Moreover, this dissertation highlights the significance of promoting education and economic opportunities for women to advance gender equality and empower women. The issue of son preference and patrilocality practices in India is closely related to the alarming statistics of the National Crime Record Bureau (NCRB) for the year 2020, which show that 19 women are killed every day in India due to dowry crimes. This shocking data shows that approximately one dowry-related death occurs every 86 minutes in India. The NCRB report also shows an upward trend in crimes against women, with a significant proportion

of these cases falling into the category of "cruelty by a spouse or their relative". Understanding the factors that contribute to the development of cultural norms can support the development of effective policies to promote gender equality and support the empowerment of migrant women in the host country. It is important to recognise that the phenomenon of patrilocality is primarily responsible for women's subordination and discrimination (Lerner, 1986).

Finally, this research has important implications for social welfare and family support policies, particularly in India. However, further research is needed to confirm and extend these findings and to identify the underlying mechanisms driving these patterns and practices. Ultimately, a more nuanced understanding of co-residence patterns can inform policy interventions and development programs to promote gender equality and women's rights both in India and in Indian diaspora communities around the world. This dissertation is consistent with Gerda Lerner's perspective, which emphasizes the need for a radical restructuring of thinking and analysis. Lerner, (1986) emphasizes the importance of recognizing the equal contributions of men and women and ensuring that both genders are represented in any generalization of human beings. Therefore, it is necessary to unlearn the lessons of patriarchy and combat the widespread myth that women are less important, valuable, or capable than men. This myth has had a profound effect on both genders.

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