Essays on Socio-Economic Integration of Migrants in the UK Labour Market: Access (or Lack of Access) to the Professional Class, Gendering of Occupations and Earning Trajectories

Nephat Shumba

A Thesis submitted for the degree of Doctor of Philosophy in Empirical Sociology

Department of Sociology

University of Essex

Date: 20/10/2015

DECLARATION

No part of this thesis has been submitted for a university degree. All research in this thesis is mine alone.

The research was jointly supervised by Professor Nick Allum and Professor Ewa Morawska.

ACKNOWLEDGEMENTS

First and fore most I would like to express my candid gratitude to my two supervisors, Professor Nick Allum and Professor Ewa Morawska, for their enthusiasm and attention in directing my PhD thesis throughout its various stages. Thank you! God bless you and your families without measure.

To my friends and colleagues at the Institute for Social and Economic Research (ISER), thank you for your unwavering technical and statistical support. To the University of Essex, Department of Sociology staff as well as the Learning and Development Centre staff, thank you for creating opportunities in pedagogy and training alongside my PhD study.

Profound thanks of mine go to my PhD colleagues and peers, in particular Susana, Richard, Den, Vasiliy, Xiaoyang, Handy, Rebecca, Jacob, Anna, Paula, Francesca, Gulzart, Vincent, Tiffany, Dennis, Sait, and William (just to mention a few), for their intellectual dialogues, erudite ideas, challenges and friendships. To my two children, Camomile Paidamoyo and Nickolas Eldrich, thank you for your amazing patience, grace and love for me during my PhD studies. To my supportive nephews: Tafadzwa, Stanley, Paula, Michaela, Takudzwa, Tinashe, Patience, Kudzanai and Biggie in different countries and my cousins in Colchester Charles, Revesai, Mufadzi and Mufaro for their unstinting support. Without your generous and limitless love, without your willingness to sacrifice family time, I could never hope to finish this PhD thesis. To Dr. Susana Cabaço, thank you for your sincere, incisive and generous proof reading and editorial insights of the final thesis.

It is to my parents, in particular, my mother Maina, my siblings Edith, Sindisiwe, Collen and Noel and my deceased father, Nickos and five siblings:Nelson; Collet; Fancent; Nelliah and Nancy that I owe the deepest gratefulness and to whom I dedicate this PhD thesis.

Contents

List of Tables

Paper 1: Access (or Lack of Access) to the Professional Class in the UK Labour Market: A Case Study of migrants and UK–born white

Paper Two: Gendered Occupations and Earnings: a Comparative Study of migrants and UK–born White in the UK Labour Market

Paper 3: A Longitudinal Analysis of Occupational transitions and Wage trajectories: Drawing insights from immigrant (‘old’ and ‘new’) and UK–born White in the UK Labour Market

List of Figures

Paper2: Gendered Occupations and Earnings: A Comparative Study of migrants and UK–born White in the UK Labour Market

ABSTRACT

This thesis investigates socio-economic integration of men and women immigrants ('Old' and 'New') relative to United Kingdom (UK) born White in the UK labour market. In order to assess my research hypotheses I use both cross-sectional and panel data based on the world's largest panel survey: UK Household Longitudinal Study (UKHLS), (data collected between 2009 and 2014).

The first two essays are cross-sectional studies examining access (or lack of access) to the professional class and pay asymmetry of these groups, while, the third paper, uses the full potential attributes of a 'strict balanced' panel to investigate occupational status transitions and earning trajectories using a more refined parsimonious random effects model approach. The main findings show that the labour market performance of immigrants differs from that of UK born White in several important ways. The education and experience of immigrants are subject to different 'rewards' to those of natives, and immigrants will usually end up in jobs that are a poor match for their education. These findings are in line with the results of the literature in this field.

The main contributions of this thesis are twofold: substantively, the thesis addresses and explores the heterogeneity in the groups studied in terms of observable and unobservable characteristics. Also, this study is among the pioneering research being conducted with the re-scaling of complex survey weights associated with the UKHLS.

Keywords: Immigrants, labour market, multilevel modelling, occupation, professional class, pay asymmetry, strict balanced panel, transitions, trajectories.

THESIS INTRODUCTION

Studies of immigrant socio-economic integration have flourished in the last five decades. Such literature has focused on how rapidly after arrival (and to what extent) the earnings of immigrants catch up with those of indigenous populations (natives) (Timothy & Leigh, 2011). The subsequent debate has focused on cohort effects, on language acquisition and assimilation on other economic dimensions—but for the "most part immigrant assimilation is viewed as individualistic rather than community based" (ibid, p.2). In contestation a plethora of other social scientists question what seems a rather limited view taken by economists of the assimilation experience. In tandem, contemporary literature has developed with more focus on community based assimilation rather than merely individualistic —hence assimilation of particular ethnic origin groups must be viewed as just that: the assimilation of groups, rather than merely a sum of individuals who happen to be part of such groups (ibid).

Yet, it is apparent that pioneering sociological research have concentrated on how immigrants from different origin countries and regions have evolved into distinct ethnic groups in host labour markets (Glazer & Moynihan, 1963; Gordon, 1964)—such studies epitomise the host society into the picture, focusing primarily on degrees of receptivity towards male immigrants, unfortunately with less attention to female immigrants (ibid). A related view based on the given context correlates positively with sociological literature affirmations that are anchored on ethnic communities, i.e., stretching back to opportunities at arrival retrospectively (Portes & Rumbaut, 1996). Put differently, the sociological approach considers how immigrants access different labour market sectors as well as different occupational strata. In the same vein, Waldinger (1996, p. 18) posits that "entire groups are ordered in terms of desirability for preferred origin, with skilled relevant characteristics as additional weights". Concurrently, old immigrants (early arrivals) from a given country of origin tend to be concentrated in "certain occupational niches or in specific lines of small business—often related to particular ethnic goods" (Timothy & Leigh, 2011, p. 393). Based on the USA labour market, in particular in New York, old Chinese immigrants were concentrated in the garment sector, restaurants and laundries, but over time their descendants and newly arrived co-ethnics ('new' immigrants) differentiating into wider range of occupations, partly through extension of ethnic networks, partly through integration with host society and also partly through adaptation of the communities themselves to the norms of the host society (ibid). Expressed plainly, there are wide ranging affirmations underpinning the sociological view that outcomes of immigrants in a given labour market depend largely on the

degree of socio-economic integration of their group communities as a whole and not just on the skills and motivation of individuals (ibid).

In a similar context, Zimmermann and Constant (2007), classify those immigrants who identify strongly with the host country as assimilated and those who identify strongly with both country of origin and host country as integrated. It is the latter that this thesis is concerned about and will explore empirically. Lazear (2000) asserts that because immigrants have attributes and skills that differ from those of indigenous host communities, whilst there are potential gains from human capital transfer, immigrants' origin language differences also act as hindrances to communication and thus slows their socio-economic integration relative to natives. As will become apparent with statistical descriptions there is illuminating evidence that men still dominate in many desirable and high earning occupations on one hand, also men outnumber women in certain elementary occupations, contrary to patriarchy assumptions (Robert, Browne, Brooks, & Jarman, 2002).

On one hand contemporary economists have also examined the effects of ethnic concentration and immigrant ghettos on the economic outcomes of immigrants through processes such as the acquisition of language skills and movement across occupations and localities—unfortunately treating the community as given rather than perceiving it as a dual carriageway on the other hand (Timothy & Leigh, 2011).

Amidst the sociological and economical views lays challenges posed by globalism/ neoliberalism. In this context nation states compete with each other for skilled people, knowledge, capital, goods and other inputs of economic activity (Ewers, 2007). Instead of only maintaining or improving own stock assets in such states, the power of nation states to attract outside flows of economic activity from elsewhere is becoming increasingly important under the dictates of neoliberal market restructuring, in particular, socio-economic structural adjustments are inevitable (Benería, 2001; Ewers, 2007). According to Benería (2001, p.53)

> [n]eoliberal structural adjustments refer to the adoption of economic policies including monetary and fiscal restraint, a greater emphasis on market mechanisms in the allocation of resources and a general opening of the economy to international trade and investment.

Broadly, neoliberal dual labour force demands are configured in literature as commensurate with unresolved tensions associated with economic restructuring vis-à-vis human capital utility and meritocracy (Moore, 2000; Tannock, 2009).

Concomitantly, global/neo-liberal economic restructuring programs have increasingly taken a wide variety of forms including the following: privatisation, deregulation and downsizing programs, technology-skill-enhancements and degradation of many pre-migration skills in skill intensive labour market sectors and elementary job sectors respectively, hence, creating dual pathways of international human capital placements in such economies, leading to differential labour market rewards and penalties facing diverse international immigrants (Benería, 2001; Ewers, 2007; Koser & Salt, 1997; Mahroum, 2000; Man, 2004; Massey & Arango, 1993; Morawska, 2007, 2009).

What makes the socio-economic integration of immigrants fast-tracked or delayed can be attributed to ongoing economic restructuring dynamics associated with neo-liberal labour markets, which Standing (2011) best describes as 'precarious'. Standing (2011), in great depth explains the growth of precarious employment in neo-liberal markets epitomising the idea that post-industrial labour markets have become commodities, and as such, can be bought and sold through mergers and acquisitions. Commodification suggests that commitments made by today's industry/firm owners are more susceptible to change, i.e. the owners could be out tomorrow, along with their entire management teams and the 'nods-and-handshakes' that make informal bargains about labour, how payments should be honoured and how people are treated in moments of need may also fly out through the window (Blavatskyy, 2007, p. 1). Five core attributes of neo-liberal markets are summarized by Guy Standing as follows.

(i) Commodification of firm is global, thereby making life more insecure for both immigrants and indigenous populations. Even those in the salariat can now find that overnight they have lost employment and other forms of security because their firm has been taken over or declared bankrupt prior to restructuring. For their part as partial defense, companies want more flexible labour force so that they respond quickly to external threats.

(ii) The disruption linked to firm commodification feeds into the way skills are developed. The incentive to invest in skill development is determined by the cost of acquiring them, the opportunity cost of doing so and the prospective additional income. If the risk increases of not having an opportunity to practise skills, investment in such skills may decline, so is the psychological commitment to the company. Specifically if firms

become more fluid, employees are discouraged from trying to build careers inside them. This puts them close to be in the precariat.

(iii) Where services predominate, labour tends to be project-oriented rather than continuous. This feeds into the fluctuation of labour demands, making use of temporal labour almost necessary. There are also less tangible factors promoting its growth in neo-liberal markets. People on temporary contracts are exploited to labour harder, especially if the jobs are more intense. Regulars may resent long shifts. Those on temporary contracts may be easily exploited and are paid less for fewer hours in down periods. They can be controlled through fear more easily. If they do not put up with demands placed on them, they can be told to leave, with minimum fuss and cost.

(iv) Competiveness through use of temporary labour is increasingly important in Western labour market, a pattern known as the 'dominance effect'. Multi-corporations try to establish their employment models in places where they can set up subsidiaries, usually edging out local practices. Thus McDonald's best practice model involves Lack of access to the professional class, removal of long serving employees, union busting and paying lower wages and enterprise benefits.

(v) Temporary labour, multinational employment agencies and seedy labour brokers are all part of global capitalism, helping firms to shift faster top temporaries and to contracting out of much of their labour. Temporary agencies, for example Adecco with 70 000 people on its books has become one of the world's biggest private employers. Temporary agencies mainly focus on clerical staff and menial jobs, such as cleaning and hospital auxiliaries. The temporal share of the Western labour market shows no sign of declining; it is a reality of global capitalism.

Consequently, economic restructuring of neo-liberal markets can also be linked to skill shortages and lack of career opportunities arising in such economies—taking prominence as primary concerns across global national governments, policy makers and researchers since the 1990s (for more nuanced discussion on these issues, see for example: Mahroum, 2000; Salt, Clarke, & Wanner, 2004; J Salt & Clarke, 1998).

Concomitantly, increasing opportunities for labour mobility across political borders, especially for the highly skilled immigrants may be perceived as an ameliorating panacea to skill shortages in certain sectors of global economies (Mahroum, 1999).

On the other hand, proliferation of such skilled immigrants have drastically engendered polarization of skills and other issues pertaining to brain-inflation and brain-waste (Salt et al., 2004). In fact, neo-liberal structural adjustment programs have also created bias to human capital selection oriented to science and technology (HRST) skills (Mahroum, 2000, 2004; Rollason, 2002). Contrarily, humanity based skills seem less favoured; hence, holders of humanity based qualifications left more susceptible to labour market penalties in general. Khadria (2002, p. 5) posits that "a number of developed countries have liberalized their policies for the admission of [science-oriented] skilled professionals." Since this demand is largely met by non-western countries, ultimately triggering an exodus of their skilled personnel from such countries, occurs *en masse*, thusly, exacerbating intensive and extensive 'brain drain' accordingly (Khadria, 2002).

The outlined characteristics of neoliberal markets, in part, implies significant employment downturns which affect neo-liberal markets today (Berger & Piore, 1981). Theoretically, they also challenge traditional and contemporary views on the socio-economic integration of immigrants per se (Benería, 2001; Morawska, 2007; Zhou, 1997). Therefore it suffices to postulate that core post-industrial economies' neo-liberal economic restructuring programs have created upward mobility opportunities for few immigrants with sought after skills, such as Information Technology Communications and Electronics (ITCE) and yet, at the same time, entrapping many immigrants with un-sought after skills—i.e., humanity-based–art skills in precarious sectors of such economies (Standing, 2011). The preceding remarks, clearly show that the globalised neo-liberalism is by far a system of unequitable labour market participation—i.e., fairly structured global economy, society and polity, but, rather a system of selective inclusion and exclusion of human capital from specific country of origin groups, hence, neoliberalism maintains and exacerbates inequality per se (Castles, 2002, 2004; Douglas et al., 1993; Field, 1980; Haas, 2010; Schiller, 2009; Spenner, 1985; Standing, 2011). However, due to data restrictions, the global/neoliberal postulates are not tested empirically in this thesis due to data restrictions - the analyses presented in the forthcoming chapters are based on grouped micro level survey data.

This thesis acknowledges the wide variety and complexity of studying the socio-economic integration of immigrants in multi-neo-liberal markets; hence, I restrict the analysis to binary and continuous dependent variables, i.e., occupational status and wages, with the UK born White as the reference group. To account for immigrants'

differential times of arrival into the UK, immigrants are classified into two broad categories 'Old' and 'New' (will explain these two groups later) which are analysed throughout the thesis based on three essay titles: (i) *Access (or Lack of Access) to the Professional Class in the UK Labour Market: a Case Study of 'Old' and 'New' Immigrants relative to UK–born White* (ii) Occupation and Country of Origin Pay Asymmetry by Gender: *a Comparative Study of Immigrants and UK Born White in the UK Labour Market*, and (iii) *a Longitudinal Analysis of Occupational Transitions and Wage Trajectories: Drawing Insights From Immigrants ('Old' and 'New') relative to the UK–Born White*. To inform the forthcoming analyses, literature review is structured as follows:

1) Overview of socio-economic integration of immigrants: a global view.
2) I discuss theories on socio-economic integration of immigrants in host labour markets.
3) I provide a general overview of Influxes /Integration policies in the UK labour market.
4) I survey the socio-economic integration of Immigrants in the UK Labour Market.
5) I consider the UK Policy on New immigrants.
6) I discuss classification and Socio-economic integration characteristics of country of origin groups in the UK labour market.
7) The seventh section concentrates on socio-economic characteristics of immigrant groups in the UK labour market.
8) The eighth section introduces Data, Weights and Methods and lastly, a description/construction summary table of Independent variables and summary of weights used across the three empirical papers is presented.

LITERATURE REVIEW

SOCIO-ECONOMIC INTEGRATION OF IMMIGRANTS: A GLOBAL OVERVIEW

I start off this section by giving global overviews in terms of some of the tenets on the understanding of socio-economic integration of immigrants covered by the research produced in Economics and Sociology, hereafter socio-economic literature (Biggart, 2008). As expected, economists generally study economic variables to see what impact they have on other economic variables; for example, the impact of years of schooling on productivity. Hence, economists tend to treat social factors/mechanisms as exogenous, whereas sociologists treat such factors as endogenous in explaining social structure, social order and deriving meaning (ibid). As such a socio-economic approach includes some aspects of both and hence, it is posited that, 'economic relations and actions spring from social relations, or at least are informed by them', (for more in-depth discussion and further assumptions engaged in socio-economic literature, see (Biggart, 2008, pp. 13-382). As an example, Becker (1993a, p. 385) uses an economic approach as a way of "prying economists away from narrow assumptions, i.e. incorporating a richer class of attitudes, preferences and calculations…. [as b]ehaviour is driven by a much richer set of values and preferences". Since labour market rewards derive from the labour market positions occupied by immigrants (Marini & Fan, 1997), I postulate that both classical and contemporary literature views on understanding socio-economic integration of immigrants are important and are not mutually exclusive. Both classical and contemporary literatures overlap on the basis of interpreting human capital tenets (Becker, 1962). In that context, human capital-based assimilationist approaches are more prominent in the classical literature—emphasizing differential socio-economic integration outcomes for diverse country of origin groups (Bean & Stevens, 2003; Casciani, 2002; Demireva, 2011; Dinesen & Hooghe, 2010; Ellis, Wright, & Parks, 2004; Goldmann, Sweetman, & Warman, 2011; Hao, 2007).

According to Timothy and Leigh (2011, p. 390)

> [a]ssimilation depends not only on how immigrants fit into the host country's labour market and its wider culture, but, also on the degree to which the non-immigrant community accepts, accommodates and adapts to particular immigrant groups. The more established is the tradition of immigrants from a particular source, the more integrated that ethnic community will be, and the more easily 'new' immigrants from that source will assimilate into the host labour market.

In a similar context, Chiswick and Miller (2005) (and many others concentrating on the effect of ethnic group size), focus on education and other relevant human capital

variables including the number of years since arrival in the host labour market—as determinants of immigrants' occupation and earnings in given host labour markets. The same literature also points out that, the larger the ethnic group, the greater is their supply of labour and consequently the lower the provision of 'ethnic goods' (ibid). On the contrary, many assertions on immigrants' socio-economic integration in foreign labour markets, do not agree with the preceding view, instead epitomise a positive diversity view on immigrants' socio-economic integration in a given labour market, i.e., the "stew tastes better if the ingredients are varied" Lazear, 2000, p. 2). According to Lazear (2000, p. 3) "diverse foreign born bring characteristics and skills that are different from host communities, hence, there are potential gains associated with their diversity—i.e., 'wider economic gene pool' with less 'inbreeding' ideas may become better and more creative from trade", but, on the other hand, such differences are perceived by many researchers as impediments to both communication and trade (Timothy & Leigh, 2011).

On the education attribute, Lazear (2000) theorizes it as an important characteristic, both on the basis of immigrants' communication and relevance in a given host country. As will become more apparent in the section on UK labour market policies (forthcoming), "immigration policy is more than an underlying characteristic of the countries from which immigrants are drawn, [it] determines the quality of immigrants in [a given labour market]" in a particular period (Lazear, 2000, p. 5). In a similar context, because the filters are often different across country of origin groups' education levels, the same literature asserts that immigrants with higher average levels of education are more likely to integrate faster than those with lower average levels of education.

When immigrants are highly educated (i.e., possessing higher average levels of formal education), they are also more likely to have better language skills and flexible general human capital that can easily adapt into any given host labour market. In particular, studies concentrating in the US labour market have shown that highly skilled immigrants suffer very little wage disadvantage and those that resort to self employment outperform the native- born (ibid). According to Timothy and Leigh (2011, p. 393) " 'human capital' immigrants are more able to side step the ethnic economy and, hence, their ethnicity matters less." As an example, typical flows of highly skilled immigrants, between1961 and 1983, rose to about 700,000 immigrants comprising of scientists, engineers, doctors (just to mention a few) , i.e., total recorded in three post-industrial economies: United States, Canada and the United

Kingdom (Stalker 1994). However, in the contrary, there are also studies (including this one) demonstrating that many highly educated immigrants are not immune to host labour market penalties, i.e., few typical examples (J. Lindley & Lenton, 2006; Sloane, Battu, & Seaman, 1996; Zorlu, 2011).

Field literature also endorses a review that immigrants differ greatly in terms of their communication propensity, disconnectedness and relevance in a given labour market, (Lazear, 2000). Also, immigrant groups differ in terms of size and duration of stay in a given labour market—a perspective that I take into consideration in all of the emperical models used in this thesis. In this context, Hatton and Leigh (2011, p.390), claim that "the larger is the ethnic concentration in a particular locality; the worse is the labour market outcomes of immigrants in that community will be." On the contrary, where there are relatively fewer co-ethnics, individuals have greater incentives to invest in reducing the barriers, for example through language acquisition (ibid). Attached to origin group size, is the hypothesis of socio-economic integration based on social acceptance in a given host country, which I turn to now.

Hatton and Leigh examined some indicators of social acceptance of immigrants from different source regions and concluding that "the melting pot still works at the community level and with considerably historical lags" (ibid p.390). The idea of social acceptance or rejection regarding the assimilation of immigrants in foreign labour markets is not 'new' at all. Stalker (1994, p. 41), had long hinted that "immigrants' arrivals mean different things to different people: for communities, 'new' neighbours with different cultures and different languages; for firms a supply of fresh, and often cheaper [labour]….".

Zorlu (2011,p.22) pinpointing on the adjustment of immigrants in new host labour market asserts that:

> [the] labour market adjustment of immigrants runs through inter occupational, rather than intra-job mobility. Immigrants' skills are drastically undervalued in the first years of residence so that immigrants are employed in lower skilled jobs, given their skill endowment, compared with [indigenous natives]. As the duration of residence increases and immigrants accumulate more host specific capital they move to higher skilled jobs.

Whether immigrants' socio-economic integration do reach parity or not with those of host natives or even surpass them over time, continue to inspire research (including this study). Based on the literature reviewed so far, it is clear that the socio-economic integration topography of immigrants in foreign host labour markets is far from being homogeneous. In the next section, I examine classical and contemporary socio-

economic integration theories.

THEORIES ON SOCIO-ECONOMIC INTEGRATION OF IMMIGRANTS IN HOST LABOUR MARKETS: AN OVERVIEW

There have been a vast number of socio-economic integration theories in the field offered to explain immigrants' socio-economic integration processes and related disadvantages in foreign labour markets, and it is not my intention to review all of them—in any case space would not permit. Over the years socio-economic integration theories have been linked to 'salad bowl integration outcomes—a view which took prominence due to immigrant population influxes reaching a critical mass (Branigin, 1998), as opposed to total assimilation or 'melting pot' hypotheses that have been articles of faith in the American self-image for generations, now increasingly seen as far-fetched, given the scale and diversity of first generation international immigrants in receiving countries (Branigin, 1998; Brown & Bean, 2006; Glazer & Moynihan, 1963; Zangwill, 1909). In fact, the very concept of assimilation is being called into question as never before. Some sociologists argue that the 'melting pot' often means little more than "Anglo conformity" and that assimilation is not always a positive experience – for either society or the immigrants themselves (Branigin, 1998; Lazear, 2000; Trulson & Marquart, 2002). And with today's emphasis on diversity and ethnicity, it has become easier than ever for immigrants to avoid the 'melting pot' entirely (Branigin, 1998), and some contemporary literature describing assimilation as U-shaped (Chiswick, Lee, & Miller, 2005). Next, I give overviews on classical and segmented assimilation theories (Gordon, 1964; Portes, 1995, 1997; Portes & Fernandez-Kelly, 2008); vertical and horizontal occupational segregation theories (Beach & Slotsve, 1994; Gallie, 2002; Polavieja, 2012), human capital and rational theories (Robert et al., 2002).

Classical and segmented assimilation theories: an overview

The original formulation of the classical assimilation theory was originally inspired on Robert Park's 1950's race relations cycle, involving initially four sequential stages, namely: contact, competition, accommodation and eventual assimilation (South, Crowder, & Chavez, 2005) and later systematized by Milton Gordon in 1964. In *Assimilation into American Life: the Role of Race, Religion and National origins*, Gordon (1964:60-83) provides a comprehensive explanation of the classical assimilation model in detail. In Milton Gorden's terms, it is expected that immigrant groups with well rooted close relations with members of the 'native' population are more likely to transfer their profitable human capital into the mainstream labour market (Gordon, 1964). With insights from Morawska (1994), Milton Gordon's systematized classical assimilation model can be viewed as a process through which members of an ethnic/racial group adopt attitudes, cultural traits and ways of life of the majority group. More concisely, Brown and Bean (2006, p. 1) postulate that

> [a]ssimilation sometimes known as integration or incorporation is the process by which the characteristics of members of the immigrant groups and host societies come to resemble one another. That process, which has both economic and sociocultural dimensions, begins with the immigrant generation and continues through the generation and beyond…indeed groups may vary in the apparent incompleteness of their assimilation for a number of reasons, including the level of human capital (education) they bring with them and the social and economic structure of the society they enter.

Greenman and Xie (2008) explain the classical assimilation theory as an immigrant adaptation theory, by which assimilation is considered as an integral part of the process of immigrants' socio-economic integration in a given host labour market. However, immigrant members confined to immigrant/ethnic economies and enclaves might never attain higher-reaching-native-contacts, hence, remain hindered by the weakness of their networks and remain restricted to elementary low paying jobs (Banerjee-Guha, 2008; Borjas, 2000; Portes, 1995; Warman, 2007; Wilson & Portes, 1980; Zhou, 1997). Although the experiences of European groups coming to the United States in the early-20th century suggest that full assimilation usually occurs within three to four generations, no fixed timetable governs completion of the process (Brown & Bean, 2006). The assimilation processes may also be delayed by the reluctance of some immigrants to invest in host country's specific human capital, especially if they perceive their sojourn as temporary (an issue which may be of relevance to 'new' immigrants rather than to old immigrants—in particular, those who come as seasonal workers) (Dustmann, 2000; Ruhs, 2006; Wilson & Portes, 1980).Demireva (2011, p. 640) asserts that,

> [a]mong 'new' immigrants important differences in the strength of social networks are expected, as some of them—New Commonwealth immigrants arriving after the 1990s, for example—can potentially rely on their large ethnic communities, while others lack the support of established co-ethics, and consequently remain restricted to the under privileged segments of the host society.

Concomitantly, different aspects of assimilation may also vary incompleteness at any point in time—i.e., for an example "an immigrant may master a host-country language faster than he or she attains parity with the earnings of the native born" (Brown & Bean, 2006, p.1). However, incompleteness of assimilation may be similarly affected across groups if economic or other structural changes were to reduce most people's chances of economic mobility (ibid). More importantly, assimilation may be incomplete because it is blocked outright, delayed or merely unfinished—however, the type of incompletion matters, because each type is freighted with different implications for theory and thus for policy (ibid).

Unlike in the classical assimilation model, segmented assimilation epitomizes differential labour market outcomes (rewards and penalties) for diverse immigrants in respect to the segment of the host society to which they adapt (Kroneberg, 2008; Portes, 1997; Portes & Zhou, 1993; Silberman & Alba, 2007; Waldinger & Feliciano, 2004). The work of Gans (1992), while exploring the circumstances of immigrants who entered into the US during the transition from an industrial to a post industrial economy, reveals the ways through which immigrants managed to improve their socio-economic position in the host country: (i) education-driven upward mobility; (ii) succession driven mobility and (iii) niche improvement. In each of these scenarios, upwards mobility was a reality for many recent immigrants. However, a less sanguine perspective points to a wide variety of assimilation outcomes in post-industrial economies, in particular, when such economies are increasingly becoming hour-glass-economies, hence, opportunities for upward mobility for many immigrants becoming limited.

In essence, the segmented assimilation theory conveys a sense of separateness in describing the socio-economic integration of immigrants in a given host labour market, which is a view in line with the 'salad bowl' metaphor (Branigin, 1998). Its formulation and empirical application is deemed as one of the most remarkable developments to date (Portes & Rumbaut, 1996, 2001; Portes & Zhou, 1993; Zhou, 1997; Zhou & Lee, 2008).

Many contemporary studies show that immigrants' socio-economic integration

trajectories are heterogeneous—i.e., downward, lateral, upward, hence, in some literature configured as a U–shaped patterned assimilation configuration (Chiswick et al., 2005). Chiswick et al. (2005, p. 235) suggests that, the decline in occupational status from the last job in the country of origin to the first job in the destination country, followed by a subsequent rise over time in the destination country, can be described as a 'U'-shaped pattern for fully integrated immigrants. The authors assert that 'the degree of subsequent increase in the destination country will be related to the initial decline from the origin to the destination - the steeper the decline, on average, the steeper the subsequent increase' (ibid, p.335). Chiswick et al. (2005)'s U-shaped assimilation theoretical model generates hypotheses vis-à-vis a U-shaped pattern of immigrants' job-earning trajectories, perceived from the 'last job'-related earnings prior to migration, to the 'first job-earnings' in the host labour market, to subsequent job-earnings in the host labour market, and more importantly the depth of the 'U' matters for immigrants. For example, an immigrant doctor may start in the UK labour market as a cleaner in Tesco's supermarket, or a dish-washer in a restaurant, then over time may work as a surgery assistant, and then possibly strive to become a doctor or surgeon over time with the acquisition of UK-specific medical practice licenses (immigrant doctor's occupation path is metaphorically U-shaped, also does apply to many other careers).

More specifically, Chiswick et al. (2005)'s U-shaped assimilation theory posits that, starting from the onset of entering a new location, the lower the transferability of immigrants' skills from the 'last permanent job' in the country of origin to the 'first job' in the host labour market, the greater the decline in both occupation and associated wages (ibid). More specifically, the segmented assimilation theory challenges Milton Gordon's acculturation assumption, in the sense that acculturation may not necessarily lead to socio-economic integration success, and upward mobility cannot be attained without dissolving strong ethnic bonds, a typical example here could be drawn from Black Caribbean, Indian and Chinese entrepreneurs in the UK labour market (Anthony Heath & Cheung, 2005).

Furthermore, given diverse influx of European and non-European immigrants in the UK labour market, one would also expect labour market outcomes to be segmented, rendering the assimilation process, 'non-linear' and 'bumpy' (Gans, 1992). In this context, I can assume that socio-economic integration opportunities and trajectories of immigrants in postindustrial economies like the UK, are bifurcated between the skill intensive (highly paid and specialized) sectors and elementary sectors (low paid

jobs) (Morawska, 2007; Portes & Fernandez-Kelly, 2008). Bifurcation can also be applied looking at disproportionate representation of men and women through the lens of human capital and rational choice theories, which I turn to next.

Human capital simply "refers to the productive capacities of human beings as income-producing agents in an economy" (Hornbeck & Salamon, 1991, p. 3). Notable classical human capital premises include the following: (i) employees' earnings are directly related to human capital investment(s), hence, greater investments in terms of education and training, language skills and work experience (just to mention a few examples), are likely to produce a greater propensity for employment based earnings (Mincer & Polachek, 1974)[1]; (ii) earnings in any given labour market are a function of the human-capital stock brought in and accrued at work: 'a sequence of positive net investments in human capital gives rise to growing earning power over [an employee's] life cycle' and in contrast, when investment is negative, i.e., 'when market skills are eroded by depreciation, earning power declines' (ibid., p.78); (iii) where the atrophy rate of human capital is occupation-specific due to nurturance, women continue to experience a comparative disadvantage in the labour market, hence, they have more interrupted careers and, men by contrast, go into careers with a relatively more skills[2] (Polachek, 1981; Zellner, 1975); (iv) 'employees' contributions and merits can be quantified and rewards are then distributed in a rational, bias-free way that reflects this quantification, [hence], gender neutral measurement units of human capital inputs for male and female employees [are feasible]' (Lips, 2013, p. 1). It is widely conceived that because women and men anticipate that they will engage in different adulthood activities, women tend to develop better non-market skills, whereas men tend to develop better market skills (see few examples: Polachek, 1981; Zellner, 1975).

The extension of human capital theory with rational choice grants a predominantly prevalent and persuasive approach to explaining differences in labour market outcomes of men and women (Robert et al., 2002). While there are many studies addressing human capital theory based explanations over immigrants' socio-economic integration in foreign labour markets, many field studies derive insights on

1 This literature acknowledges the differential time allocation and investments in human capital to be sex-linked and subject to cultural and technological changes.

2 The two authors suggests that women initially go into occupations with higher wages in the first job and relatively flat returns afterwards, and in contrast, men start with lower wages at the beginning, yet are rewarded by relatively steep wage profiles afterwards, due to higher returns on training, hence leading to an increasing wage gap over time

both human capital and rational choice theories (ibid, pp515-520). The arguments influencing this undertaking are configured from developments within economics—however, the ideas of human capital are in turn grounded in two well-established sociological arguments (well established that they may be regarded as simply common sense) (ibid) : (i) "qualifications, or the marketable skills the qualifications present", and (ii) "experience" (ibid, p.515)–combine to form human capital (Becker, 1964). However, substantial differences in labour market performances of country of origin groups have been discussed in human capital and rational theories and can be summarised as follows:

(i) Field studies dealing with patterns of labour participation; earnings, marriage patterns, division of household tasks and gender pay gap differences (Borjas, 1988; Chiswick, 1978; Luthra, 2010; McGoldrick & Robst, 1996) encompass the view that knowledge, attitude and skills developed across education systems as well as on-the-job training and practice, are country-specific.

(ii) Both human capital and rational theories imply that: (i) people's life chances depend on their human capital and (ii) people are aware of this relationship between individual skills and life chances (Douglas et al., 1993,p.30).

Given the view that qualifications are country specific, this also implies that they may not be necessarily portable, hence, immigrants may find it difficult to utilize and adapt such country specific human capitals accumulated from their origin countries (Borjas, 1988; Friedberg, 2000; Goldmann et al., 2011).

Therefore, negative correlations of immigrants' human capital in relation to employment and wages are more likely to occur given labour markets (few examples include: J. Lindley & Lenton, 2006; Sloane et al., 1996; Zorlu, 2011), but how such capital vary is ever changing. In a study conducted in the United States of America (USA) labour market, Persson and Rabinowwicz (2000, p. 6) assert that,

> [t]he wage growth experienced by immigrants differs systematically across country of origin socio-economic demographics, due to clustering which 'prevent a move to better jobs by providing a self-contained labour market… hence reducing immigrants' incentives to learn and adapt the given culture and language of the host labour market.

In a similar, human capital theoretical framework, Goldmann et al. (2011, p. 3) assert that,

> [w]hile the impacts of source country occupational tenure and matching source and host country occupations are not well understood, it seems likely that human capital acquired prior to immigration will be of much lower value if an immigrant is unable to secure an equivalent [occupational status standing] or employment in the same or a related pre-migration occupation in the host country.

While there is certainly accuracy in the postulations that human capital and rational choice attribute to both horizontal and vertical segregation of occupations and pay, there are, however, some flaws with the concept of human capital theory (Robert et al., 2002). First, human capital theory assumes a perfect labour market information on the part of actors, does not account for fluctuations in labour market demand as well as discrimination (which, unfortunately, remain an untested hypothesis due to lack of structural data). However, Mariah (2004, p. 281) suggest that the bulk of the evidence suggests that most immigrant entrepreneurs "are "pulled" by the opportunities presented by ethnic resources to open enclave businesses, although some are also "pushed" by mainstream employers' discrimination."

Second, human capital assumptions also assume that child care and housework do not contribute to an individual's growth of human capital—yet they involve and develop skills which have labour market value, i.e., cooking skills can be somewhat highly remunerated; cleaning and sewing are also occupations paid in the labour market (ibid).

Third, childcare, also entails a range of activities such as nursing, general supervision of children and teaching, all key skills relevant to waged employment, and also entails both administrative and managerial tasks in running the household (however, this attenuating attributes remain implicit even after controlling number of children in all models used in this thesis) (ibid).

Fourth, the notion of human capital is problematic—capital is used in analogue with economic capital, which is typically measured in money value (ibid). The question of ownership is very strange in this case, typically if one invest money in shares it is clear who owns the shares, with human capital it is quite different—i.e., society collectively invests in education and training, so might be expected to own the resultant human capital (all these attributes remain implicit in the thesis though I control for education years in each empirical model (ibid, p, 518).

Fifth, obliqueness also exists in the human capital explanation of women's lower wages, in particular, the assertion that women's qualifications are worth less than

men's, and therefore women are paid less than men (ibid). This begs one to ask, how one knows that women's qualifications are worth less.

Sixth, woman's pay disadvantage is not confined to mothers or even to /cohabiting women—evidence in literature suggest main difference occurs between married men and women— which is for obvious reasons—i.e., due to motherhood and related career interruptions/part time work (regarded as rational choice attributes (Blackburn, Browne, Brooks, & Jarman, 2002, p. 519), however, there are many occupations where single men and single women have similar wages in field literature.

Last but not least, I end this section by exploring vertical and horizontal segregation theories (Polavieja, 2012). One of the most commonly cited explanations for the gender pay gap is the occupational segregation of the sexes, whereby women tend to get lower paid occupations relative to men (Hopkins,2011). Segregation of occupations is commonly designated as either 'vertical' when males occupy higher paid and skilled jobs within the same occupation, or 'horizontal' where females are employed in different and predominantly low paid occupations from males (ibid, p.19). Kilbourne, England, and Beron (1994, p. 1150) assert that:

> [t]he occupations that employ the highest concentrations of black women are welfare aid, cook, housekeeper and private household worker, while the occupations that employ the highest percentage of UK women are dental hygienist, secretary and dental assistant…. Would the jobs in which black women are concentrated benefit proportionately from comparable worth? Only by studying the intersection of race and gender in the labour market can we assess the extent to which comparable worth, or other polices supported by feminists would benefit black and White women evenly.

Complex issues are also raised with respect to network differences, in particular between immigrant men and women from different source regions. For example, Toma and Vause (2010, p. 4), assert that "[o]n the benefits side, networks can provide information on (better) jobs or refer 'new' immigrants to employers, thus facilitating their economic integration in the host society." While other field studies attribute gender pay gap to ethnic enclaves[3] (Xie & Gough, 2011)—i.e., stressing that friends /acquaintances and family offer varied degrees of trust, norms of reciprocity and labour market information, during and after the migration process (Toma & Vause, 2010).

[3] Culturally distinct minority communities maintaining ways of life largely separate from the generally larger communities that surrounds them, http://immigrationinamerica.org/484-ethnic-enclaves.html?newsid=484, accessed 24/04/2015.

However, other studies have pointed to macro structural effects on the role of social capital in labour market stratification (Lu, Ruan, & Lai, 2013). Perversely, minority members confined to ethnic economies and enclaves never acquire progressive social capital, hence will be hindered by the weakness of their networks and remain confined to low pay/class jobs (Bean & Stevens, 2003; Castles, 2002; Portes, 1995). While social capital and ethnic enclave theories are elegant in explaining the network-based mechanism crucial in understanding stratification/differential labour market outcomes, due to data restrictions I cannot empirically examine them. On the other hand, as will be apparent in paper two, I am able to operationalize some of the horizontal and vertical segregation theory postulates in terms of occupation and country of origin pay asymmetries in the UK labour market.

Pursuing the disproportionate horizontal hypothesis of female employees' over-representation in poorly paid jobs relative to male employees' overrepresentation in top paying jobs (vertical), Hopkins,(2011, p.19) further notes that "the 'female occupations 'are often referred to as five c 's': cleaning; catering; caring; cashiering and clerical work", the descriptive stats show both vertical and horizontal attributes, as illustrated using Figure 2 2 through Figure 2 3 paper two (forthcoming), however, the distributions are far from being homogeneous though.

In the same vein, with reference to the work of Blau and Kahn (2000), economists have realized that wages tend to be depressed in female occupations due to greater prevalence of part time opportunities and labour market discrimination leading to oversupply of female-dominated jobs. However , the "overall structure of wages or the prices the labour market attaches to skills and the rents accruing to those in favoured factors can have a major impact on the relative wages of different subgroups in the given labour market" (Blau & Kahn, 2001, p. 1).

Polavieja (2012) attributes women's exclusion from top-paying jobs and from firm-specific occupational-training-selection to powerful actors such as male employers, male supervisors and male co-employees deliberately excluding women, who may see women as inferior in status for the best and most desired occupations[4]. In a similar context Becker (1993b, p. 2) asserts that "employees may refuse to work under a woman or black [person] even if they are paid to do so, or a customer may prefer not to deal with a black car salesman". Complete occupational segregation

4 There is no data to test this conjecture empirically using the UKHLS data unfortunately

excludes members of a certain social group and confining them to low income jobs (Bridges, 1982; Chukhai, 2003; Frehill, 1997; Hakim, 1992; Reskin, 1993; Rosenfeld & Spenner, 1992). Whilst the various forms of occupational segregation discussed tend to be gender specific, i.e., gender differences in either educational qualifications or labour market treatment of equally qualified persons (Blau & Kahn, 2000). As women increase their labour force involvement and improve their skills (in particular the increased use of information technologies (IT) seems to be favouring women when compared to men) it would be very important to see this hypothesis tested empirically. Using data from surveys such the UKHLS (as it is the case here), I can analyse the relative importance of country of origin and occupation specific factors in terms of wage distributions by gender in the UK labour market. As will become apparent across my three papers, both the descriptive statistics and empirical results reveal that complete occupational and pay segregation are not apparent, since both men and women country of origin groups show uneven disproportionality, as opposed to complete segregation amounting to polarization of occupations and earnings. Reskin (1993), established that gender plays an important role both in occupational/pay assignment and distribution in any given labour market, which we find consistent with some of the model estimates' results presented in the thesis.

In essence, all the socio-economic integration theories raised so far epitomise human capital theory tenets one way or the other. Nevertheless all the socio-economic integration theories raised are not infallible, however, in their traditional, economic and sociological form, remain packed with important values on qualifications and experiences of country of origin groups by gender. Employment and equal pay legislations articulate qualification and experience attributes (human capital variables) to have similar relevance and application in the UK labour market and beyond.

As a consequence, this study makes no claim of completeness and the author sincerely apologizes for possible omission of some related field contributions.

Based on the socio-economic theories reviewed, then, the thesis answers the following questions:

(i) Whether the relative chance of ending up with a lower social class job /occupational lack of access to the professional class job, comparing UK–born White, 'old' and 'new' immigrants are similar (using education years as a primary predictor)? (adjusted for each subgroup accordingly)

(ii) Whether pay asymmetry in terms of occupation and country of origin characteristics are worse for men and women immigrants than it is compared to the UK born white, men and women.

(iii) Whether 'old' and 'new' immigrants' earnings/occupations have improved over time (T) relative to those of UK born White's in the UK labour market.

The three research questions are important in the sense that they seek to empirically address a wider scope of understanding immigrants' socio-economic integration (which tends to be primarily descriptive (Demireva, 2011) using a current and elaborate dataset called UK Household Longitudinal Survey (UKHLS) —Waves 1-4, explained in-depth in the data and methods section (forthcoming). More importantly, the questions are answered using UKHLS data which, for the first time, have an Ethnic Minority Boost sample.

BROAD OVERVIEW OF INFLUXES /INTEGRATION POLICIES IN THE UK LABOUR MARKET

The continued influx of diverse immigrants into the UK labour market continue to inspire in-depth studies, including this one, on the subject of socio-economic integration of diverse immigrants living and working in the UK. The labour market is increasingly becoming a more "ethnically diverse labour market—which has also become further removed from its colonial past and perhaps surer in its multi-ethnic composition path (Berkeley, Khan, & Ambikaipaker, 2006; Chiswick, 1980). Within this context, Jayaweera and Gidley (2011, p. 4) assert that,

> [i]n terms of immigration, before the mid-20th century, major immigrant groups historically included European Jews and Irish. After the second world war, citizens from White colonies in the Caribbean, South Asia and Africa, which became the 'New' Commonwealth countries, were encouraged to move to Britain on a large scale to fill gaps in specific economic sectors: for example, transport and the National Health Service (NHS) in London and the South East, textile industries in the North of England and vehicle manufacturing and foundry work in the West Midlands. This movement of employees set the scene for the arrival and settlement of families, at different time periods for different groups and in the context of increasingly restrictive immigration and settlement policies over the second half of the 20th century.

The second wave of major immigration to the UK over the last half century is attributed to refugees and asylum seekers fleeing from political conflicts in Africa, Asia and Europe, mainly coming from former colonies, for example, East African Asians, Bangladeshis and later expanding to include a vast diversity of other population categories, such as Greek Cypriots, Somalis, Kurds from Turkey (Middle

Eastern), Bosnians, Tamils from Sri Lankan, Afghans and Iraqis (ibid). Additional demographic change was attributed to the arrival of labour immigrants from Eastern and central Europe when countries in that region acceded to the Euorpean Union (EU) in 2004 and 2007 (ibid).

A third wave of large scale arrival of immigrants occurred with the settlements of migrants in the 'new immigrant gateways' accentuated by labour force shortages in agricultural and food processing located in rural or semi-rural areas at some distance from metroploitan areas of residence of previous migration waves (ibid). Given the influx characteristics of migration patterns, enormous diversity by country of origin, nationality, reasons for migration and immigration status characterizes the present day non-UK born populations (ibid). According to Somerville (2012, p. 15), the size and complexity of international migration presents a huge political challenge, '[in particular] how [the UK government] can smartly and efficiently manage the way migration will transform society remains a pressing challenge for many developed countries today immigration and integration are "vortex" issues that may suck in views on a range of other issues', (ibid. p.8). As it stands the antagonistic attitude towards immigration has been an increasingly noticeable feature in recent British politics, i.e., in particular with the British National Party (BNP) —anti-immigrant hostility is the most important predictor of the support to this far-right political party. Recent research has shown a high increase in BNP support associated with the presence of a large Pakistani or Bangladeshi Muslim populations (while that relationship did not hold for non-Muslim Asians) (Goodwin, 2011; Jayaweera & Gidley, 2011).

Concomitantly, immigrants' socio-economic integration in the UK labour market is also patterned by different entry immigration policies and legislations. According to Somerville (2012, p. 6) the "dominant immigration philosophy and development of any kind of national integration policy in [the UK] need to be viewed initially in the context of the position and rights of people from British Colonies and ex-colonies coming to settle [in the UK]." This literature also points out that policy makers and the public perceive those from the British colonies and ex-colonies as ethnic minorities rather than immigrants –and such perceptions, in some way, have hampered the development of integration policies (ibid). On the other hand, immigration debates have focused more attention on securing borders to keep new comers out and, at the same time, the promotion of good 'race relations' and later anti-discrimination legislation through the Race Relations Act of 1976 (protection of

people from discrimination based on country of origin) and the race Amendment Act of 2000—enforcing public authorities to actively promote equality of opportunity and good relations between people of different racial groups) (ibid). Concomitantly, from the 1960s to the 1980s, the rights of individuals from British colonies and ex-colonies were getting slim with new enactments of new legislations, i.e., the 1962 and 1968 Commonwealth Immigrants Act , and the 1971 Immigration Act with weighty emphasis on distinguishing between those that had close ties to Britain by descent and , those who did not, i.e., those of Asian , African and Caribbean origins (ibid). Additionally, Salt and Millar (2006) and Berkeley et al. (2006)'s studies, both emphasize the fact that immigration control over family migration into the UK also tightened, in particular based on the 1971 immigration Act putting severe restrictions upon both work permits and family reunification and chain migration. More importantly, the steady increase in the number of labour migrants and asylum seekers settling in UK is also reported in the literature as part of the explanation, held anecdotally, as responsible for the perceived reduction in the proportion of grants of settlement awarded to family members (Berkeley et al., 2006; Jayaweera & Gidley, 2011).

Since then the system has continued to reform in the context of the following subsequent acts: Asylum and Immigration act 1996, Immigration and asylum act 1999, Nationality, Immigration and asylum act 2002 and, last but not least, the Immigration and Nationality Act of 2006. Such legislation was motivated by labour market shortages in specific sectors such as hospitality, food processing, and the increasing quest for highly skilled labour, in particular, apart from the main work-permit scheme skilled migrants, the Highly Skilled Migrants Programme (HSMP) was ratified in 2002—seeking to allow highly skilled migrants to enter the UK without a prior job offer. In tandem, low-skilled and semi-skilled migrants were comtemplated in the Seasonal Agricultural Worker Scheme (SAWS); the au-pair scheme –deemed as more of cultural exchange rather than a labour migration programme; the domestic worker scheme for domestic workers who travel to the UK with their employers and the sector-based scheme (SBS) which consents UK employers to recruit a limited number of workers to fill vacancies in specific sectors (Rollason, 2002; Ruhs, 2006). According to Rollason (2002, p. 332), the "IT industry alone would require 340 000 people between 1997 and 2006"5 and, at the same time,

5 Institute of Employment research, University of Warwick , http://scholar.google.co.uk/scholar?q=Institute+of+Employment+research%2C+university+of+Warwick&btnG=&hl=en&as_sdt=0%2.16/05/14.

the pay for computer analysts and programmers were increased by 25% more than the national average in the period (this was particularly acute for systems development staff, fourth generation language programmers and networking specialists).

The 1996 Skills Audit found that the UK lagged behind competitors like United States, France and Germany in the qualifications of its work force (particularly in higher education and vocational training). For those graduates having completed higher –education in computer-related courses, "a considerable number chose not to work directly in the sector" (Ibid, p332). All work-permit-holders could apply for an indefinite period to remain in the UK after five years (Demireva, 2011) and, similarly, the UKHLS data used in this study, which extends to 2012, captures significant changes in 2004 and beyond regarding the status of Central and Eastern European migrants (covering the post-EU enlargement period), the lifting of work permit restrictions on new EU8 citizens[6] (for extensive discussion on EU accession see Salt and Millar (2006). However, due to the UK policies on EU member's nationals, the number of immigrants from the European Union continue to increase (they can work and reside in the UK as they wish; they are exempted from immigration laws which affect non-EU members). The number of EU accession immigrants registered through the worker registration scheme rose to 427,000 within a period of two years, giving a total of 600,000 including the self-employed (Shelley, 2007, p. 36).

The 'country of origin' groups for UK work-permit holders have changed significantly over recent years in the labour market. From 1995 to 1998 the Old Commonwealth countries, in particular, the United States and Japan accounted for at least 53% of applications each year (Clarke & Salt, 2004). However, by 2002 their share of work permits issued had fallen to 34% (ibid). There has been a corresponding increase in the number of permits issued to developing countries, with

6 The agreement with the European Union on the free movement of persons was extended by a supplementary protocol. Under this Protocol I, effective since April 1, 2006, the free movement agreement has been extended to the ten EU member states which joined the EU in 2004. Since May 1st 2011, EU-8 citizens of Poland, Hungary, the Czech Republic, Slovenia, Slovakia, Estonia, Lithuania, and Latvia benefit from the full free movement of persons (same regulation as EU-17/EFTA). Citizens of Cyprus or Malta have full rights to freedom of movement and free access to the Swiss labor since June 1, 2007. Cf.: http://www.ejpd.admin.ch/content/bfm/en/home/themen/fza_schweiz-eu-efta/eu-efta_buerger_schweiz/eu-8.html accessed12/11/2015.

work permit grants for Indian rising from 8.3% of all grants in 1995 to 21.4% in 2002 and grants from the Philippines rising from 0.3% to 7.7% of the total grants (ibid). The number of migrants from the European Union continues to increase these migrants can work and reside in the UK, exempted from immigration laws affecting non-EU members. Although there exists today a significant group of highly skilled migrants, a number of whom come to the receiver country having succeeded in international job competitions, who do not suffer the initial loss of occupational status and earnings, the majority of migrants still endure a very challenging experience, and it is with such groups that this research is concerned.

In light of the preceding discussions, the literature suggests that asylum applications in the UK started increasing in the 1990s. Such trend extends to the rest of Northern Europe, of which Germany and the Netherlands registered the highest number of asylum seekers [7] applications (Demireva, 2011). Between 1999 and 2002, an additional upsurge in asylum application was registered, of which UK applications configuring to a maximum of 84,000 (Office, 2007). The 2002 Nationality, Immigration and Asylum Act (aimed at preventing the abuse of the system by applicants who seek labour employment and are not in danger of persecution) is attributed to subsequent decrease in asylum applications in the UK, in particular, by 2003 , as further controls were introduced, "6 percent of applicants were granted asylum and 11 per cent granted humanitarian protection (HP) or discretyionary leave (DL), numbers falling to only 4 percent granted asylum and 9 percent given HP or DL in 2004" (Berkeley et al., 2006, p. 22). In the second quarter of 2003, "88 to 90 percent of appeals were rejected", deemed as targets, which the UK Government was keen to maintain (Ibid).

Given the dynamic immigration legislation in the UK, it also implies that socio-economic integration of many immigrants working in the UK labour market may be impacted negatively, hence providing an impetus for new research across disciplines, the third sector and government agencies. Many field scholars, UK political parties and the public uphold the view that immigration to the UK is problematic, hence invoking great skepticism about the existing immigration legislation and control of immigrants into the UK labour market, " viewed as mere economic immigrants, or, even worse, 'bogus' asylum seekers" (Berkeley et al., 2006, p. 1). Such themes have

[7] Unlike economic immigrants , asylum seekers benefit from facilitated access to state-provided support and accommodation and no restricted period of stay(Gardner, 2006)

also garnered much attention in contemporary global economies8 per se vis-à-vis the intensification of both international and national crises and concomitant rapid neo-liberal structural adjustments, leading to labour market polarization of sought after skills in post-industrial economies (see for example Benería, 2001; Ewers, 2007; Mahroum, 2000).

The dynamics of international immigration inflows into the UK labour market have changed over time, yet the contours of the public debate indicate some remarkable consistencies (Berkeley et al., 2006; Casciani, 2002; Clark & Lindley, 2009; Demireva, 2011; Dustmann, Fabbri, Preston, & Wadsworth, 2003; A Heath, Cheung, & Britain, 2006). The literature reviewed in this thesis is indicative not only of the range of substantive topics in the field, but also the multiple levels of problem framing and analyses that coexist within sociology and economics of the lack of access to professional class jobs, pay asymmetry and occupation transitions and pay trajectories characterising country of origin groups working and living in the UK labour market—themes addressed as distinct essays comparing immigrants (men and women groups) to UK born White (men and women).

Within this context, entering the labour market, gaining meaningful employment and pursuing successful occupational careers and earnings is argued, in this thesis, represents an uneven and precarious experience for many immigrants living and working in the UK. Furthermore, the socio-economic integration of many immigrants is more likely to be undermined by the lack of country-specific human capital (i.e., stock of knowledge, skills, education, work experience, habits, language proficiency, social and personality attributes) upon arrival (Shields & Price, 2002). Consequently, several factors seem to be contributing to leaving immigrants' human capital less competitive when compared to UK White's.

Socio-economic integration of Immigrants in the UK Labour Market: an overview

More importantly, empirical research on the basis of understanding labour market performance of immigrants and ethnic minorities in the UK labour market (typical examples include: Berkeley et al., 2006; Berthoud, 2000; Burton, Nandi, & Platt, 2010; Demireva, 2011; A Heath & S Y Cheung, 2006; Anthony Heath & Cheung,

8 World's or regions' macro-level structures, that is in the operation of the large economic and political systems (Morawska, 2007, p. 1).

2007; Modood, Berthoud, Lakey, Virdiee, & Beishon, 2000a; Platt, 2002, 2005, 2010). However, many of the field studies tend to be descriptive rather than being analytic (Demireva, 2011), i.e., focusing extensively on overall changes in the proportion of immigrants, for an example, the decline of Commonwealth immigrants with consequent upsurges of Central and Eastern European[9] and Middle Eastern immigrants[10]- and probably East Asian[11] immigrants, see for an example Berkeley et al. (2006)'s study. Additionally, many studies do not make clear distinctions between 'old' or 'new' immigrants (Demireva, 2011), yet such a distinction is important, given that these groups have been subjected to different set of visa rules, and most likely their networks and experiences are far from being homogeneous (shaped by different set of opportunities) (ibid). Demireva (2011)'s study and the literature discussed in in her study explains why less attention has been accorded to studying 'new' immigrants arriving into the UK labour market. Such explanations include (i) domination of the UK labour market by Commonwealth migrants who had already had well-established communities, in particular the 2001 census depicting that the number of Eastern Europeans living in the UK; (ii) changes in the share of Old and New Commonwealth immigrants, while the major origin countries for 'New Commonwealth' immigrants included: India, Pakistan, Bangladesh, Caribbean Island , Kenya and Nigeria), increasing from 30 percent to 32 percent of UK immigrants in 1971, and 20 percent of UK immigrants in 2002, a change which was not felt within the Old Commonwealth immigrants (English-speaking white immigrants) (Berkeley et al., 2006; Demireva, 2011; Jayaweera & Gidley, 2011), (iii) Based on Ruhs (2006)'s study, European immigrants arriving from countries both inside and outside the European Economic Area have always been considered less 'problematic' and more integrated into the UK labour market. (iv) Prior to the enlargement of the European Union (EU) in 2004 and 2007, Demireva (2011, p. 638) assert that, "[c]entral and Eastern European immigrants in the UK were regarded primarily as temporal workers whose number was too small to be discussed in the debate over the incorporation of the permanently settling foreign born." Consequently from the 1990s onwards, the expansion of EU membership is associated with influx of Eastern European, Polish, Bulgarian and Romanian immigrants swamping the UK labour market (Drinkwater, Eade, & Garapich, 2009; Randalls, 2011; Salt & Millar, 2006).

9 Central and Eastern European Countries (CEECs) is an OECD term for the group of countries comprising Albania, Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, the Slovak Republic, Slovenia, and the three Baltic States: Estonia, Latvia and Lithuania http://stats.oecd.org/glossary/detail.asp?ID=303 accessed 28/10/14.

10 Here only two countries are included in the analysis, which are Turkey and Cyprus.

11 Here only china is included under this category (data has only immigrants from china, and immigrants from North Korea, South Korea, Japan and Taiwan.)

Next I explore the UK policy on 'new' immigrants.

UK Policy on 'New' immigrants an Overview

According to Demireva (2011, p. 638),

> [t]o understand the performance of migrants in [the UK], we have to keep in mind that the operating migration polices of the government and work-permit system also affect which segment of the labour market is reached by the migrants.

This literature offers three typologies of immigration to the UK, namely: labour migration; family reunion and asylum[12]. Unfortunately, the operationalization of these immigration typologies is not possible with the UKHLS data. Consequently, the socio-economic integration and penalties facing immigrants under family reunion and refugees (former asylum seekers before refugee status entitlement) are not studied individually. It is important to note that the field literature suggests that the immigration legislation in the UK prescribes important variances in the socio-economic integration pathways of 'typical' immigrants (see for an example Demireva, 2011). The broad eligibility criteria for obtaining a work permit in the UK includes: demonstration that permit holders have a trading presence in the UK; genuine vacancy; overseas nationals must be qualified and/or have experience to NVQ level 3 or above; and no suitable resident worker is available in the UK labour market (Clarke & Salt, 2004). Recently, UK labour market uses a four-tier immigration entry system (Clarke & Salt, 2003, 2004): tier 1 covers the highly-skilled, including doctors, engineers, finance experts and IT specialists; tier 2 covers the skilled (at least educated to NVQ level 3), who need to have a job before entry; tier 3 covers the low-skilled; and tier 4 covers students and specialists such as visiting workers representing international companies who do not want to stay in the UK (ibid).

Only tier 1 and tier 2 immigrants are allowed to settle in the UK. The qualifying period for indefinite leave to remain has been extended from 4 to 5 years. Tiers 1 and 2 cater for immigrants who have advanced educational qualifications and want to pursue a career in the host country, but their leave to stay is subject to renewal after four years, pending job availability (ibid).

12 The UKHLS data only allows analysis of documented, legal and working migrants, here referred as economic migrants throughout the thesis. However, field literature give anecdotal evidence indicating that the proportion of illegal immigrants has risen dramatically in the last twelve years. According to Demireva (2011, p. 652) "illegal immigrants frequently suffer poor work conditions, and are restricted to seasonal work."

Over and above, UK immigration policies remain a contentious political issue criticized as 'unfit for purpose' and heavily flawed in managing immigration and effective exit controls (Randalls, 2011). Despite the criticisms, the UK Government is still determined to streamline immigration policy, i.e. the work permit system, to help fulfil two objectives:(i) to ensure that the UK has the people it needs to prosper economically; and (ii) to control the numbers of both EU and non-EU immigrants entering the UK labour market (Clarke & Salt, 2004). More importantly, for both old and 'new' immigrants, the country of origin groups for UK work-permit holders have changed significantly over recent years in the labour market. From 1995 to 1998 the Old Commonwealth countries, the United States and Japan accounted for at least 53% of applications each year (Clarke & Salt, 2004). However, by 2002 their share of work permits issued had fallen to 34% (ibid). There has been a corresponding increase in the number of permits issued to developing countries, with work permit grants for Indians rising from 8.3% of all grants in 1995 to 21.4% in 2002 and grants from the Philippines rising from 0.3% to 7.7% of the total grants (ibid).

SOCIO-ECONOMIC CHARACTERISTICS OF IMMIGRANTS IN THE UK LABOUR MARKET (AN OVERVIEW)

Key findings from A Heath et al. (2006, p. 10) asserts that

> [t]he ethnic penalties experienced by Black Africans, both men and women, are especially high. Indians and Chinese tend to be able to compete on somewhat more equal terms terms than the other minorities, but even they experience some disadvantage….[t]here is clear evidence that the 'first generation' who were born overseas experience even greater ethnic penalties than the 'second generation' who were born and educated in Britain, especially with respect to occupational attainment.

More specifically this literature pinpoints that a number of men ethnic minority groups, notably Bangladeshi, Pakistani, Black African and Black Caribbean men continue to experience higher unemployment rates, greater concentrations in routine and semi-routine work compared to the UK born White in the UK labour market (Dustmann et al., 2003; Anthony Heath & Cheung, 2005; Anthony Heath & Sin Yi Cheung, 2006; Anthony Heath & Cheung, 2007; Anthony Heath & McMahon, 1991). The patterns of ethnic women's labour market outcomes contrast broadly with those of ethnic men groups, in that, ethnic minority women seem not to be quite as disadvantaged relative to the UK white women, as compared to ethnic minority men relative to UK white men (Anthony Heath & Sin Yi Cheung, 2006) —my empirical results (forthcoming) confirm the articulated findings from the preceding literature.

In addition, Shackleton (2008, p. 32)'s *Table 2 : Mean -hourly earnings and gender pay gap in full time work (2001-2005)* shows that the gender pay gap is ostensibly reversed, " black Caribbean men earning less than Black Caribbean women and Bangladeshi men earning less than Bangladeshi women." Comparing occupational placement of ethnic minority groups in the UK labour market, Yeandle, Stiell, and Buckner (2006, p. 14) indicate that:

> [t]he city's white British women are much less likely to work in manufacturing than local women from ethnic minority groups. 12% of employed white British women in Leicester work in manufacturing firms, compared with 34% of Indian women, 26% of Pakistani women and 25% of Bangladeshi women. Indian, Pakistani and Bangladeshi women are also highly concentrated in the wholesale and retail sector (around 20% for all three groups in the city as a whole), but also a sector in which many white British women work.

Based on economic inactivity in terms of unemployment, Anthony Heath and Sin Yi Cheung (2006, p. 9) concluded that

> [a] number of ethnic minority groups, notably Pakistani, Bangladeshi, Black Caribbean and Black African men continue to experience higher unemployment rates, greater concentrations in routine and semi-routine work and lower hourly earnings than do members of the comparison group of white British and other White.

Whilst women from these groups show higher unemployment rates than the comparison group, however, for those in work, average hourly earnings tend to be as high as or higher than those of white British women—differences of which variables such as education, foreign birth of minority groups and age could not explain (ibid).

In a study entitled *Deconstructing Whiteness in Britain*, Hickman and Walter (1995, p. 5) found out that Irish immigrants are "largely invisible as an ethnic group in Britain but continue to be racialized as inferior and alien Others"—such negative British attitudes towards the Irish immigrants are applied with same vigour to both sexes. In terms of occupation, historically, Irish women are strongly associated with home and family making, hence, due to family values returning to the centre stage in the late twentieth-century Britain, Irish women appear to conform to this ideal (ibid).

With regards to Indian immigrants, Morawska (2007, p.14) asserts that the quickly rising economy of India created a sizeable "new" middle-class composed of highly educated scientific and technical professionals, but whose employment and mobility expectations it could not meet and on the other hand, whose skills are actively sought after in core post-industrial economies, such as the UK, USA and Germany. Indian men are considered as possessing professional advanced science and technology skills and Indian women associated educational and medical services professions

with excellent English fluency—noted as advanced socialisation advantages.

Transforming economies in the former Soviet Union and post –communist Poland facilitated emigration decisions for many Eastern European immigrants, to a large extent (ibid). More so, Eastern European immigrants are sustained through Poland's accession into EU membership, granted in May 2004 (Drinkwater et al., 2009; Salt & Millar, 2006).

The Republic of Ireland immigrants (Irish) bear historical stereotyping baggage of the 19th century, perceived as "savage", "simian" and "low browed" (Roediger, 1994). The association of global terrorism with religious fanaticism, make Muslim-oriented groups such as Middle Eastern, Bangladesh and Pakistan more vulnerable to religious prejudice and looked down upon in post-industrial labour markets (Abbas, 2007; Joppke, 2009). Hong Kong/ Chinese, Caribbean, like the Indians, have a long history of international migration. The Germans, Spanish, Italian and French EU15 members and Cypriots are associated with open-ended choices to work and live in the UK without any immigration restrictions. At micro-level, some immigrants groups in particular, the Hong Kong/Chinese, men (not women) are associated with considerable financial capital and good entrepreneurial skills and good familiarity with English fluency (Morawska, 2007).

UK-based literature suggests that Pakistani, Bangladeshi and Indian ethnic communities seem to experience substantial labour market disadvantages in the UK labour market, hence, are amongst the most underprivileged groups with respect to earnings, employment rates, occupational placement and educational attainment (Berthoud, 2000; Casciani, 2002; Clark & Lindley, 2009; Dustmann et al., 2003).

DATA AND METHODS

Empirically, my thesis aims to study a number of aspects of the socio-economic integration of diverse 'old' and 'new' immigrants relative to the UK born White, in the UK labour, under the assumption that 'old' and 'new' immigrants from similar countries of origin have entered the UK labour market under different entry immigration policies and laws, hence, are far from being homogeneous. I will now point to the particularities of both the data used to test my research hypotheses and the methodological approach adopted. My research employs full research design weights for a panel survey of households with yearly interviews called UK

Household Longitudinal Survey (UKHLS) (Knies, 2014; Lynn, 2011; UKHLS, 2014). Across all models estimated in this thesis, to capture temporal dimensions of immigrants' socio-economic integration, time dimensions have been introduced in terms of years since migration, years since migration squared. Unlike Altorjai (2013)'s study which excludes women from her analysis using the same data set [13], the analytical sample for all my three papers in this thesis includes information for both men and women of the following aggregate groups: 'UK born White's, 'All immigrants', 'old' and 'new' immigrants (this option follows the approach advanced by socio integration theories). All young people below sixteen years of age are excluded since the research focus is on the economically active population (including those who are unemployed actively seeking for work), i.e. adult employees in the UK labour market for whom data on gross monthly pay, country of birth, occupation in current job, school leaving age and year came to the UK (applicable to immigrants only) were successfully collected.

Throughout this thesis, when referring to immigrants I am including all respondents who indicated that their country of birth was not any of the following UK countries: England, Scotland, Wales and Northern Ireland (*own working definition*).

The UKHLS is a new longitudinal annual survey of people living and working in the UK, capturing important information about socio-economic circumstances and attitudes of people living in 40,000 UK households (Knies, 2014; Lynn, 2009, 2011). The UKHLS data collection for a single wave is scheduled for 24 months (Knies, 2014). The questionnaire details, sampling and coding techniques are available at *http://data.understandingsociety.org.uk*. The UKHLS asks direct questions to adult individual respondents (both for the 'UK–born White and immigrants) typically on first job after leaving school, i.e., *"What was your own first job after leaving full-time education? Please tell me the exact job title and describe the work you did?"*[14], as well as standard questions about country of birth, school leaving age and highest qualifications obtained, age, marital status, year came to the UK (for immigrants only) and number of children in the household. The survey is based on a sample of approximately 40,000 households living and working in the UK. More significantly, the UKHLS distinguishes UK-born and foreign-born people, not to mention its

13 'The analytical sample includes male respondents aged 16+ who worked in the week before the data collection or were away from work due to holiday, sick leave, or other reasons but reported a relevant Standard Occupational Classification Code…[the] retired and those in full time education are excluded in the analytical sample' (Altorjai, 2013, p. 12)

14 Source: http://surveynet.ac.uk/index "current job social class "accessed 12/10/2012.

inclusion of an ethnic minority boost sample (approximately 1,000 adults or more for groups such as Indians, Pakistanis, Bangladeshis, Caribbean and Africans) (Lynn, 2009).

Furthermore, the UKHLS sample consists of a new large General Population Sample (GPS) plus four other components (the Ethnic Minority Boost Sample (EMBS), the General Population Comparison Sample (GPCS), the former British Household Panel Study (BHPS) sample and, last but not least, an Innovation Panel sample (IPS) (Ibid, p. 6). Lynn (2009) offers a comprehensive discussion of the five UKHLS components as well as in UKHLS study manual, waves 1-4 (Knies 2014, pp.9-11). The yearly surveys for the data in question, incorporates stratified multi-stage sample design in each case (ibid). All wave 1 interviews were conducted between the 8th January 2009 and ended on 7th March 2011 (full interview 81.8%) , wave 2 main survey fieldwork started on 12th of January 2010 and ended on 27th March 2012 (all responding 76.2%), wave 3 main survey fieldwork started 7th of January 2011 and ended on the 12th of July 2013 (all responding 76.1%), wave 4 main fieldwork started on 8th January 2012, ending on the 19th June 2013 (all responding 80.7%) (Knies, 2014, pp. 16-27). The UKHLS data is also a multi-topic household survey and collects data about diverse demographic groups, with a primary aim of understanding their social and economic dynamics at both household and individual level (Knies, 2014). The Institute for Social and Economic Research (ISER) is responsible for the scientific coordination of this survey (UKHLS, 2014). The data cited on tables and figures throughout the thesis are my own computed from UKHLS data (2009-13), unless otherwise stated.

Additionally, for my panel data analysis in the third chapter, the resulting data set includes household identification numbers for each wave (1 - 4) since households are likely to vary over time (is time variant) (Andreß, Golsch, & Schmidt, 2013). Why? The answer lays in the fact that (as an example), a respondent (in my case immigrant) may switch into another household due to marriage, or found new household after getting a job or promotion, hence the need to merge the corresponding household data into the master data for each wave.[15]

[15] using "g:\waves 1-4 ukhls\6614stata11_se_0bb6ed127033d42d2cecea2f2038f954\all waves 1-4\ukda-6614-stata11_se\stata11_se\a_indresp.dta", clear
Merge m:1 a_hid using "g:\waves 1-4 ukhls\new /// data2015\6614stata11_se_0bb6ed127033d42d2cecea2f2038f954\ukda-6614-stata11_se\stata11_se\a_hhresp.dta" (same procedure was repeated for wave 2,3 and 4 before appending).

In order to capture the complexity of the sampling design of the UKHLS[16], I have taken into account the weighting variables provided (cross-sectional and longitudinal). In alliance with frame related errors, Knies (2014, pp. 40- 56) asserts that carrying out an unweighted analysis based on UKHLS data will not correctly reflect the population structure , unless the assumptions below are true:

- People who responded at Wave 1 are the same with respect to the output estimates as those who did not; that people who continued to respond at later waves are the same as those who did not; and that people who responded to each particular instrument used in the analysis (individual interview, self- completion questionnaire) are the same as those who did not ;
- People who live at an address with more than three dwellings or more than three households are the same as those who don't;
- All estimates of interest are the same in Northern Ireland as in the rest of the UK.

Technically, estimates only based on survey respondents with no adjustment for nonresponse represent the respondent subpopulation only, and not the entire frame population (Levy & Lemeshow, 2013). For detailed discussion of multi-stage sampling procedures see (Levy & Lemeshow, 2013) and for practical implementation of weights using Stata software see examples in Rabe-Hesketh and Skrondal (2012); (Rabe-Hesketh & Skrondal, 2006). By definition, weights refer to inverse probabilities of ultimate sample selection at each stage at all levels of clustered sampling, correcting for factors such as survey design, non-response and aligning population proportions (Levy & Lemeshow, 2013).

According to Knies (2014) units at each corresponding level were selected with unequal probabilities, hence, the need to use full design weights for any UKHLS based analysis. It would be a fundamental error if such data were to be treated as a simple random sample with no nonresponse or coverage error. In that context implementing full sampling design weights will correct for non-inclusion, oversampling and postratification (Levy & Lemeshow, 2013). More specifically for the UKHLS data, according to Knies (2014, p. 59) individual design weights will correct for:

- Unequal probability of selection due to boost in Northern Ireland—

16 UKHLS is composed of clusters (primary sampling units (PSUs)) were included in the first stage (the target population), sub-clusters in the second stage were configured (which is the frame population) up until elementary units were sampled at the final stage (which is the respondent population for each wave) (Knies, 2014).

General Population Sample (GPS) selection probabilities in Northern Ireland are approximately twice those in other parts of the UK;

- Unequal probability of selection into the Ethnic Minority Boost (EMB)—which vary considerably between areas, depending on the ethnic mix of the area and composition of the household, i.e., households in high density areas with at least one ethnic minority were weighted to account for combined probability of being selected as part of GPS or as part of EMB samples;

- The selection probability of households in a dwelling with more than three households or at an address with more than three dwellings is adjusted for the fact that only three such households were selected from the same address. For more detailed information on non EMB persons see Knies (2014, p. 59).

Heckman/ Heckprobit selection models

For the first two empirical papers presented in the thesis, country of origin groups are analysed separately by gender[17]. Why? This is in line with a consensus view held in the field literature that unlike men, women choose whether to work or not, hence, an assumption of women's random participation at the work place is very unlikely (Becker, 1993a; Cobb-Clark, 1993; Gorgens, 2002). More importantly, such an approach takes into cognizance that women's years and working hours in the labour market experience interruptions attributed to family formation, and not continuous (Heckman, 1979). To put this acknowledgement into context, I take into account a typical exemplar of how women's wages can be predicted based on their education and age, whilst taking cognizance of their labour market experience interruptions.[18] The illustration in question uses an artificially constructed sample of 2,000 women, with only wage data for 1,343 of them. Arithmetically, this implies that 637 women were not employed so did not receive wages. A first attempt ran just a simple-minded regression model comprising of only 1,343 women (restricted observations with

[17] The situation is different in the third empirical chapter in which the gender for country origin groups are pooled together to improve analytic sample for subpopulation groups of interest. This is one of the drawbacks of using strict balanced panel models, hence, separating men and women would adversely affect statistical power of my panel models for small immigrant groups (men and women), i.e., due to loss of many immigrants attributed to drop-out mechanisms—panel attrition and non-employment (Cappellari & Jenkins, 2004; Knies, 2014; Lynn, 2011).

[18] This illustrative example is taken from http://www.gseis.ucla.educ/courses/ed231c/notes3/selection.html, accessed 3/17/2016

wage data only)[19]. Such an analysis would be superb if, in fact, the missing wage data pertaining to the 637 women were missing *completely at random* (Cappellari & Jenkins, 2004). Deriving insights from Heckman (1979), the decision to work or not to work was made by individual woman, thusly, implying that those women not working constitute a *self-selected sample* and not *a random sample* (ibid). It is also likely that some of the women that would earn low wages choose not to work, hence would explain much of the missing wage data (ibid). Concomitantly, it is also likely that ignoring the *self-selected sample* was proved in the exemplar in question to overestimate the actual wages of women in the given population[20]. To avoid such an outcome, the non-working women' information provided was incorporated by replacing missing wages with zeros (i.e., by generating a wage0 variable)—intuition here was driven by the aim to sustain an analytic sample of 2000 women.[21] Unfortunately, such an analysis was equally found to be troubling –whilst the analytic sample was maintained, using wage0 was not a fair estimate of what the women would have earned if they had chosen to work, hence such an attempt is criticised in field literature in the sense that using a wage0 model underestimates the wages of women in the given population (Becker, 1993a; Cobb-Clark, 1993; Gorgens, 2002).

The solution in terms of predicting women's wages, therefore lays with use of a *Heckman/Heckprobit selection model*[22] —it's output includes a likelihood ratio test of rho (ρ) = 0 (Heckman 1976; Stata Corp, 2013).

Generically, a *Heckman/Heckprobit selection model* is a two equation model configured as follows. First, there regression model,

$$y_j = x_j\beta + u_{1j} > 0 \qquad (\textit{equation 1})$$

And second, to get consistent in the case when selection is non-ignorable, a selection model is configured as follows,

$$z_{j\gamma} + u_{2j} > 0 \qquad (\textit{equation 2})$$

Where the following holds,

[19] *regress wage education age and then predict pwage (ibid)*
[20] See footnote 18.
[21] This implies generating a *wage0 variable , then regress wage education age and then predict pwage0 (ibid)*
[22] Heckprobit selection model works in a manner very similar to heckman except that the response variable is binary—hence *heckprobit* in the first empirical paper, put differently, stands for heckman probit estimation (see Stata 14 manual).

$u_1 \sim N(0, 1)$; $u_2 \sim N(0, 1)$ and $corr(u_1, u_2) = \rho$.

Here, y is the dependent variable (binary or continuous), β signifying an array number of estimates or values for each x-variable in the model, γ denotes ancillary/subsidiary statistics of z**.** When rho (ρ) = 0, OLS regression provides unbiased estimates, when $\rho \sim = 0$ the OLS are biased. In the regression model, women's probability of being employed is considered depending on a set of demographic and socio-economic attributes (Demireva, 2011), such selection mechanisms are not ignorable (Cappellari & Jenkins, 2004). The most famous application of this approach is the model of earnings/wage item non-response by Nobel –prize winner James Heckman (1974, 1976, 1979), initially applied to approximation of the determinants women's work hours and accounting for the fact that not all women were employed (Cappellari & Jenkins, 2004). In this context, the heckman/heckprobit selection model uses information from non-working women to improve the estimates of the parameters in the regression model (StataCorp, 2014; Van de Ven & Van Pragg, 1981).

Application of the heckman/heckprobit selection model to the exemplar I used in the preceding paragraphs was found to correctly predict the wages of women in the given population. In the same vein, application of the heckman selection model by Richard, Zabalza, and Barton (1980, p. 60) predicted that

> a woman [with a working husband white and not Irish], aged 25-34, and living in Greater London…. if she has one child and that child is under three, she has a probability of participation that is about 65 percentage points lower than someone with same characteristics but no children. If her youngest child is between three and six, her probability of participation is about 41 percentage points less, and if the child is between six and ten, only 16 percentage points less. If child is fourteen is above fourteen, its effect on participation is either positive or is insignificant.

Recently, Demireva (2011, p.642) applying selection model asserts that "the selection model explains a lot of disadvantage of migrant women in comparison with the standard probit model." My application of the selection model on old and 'new' immigrant country of origin group women, confirm similar pattern of results. Applying selection model to country of origin men groups, the rho (ρ) is insignificant, clearly indicating that heckman/heckprobit selection model is not an improvement on the alternative regression models used in each empirical chapter—implying that in each case the selection and outcome equations are not significantly correlated (Demireva, 2011).

Therefore my first two empirical chapters takes cognizance of insights of James

Heckman's analytic procedures on estimating women country of origin groups' probabilities of access (or lack of access) to the professional class as well as determining their susceptibility to pay asymmetry in the UK labour market in my paper one and paper two respectively—i.e., accounting for selection bias correction factors: marital status, number of children mothered, age, education years and source of qualification— in line with field literature I found out that such factors explain more labour market disadvantages for mainly women country of origin groups ('old' and 'new') compared to men country of origin groups ('old' and 'new')—in which the rho (ρ) was insignificant and not an improvement alternative to probit model based estimates which are reported. Given this context, the heckprobit and heckman selection models were only adopted for women country of origin groups, as will become apparent in my paper one and paper two, with the exception of paper three (for reasons I come to later—see analysis focus section of paper three). The estimates provided are therefore considered as consistent, asymptotically efficient and were all derived using Stata14 MP Version software. However, for the sake of avoiding clutter on estimated results tables, selection equation model estimate results are not reported.[23]

Application of complex survey weights to Probit and heckman probit models

Survey literature suggests that when a researcher is performing a standard analysis using OLS regression, one would simply need to use a *pweight* variable designated as '*wij',* this is because when standard regression is fitted to survey data, finite population values are considered as independent, hence, the "log likelihood is a sum which can be estimated consistently by simple weighting of the sample observations" (Pfeffermann, Skinner, Holmes, Goldstein, & Rasbash, 1998, p. 24). In this context, all my analyses in the thesis incorporate the complex design of the UKHLS data. In the UKHLS data manual, Knies (2014, p. 50) suggests that "to obtain estimate that correctly take into account the sample design user must specify the design weight variables using the svyset for an example: *svyset w_psy [pweight=w_inpxus_xw],strata (a_strata), then any compatible commands simply needs to be prefixed with "svy", for example :*
svy: logistic depvar variable 1 variable 2 variable3."

Unfortunately the prescribed command would not produce standard errors when confronted with some strata with single units, as well as attention to svy adjustments

[23] Table of predicted results comparing the estimates of probit and Heckman/Heckprobit models for both men and women country of origin groups is not reported in the thesis.

to accommodate subpopulation analyses without deleting PSUs –i.e., restriction of estimation to subpopulations of interest (West, Bergland, & Heeringa, 2008) . When I used the command svyset for the UKHLS wave 1 and applied the *svy Stata* command on my first logistic regression, I encountered a problem: missing standard errors – this was due to the existence of single unit strata, which I solve by centering all singletons to the population mean as follows:

svyset a_psy [pweight=a_inpxus_xw], strata (a_strata) single unit(centered) (Adkins & Hill, 2007; StataCorp, 2014) .

If the data set is subset (meaning that observations not to be included in the subpopulation are deleted from the data set), the standard errors of the estimates cannot be calculated correctly (West, Bergland, et al., 2008). When the subpopulation option is used, only the cases defined by the subpopulation are used in the calculation of the estimate, but, all cases are used in the calculation of the standard errors (ibid). According to West, Bergland, et al. (2008, p. 522) "taking the conditional approach:

[svy (if sex==1): regress depvar +variable 1+ variable2,+ …,+variable k] (ibid).

Such an approach prevents the pitfall incident of one encountering deletion of PSUs that define part of the total sample resulting in wrong standard errors, though estimates will be correct (ibid). Therefore, the above predicament can be avoided by implementing unconditional methods of variance estimation for all point estimates and standard errors are calculated based on the total sample (Ibid). When using a Taylor series linearization variance estimation method, i.e., which is the default variance estimation technique associated with *svy Stata suite commands in function* (StataCorp, 2014)), a "design strata can be denoted by h (h=1, 2, …, H), first stage within strata by α (α=*1, 2,3 ...,* α_h) and sample elements within PSUs by i ($i=1,2,\ldots,n_{h\alpha}$)" (West, Berglund , & Heeringa, 2008, p. 523). In this context, to account for unequal probability of nonresponse, selection and possibly postratification factors, the sampling weight of i is denoted by w_{hai} and the specific subpopulation is denoted by S (ibid). Therefore an estimate of the total for a variable Y in a subpopulation S is computed as follows:

$\widehat{Ys} = \sum_{h=1}^{H} \sum_{a=1}^{a_h} \sum_{i=1}^{n_{ha}} w_{hai}\, I_{s,hai}\, Y_{hai}$ (Cochran, 1977; West, Bergland, et al., 2008),

where S is a specific subpopulation group of interest. Here denote design strata. The first stage PSUs within strata are designated by taking into consideration factors such as nonresponse, unequal probability of selection, and possibly post stratification, the

sampling weight for element *i* is denoted by *whai* , where *I* represents an indicator equal to 1 if sample element 'I' belongs to subpopulation *S,* and *0* otherwise (ibid,p.523*).* With the unconditional subpopulation method a true/false variable for six groups of country of origin groups (forthcoming) were defined following the footsteps of West, Bergland, et al. (2008) and methodological procedural steps using the Stata14 online guide for subpopulation syntax (StataCorp, 2014). *Within the given context,* subpopulation sizes within strata (and PSUs if applicable) will vary accordingly (ibid). However, to capture the full sample complex design of the *UKHLS data,* the unconditional subpopulation *designation of 'old men immigrants' and regression on this group* were implemented *in Stata14 as follows:*
xi: svy, subpop (female & old immigrants):meglm depvar i. Variable 1 i. Variable 2+...Variable k.

Conversely, one can still use a conditional approach, i.e., offsetting the Taylor series linearization variance estimation method, and using a replication method for variance estimation instead, in particular, using what is called the Jacknife repeated replication or balanced repeated replication (are explained in detail in the Stata online help menu under svy.pdf, (StataCorp, 2014). It must be emphasized that when one uses survey weights halfway (i.e., not considering stratification and clustering of the data in question) on can obtain proper design-based point estimates, but, the standard errors, confidence intervals and test statics will be wrong (ibid, p.75). Cognizance of sample design weights are even more emphasized when dealing with clustered/ multilevel models, I discuss this next.

Clustered/ Multilevel Models/correlated data and rescaling of weights

I start off this section by considering how a generic multilevel model is configured, but, with some caution. According to Jeffrey Wooldridge (2003, p. 5), "[f]or the most part, an econometric analysis begins with the specification of an econometric model, without consideration of the details of the model's creation". Within the given context, a multilevel model can be configured as a generalization of a linear regression, where intercepts and possibly slopes are allowed to vary by group (Gelman & Hill, 2009). With insights from the same literature and starting with a classical regression model with one predictor, $yi = \alpha + Bxi + ei$, it can be generalized into a varying intercept model as follows: $yi = \alpha_{j[i]} + Bxi + \varepsilon i$, and the varying intercept, – varying slope as $yi = \alpha_{j[i]} + Bx_{[i]} + \varepsilon i$ (ibid, p.251). On what concerns notation, Units i =1,…, n – are the smallest units of measurement, y = y1,…, y_n are

the unit level data being tested. Regression predictors are presented by an n * k matrix X, so that the predicted values is $\hat{y} = X\beta$, where $\hat{y}$ and β are column vectors of length n and k, respectively (ibid, p.251).

Multilevel models are used to analyse cluster-correlated data, which arise when there is a nested structure in the data, which is also regarded as multilevel/ hierarchical data,—in social sciences, this coincides with studies in which individuals or groups can be grouped to assess an outcome of interest (Fitzmaurice & Laird, 1995; Guierrez, 2008; Rabe-Hesketh & Skrondal, 2012; Steenbergen & Jones, 2002; Sturgis, Brunton-Smith, Read, & Allum, 2011). Furthermore, the clustering of data can be due to a naturally occurring hierarchy in a given target population, and by convention, the lowest level of the hierarchy is called a level 1 unit (Fitzmaurice & Laird, 1995). Good examples of studies using clustered/nested data are abundant in education-related studies, i.e., observation of students (level 1 units), nested within classrooms (level 2 units) and classrooms nested within schools (level 3). Therefore, deriving insights from Gelman and Hill (2009), it is possible to study pay asymmetry of country origin groups by gender within and across occupations. I now turn to three key motivations why I use a multilevel approach to studying pay asymmetry within and across country of origin groups (men and women) in the UK labour market.

Gelman and Hill (2009, p. 246) suggest a number of important reasons in favour of the multilevel/clustered empirical approach (which informs my paper two methodology), whether for purposes of "studying causal inferences, variation, or prediction of future outcomes", in my case country of origin groups by gender – three key reasons include (in no particular order): (i) "accounting for individual and group-level variation in estimating group-level regression coefficients"; (ii) "modelling variation among [group]-level regression coefficients". While this could be implemented using classical regression predictor variables; however, multilevel modelling makes it more convenient to model the variation of coefficients across groups or accounting for group–level variation. (iii) More importantly, one consequential merit of adapting a multilevel model approach is the fact that measurements on units within a cluster are more similar than measurements on units in different clusters. In fact, multilevel modelling, can be expressed in terms of correlation among the measurements on units in different clusters (e.g., two members selected arbitrarily from the same country of origin are expected to respond more similarly than two members selected from different country of origin groups) (Ibid).

However, not offsetting the multilevel modelling motivations already presented in the preceding paragraph, are also note here four potential challenges based on Pfeffermann et al. (1998), Rabe - Hesketh and Skrondal (2006), Gelman and Hill (2009) and Hox (2010) These include: (i) additional complexity of coefficients varying by group; (ii) data structure in the population have to satisfy a hierarchical characteristic and the sample must be derived from the same hierarchical population; (iii) "each level of the model corresponds to its own regression with its own set of assumptions such as additivity, linearity, independence, equal variance and normality" (Gelman & Hill, 2009, p. 247). When the number of groups is small (less than five), there is typically an insufficient amount of information to accurately estimate group-level variation (ibid). However, the outlined challenges do not apply in this paper, given that I have more than five groups (fourteen origin country groups) derived from the UKHLS wave 1 data—is an extensively large dataset and quite representative in its coverage of the UK general population regardless of origin and citizenship (Lynn, 2009, 2011). Next, and more importantly, a fourth challenge I turn to discuss in detail pertains to rescaling of weights associated with multilevel modelling which I apply in paper two.

Rescaling of weights with multilevel models (an overview)

As is apparent in paper two, rescaling of sample observation weights were adjusted based on Pfeffermann et al. (1998), Rabe-Hesketh and Skrondal (2006) and Chantala, Blanchette, and Suchindran (2011). Why? The answer lays in the fact that when using mixed-effects multi-level/clustered regression estimation methods the following apply: first, finite population values are not independent in such models—i.e., the log-likelihood is not a simple finite population sum (Pfeffermann et al., 1998; Rabe-Hesketh & Skrondal, 2006), hence, cannot be estimated by simply svy-setting weights in the manner suggested by Knies (2014, p. 50). A second consequent reason why weighting for cluster/multilevel models is different relates to the fact that the "overall inclusion probabilities of the ultimate sample elements do not carry sufficient information for appropriate bias correction, unlike in the single regressions" (Rabe-Hesketh & Skrondal, 2006, p. 24).

To shed light on the approach to rescaling of survey complex weights pertaining to UKHLS data—implemented in my paper two (forthcoming), I derive insights from survey oriented literature (both classical and contemporary) (Cochran, 1977; Pfeffermann et al., 1998; Rabe-Hesketh & Skrondal, 2006) and many others of

relevance to the subject in question. A point worth emphasizing here is the intuition that weights when applied to clustered/multilevel regressions enter a log likelihood function at both individual level and cluster level, and for that to be accounted for properly, one has to follow conditional probability rules suggested by Pfeffermann et al. (1998) as follows:

$w_{ij} = w_j w_{i|j} = \frac{N_{h(ij)}}{n_{h(i,j)}} \frac{M_{k(j)}}{m_{k(j)}}$ (Pfeffermann et al., 1998),

where $M_{k(j)}$ designates number of level 2 units in the population with the same characteristics as level 2 unit *j* and $m_{k(j)}$ represents the number of level 2 units in the sample with the same characteristics as level 2 unit$_j$ $N_{h(i,j)}$ is the number of units in the population in level 2 unit$_j$ which have the same level 1 characteristics as unit i in level 2 unit j and $n_{h(ij)}$ is the number of units in the sample in level 2 unit $_j$ which have the same level 1 characteristics as unit I in level 2 unit$_j$. Generally, $w_{i|j}$ has a standardized version $w^*_{i|j}$, = $wi|j \frac{n_j}{\sum_{i=1}^{nj} w_{i|j}}$, where n_j is the number of level 1 units in level 2 unit j in the sample, hence, $w^*_{i|j}$ are therefore $w_{i|j}$ adjusted so that for each j, $\sum_{i=1}^{n_j} w^*_{i|j} = n_j$ (Ibid, p.14). If one divides both sides by n_j, it implies that $w^*_{i|j}$ is adjusted so that the mean weight for each level 2 unit*j* is 1 (ibid). Fortunately, a program called PWIGLS created by Chantala, Blanchette, & Suchindran (2011) incorporates Pfeffermann et al. (1998)'s conditional probability algorithm in a number of statistical software, including Stata. In practice the PWIGLS program selects units at two levels of sampling, i.e., Primary Sampling Unit (PSU) and Final Sampling Unit (FSU). Basically Chantala, Blanchette, & Suchindran (2011)'s PWIGLS program replicates Pfeffermann et al. (1998)'s conditional probability rules to be user friendly using gllam(Stata), MlwiN, Mplus and LISREL. It does this by computing an adjustment factor for each PSU by summing the within-PSU sampling weight for each unit *i* sampled in PSU $_j$ and then dividing by the number sampled within PSU $_j$ as indicated below:

$\text{psu\_wt}_j = \frac{\sum_i^{n_j} \text{fsu\_wt}_{i|j}}{n_j} = 1/[\Pr(PSU_j selected)]$ (Chantala et al., 2011)

Note here, for the calculation of PSU weights I follow

The level 1 sampling weight for each unit *i* sampled within PSU $_j$ is then computed by dividing the within-PSU sampling weight for each unit *i* sampled in PSU $_j$ by the level 2 adjustment factor as shown below:

$\text{fsu\_m2wt}_j = \frac{\sum_i^{n_j} \text{fsu\_wt}_{i|j}}{\text{psu\_m2wt}_j} = 1/\Pr[\text{unit}_i \text{ selected} | PSU_j selected] = spw$ (ibid).

Using the new Stata14 syntax, I implemented Chantala et al. (2011)'s PWIGLS weights.

However, even though the suggested PWIGLS program is very user friendly with Stata software, however, rescaling of weights remain arbitrary, hence, the rescaled weights in paper two based on Chantala et al. (2011)'s PWIGLS program must be interpreted with a pinch of salt.

To account for the complexity of the UKHLS data and incorporation of rescaled weights, the svyset was implemented as follows:
psu,weight(method_2_level_2_adjust)||_n,
weight(method_2_level_1_weight)singleunit (centered) using Stata 14 software.

For algorithmic proof of weighting differences between OLS and clustered/ multilevel models, see Pfeffermann et al. (1998, pp. 25-30).

Therefore weighted pay asymmetry using a multilevel mixed-effects generalized linear model (meglm) for men country of origin groups, and a weighted heckman selection model for women country of origin groups, both fitted using Stata 14 programs, i.e., *meglm* and *heckman* respectively. The meglm allows a variety of distributions for the response variable *y*, conditional on Gaussian distributed random effects (StataCorp, 2014). The *heckman command* fits a regression model with a selection equation using a full maximum likelihood estimation method (ibid). For full Stata syntax for the two estimation methods in question, see help menu for *MEGLM* and *heckman* from the Stata syntax command window.

Strict Balanced Panel Approach

Research based on panel data is not new, it dates back to the 1940s, with the "[f]irst classical panel study (also known as the Erie county Study) was an analysis of the voting behaviour during the 1940 presidential campaign, and was conducted by the Bureau of Applied Social Research of Columbia University under the direction of Paul F. Lazarsfield (Andreß et al., 2013). Currently, numerous longitudinal studies are available across life and social sciences and the UKHLS is no exception.

Unlike the first two empirical papers' approaches, paper three uses an analytical approach, which differs both substantively and methodologically. Substantively, paper three explores the heterogeneity in the country of origin groups studied in terms of 'observable' and 'unobservable' characteristics (Fitzmaurice, Laird, & Ware, 2012) pertaining to their occupational transitions and earning trajectories relative to the UK born white's. Methodologically, it uses a strict balanced panel approach (Andreß et al., 2013)—is a step forward in the analysis of 'old' and 'new' immigrants' assimilation in the UK as it includes overtime changes, extending the analysis beyond the observable characteristics stressed in field literature, see for an example Dustmann et al. (2003). Making meaningful comparisons and studying the differences between immigrants and natives in terms of labour market performance is certainly a very difficult task, especially when this is attempted using cross-sectional data (an issue I highlight in the first two empirical papers). It is also important to note that paper three uses random effects not fixed effects[24] (Torres-Reyna, 2010) to account for individual heterogeneity characteristics within and between country of origin groups' occupational transitions and earning trajectories using a strictly balanced sample of individuals from wave 2 to wave 4 (Andreß et al.,2013). In terms of empirical analysis it uses one global model based on earnings (i.e., I make a strong assumption that earnings mirror individuals' occupational status), instead of testing it, for each analytical group ('old', 'new', male, female immigrants relative to the UK born white). An advantage of random effects is that one can include time invariant variables (i.e., gender—in a fixed effects model such variables are absorbed by the intercept) (Torres-Reyna, 2010).

[24] Fixed effects are not ideal for analysing groups' earning trajectories overtime (will not get estimates for groups since they are time invariant, full discussion is given in the third empirical paper later (Torres-Reyna, 2010).

By definition, a panel data analysis apart from imposing a time dimension component to analytic units (cross section or group of people), it allows the researcher to control for heterogeneity among individuals (associated with unobserved or unmeasurable cultural factors), the abilities of individuals, change over time, but, not across entities (i.e., national laws, inclusion and immigration policies just to mention a few examples) (Andreß et al., 2013; Guierrez, 2008; Torres-Reyna, 2010; Yaffee, 2003). Why using a weighted strict balanced panel approach in paper three? As already discussed in preceding paragraphs, the use of weighting adjustments for non-response is 'a one size fits all' approach that is 'parsimonious and useful' in that a single weighting adjustment will typically:

(i) use a set of covariates that may be weakly associated with many parameters of interest, but strongly with any of them, and

(ii) be used upon the set of sample units defined in some way as "unit respondents", even though a subset of these will not be used in estimation (either by choice—subgroup estimation or because data is unavailable due to item non response); even for full-sample analysis, potentially a different subset will be unusable for each different survey estimate (Lynn & Kaminska, 2010).

Therefore, with respect to the outlined limitations, the definition of unit respondents is clearly crucial, hence, if the definition is too broad, then many units with weights will in fact be excluded from the analysis—if the opposite apply—definition too narrow, then cases that could have been used in estimation will be excluded as they do not have weights—clearly there is a trade-off to be made (ibid). For a more nuanced discussion of the weighting strategy for UKHLS understanding society data, for an example see Lynn and Kamiska's (2010) paper.

In the case of using four waves of UKHLS data (which is my case in my paper three), it should be clear that the difference between the broadest and narrowest definitions of unit non-response can be vast attributed to many components of non-response (items, instruments, waves etc.) (Cappellari & Jenkins, 2004). It is therefore unlikely that there will ever be a single definition or method that will be adequate for most analysis purposes (ibid). Therefore within the given context, the longitudinal analysis of occupational transitions and earning trajectories of country of origin groups in paper 3, I use a strictly balanced panel across pooled sexes of country origin groups, i.e., deriving insights from Baltagi (2008), Andreß et al. (2013) and (Bryan, 2015), just to mention a few. Such a methodological attempt is line with

minimizing the problem of unit non-response, in particular for ethnic minorities in subsequent UKHLS three waves after wave 1 (Lynn, 2011). I therefore use the "main longitudinal adult interview weight d_indinus_lw" (Knies, 2014, p. 54) (i.e., to account for units dropping out of the UKHLS sample due to different components of unit nonresponse (Knies, 2014). Additionally, in a longitudinal study, such as the UKHLS, one is characteristically "interested in having pairs of observations on same individuals to investigate individual level change over time" (ibid, p.23), hence, to achieve this primary goal, the wave 4 longitudinal weight was copied to each respondent's weight variable row retrospectively, i.e., for wave 2 and wave 3 respectively. The weight will be zero for all waves if the individual missed any of the waves (1-4) (Knies, 2014). Note here, with the UKHLS data, the default is the wave 1 cross-sectional weight and one does not have to do any additional computations as suggested in Andreß et al. (2013).

More importantly, as is the case with other estimations in Stata, standard errors calculated based on full design weights are deemed robust—however, in the case of clustered/ multilevel model, the robust standard errors are clustered at the top level (StataCorp13), hence the need for rescaling weights.

However, due to the limitations in terms of Stata software capabilities on XT (*time series*) data manipulations, I was found wanting in terms of implementing full survey design weights in this empirical chapter, hence, halfway survey weights techniques were implemented instead (pending challenge to all Stata users, i.e., including this author as well).

A famous test for random effects is called the Breusch –Pagan Multiplier (LM) was applied to test panel data model effect—i.e., to help deciding between a random effects regression and a simple OLS regression models (Torres-Reyna, 2010). The null hypothesis in the LM test is that variances across entities is zero units (no panel effect), and the command in Stata is *xttest0* (ibid) – in my case, clearly the 'no panel effect', is rejected, in favour of RE, see Table 3.8 in Appendix A of the thesis.

Last but not least, I discuss the classification of country of origin groups maintained throughout the three papers presented in this thesis next.

Measuring country of Origin groups' socio-economic integration outcomes in the UK labour market: using a conceptual classification method an overview

Berkeley et al. (2006, p. 1) assert that "[a]ll migrants are 'new' at the time of entry, despite varied entry year points and diversity of immigrants' experiences and backgrounds". Consequently, layers of immigrants build up over time, hence, newness becomes relative and worth contextualizing in the empirical analysis. In that context, in all the models presented I clearly distinguish old (pre-1990 immigrants) and 'new' immigrants (immigrants who arrived in 1990 and post 1990) (Demireva, 2011). This distinction is important, in the UK labour market because immigration policies and laws have been transforming over the years: as an example non-European immigrants arriving after 2004 have been affected by different set of visa rules, hence, their socio-economic integration patterns and experiences were guided by different immigration policies and laws. 'Old' and 'new' immigrants' from a similar country of origin have been subjected to a different set of immigration rules and opportunities in the UK labour market, which implies different experiences and exposure to different immigration policies and rules (an argument mantained throughout this thesis).

Following insights from Burton et al. (2010) on the subject of operationalizing ethnic and immigrant group social categories, it is important to emphasize that surveys in which respondents are offered the opportunity to define themselves provide crucial details for the empirical analysis—respondents express strength of identity in tandem with attributes important and meaningful to them, i.e. responses to questions on their country of birth, citizenship and marital status. Despite the fact that such measures are transparent in one hand, on the other hand they do not "imply that [respondents] are being asked to fit into a single 'box' ", p. 28. Concomitantly, social categories can be extended to empirical analysis of groupness based on common factors such as social, economic and political as objective classifying attributes of country of origin groups in our case (ibid).

In that context, the configuration of the 14 countries of origin dummy variables is grounded mainly in two dimensions. First, while the UKHLS data is representative of the overall population, the number of first generation immigrants in each ethnic group and other foreign born interviewed remains small, despite 'Ethnic Boost Sample' initiative, in particular, for the following ethnic groups: Indian, Pakistani, Bangladeshi, Black Caribbean and Black African of which a minimum of 1,000 adult were interviewed from each of these groups (Knies, 2014). Second, aggregation is based on conceptual similarity— this is done to avoid tabulating many rare categories separately—i.e. two or more small categories were combined into a larger

category without obscuring groups of interests relative to some reviewed literature (Demireva, 2011). The same rule has been applied in the formulation of Old Commonwealth members (English speaking natives—USA, Canada, Australia and New Zealand), EU15, Middle East (Turkey and Cyprus), Eastern European immigrants (mainly Eastern European). In the case of New Commonwealth members, conceptual dissimilarity was regarded instead, i.e., into Pakistan, Bangladesh, Sri Lankan and Middle Eastern (Turkish and Cypriots).

More importantly, the separation of Middle Eastern immigrants also allows cross-national comparisons with other receiving countries such as Germany and the Netherlands (Ibid). Other country of origin groups include: Indian, Chinese/ Hong Kong and African immigrants—previous researches identify similar groups, hence maintaining them will allow comparisons with previous literature. Old Commonwealth immigrants in this study correspond to immigrants coming from US, New Zealand, Canada and Australia[25]. However, Irish Republic immigrants are also a separate category (hereafter Irish).

Therefore, the analytic framework developed in the overall thesis, distinguishes between 14 countries of origin social groups, divided by gender, i.e. 14 single sex male groups and 14 single sex female groups. The country of origin groups are empirically compared in each paper as follows: all immigrants relative to UK born White (men and women separately), as well as 'old' and 'new' immigrants (cohorts before and after the 1990s respectively) (Demireva, 2011), and men and women analysed separately as well. Since the UKHLS wave 1 captures important baseline data on diverse immigrant groups of interest (also has the highest interview response rate averaging 82%) (Knies, 2014), and, also being the first wave of UKHLS data, all the measures of interest on immigrants are more stable in comparison to subsequent three waves published so far, exacerbated by under coverage due to loss of respondents through attrition and item nonresponse, see Lynn (2009) for a more discussion on the UKHLS subsequent coverage on immigrants, in particular. Put plainly I explore the UKHLS' stability and highest response rates attributes of the UKHLS wave 1 data in my first two papers (forthcoming) relying on cross-sectional analysis of access or lack of access to professional class jobs and pay asymmetry respectively.

25 Demireva (2011) 's study separates US immigrants, from Canadian, New Zealanders and Australian immigrants, which I aggregate in this study on the basis that they are all English native speaking immigrants and have sizeable number of respondents in the UKHLS data set.

The first paper uses weighted probit and heckprobit selection models for men and women respectively, i.e., studying probabilities of access (or lack of access) to professional class jobs, comparing 'All men and All women (country of origin group immigrants) relative to UK born White (men and women), inspired by the hypothesis that when immigrants arrive they are at disadvantage in the labour market relative to natives with similar socio-economic demographic characteristics (Friedberg, 2000). I also discuss the occupational access (or lack of access) to professional class job probabilities by 'Old' and 'New' immigrant cohorts (for both men and women), with an in-built assumption that the two immigrant cohorts have been subjected to different immigration policies and laws in the UK labour market. On the other hand, old immigrants, due to prolonged exposure to the UK labour market, unlike 'new' immigrants, have built cohesive professional networks and information about the labour market. The groups were analytically isolated in order to capture their differences while controlling for the relevant socio-economic variables as a way of standardizing comparisons across 'old' and 'new' immigrants, an empirical procedure often taken for granted in related field studies.

Using *Meglm* and *Heckman* selection models for men and women respectively, I unconditionally examine pay asymmetry by occupation and country of origin in the UK labour market as primary determinants, while adjusting for similar socio-economic demographic variables used in the first paper. For the analysis of gross monthly pay, which is available for all adult respondents (but not proxy interviews), I use a cross-sectional adult main interview weight indinus_*xw, rescaled* to ensure that the survey design characteristics are accounted for in both point estimate(s) and variance estimation method(s) which is also a clustered regression requirement (Pfeffermann et al., 1998; Rabe-Hesketh & Skrondal, 2006; Wolter, 2007).

To ensure that statistical analyses are robust and rigorous, paper one and two uses the high quality UKHLS wave 1 data (82% interview response rate) and paper three is based on a strict balanced panel. Across the three papers comprehensive battery of statistical tests: *probit; heckprobit; predictions, multinomial, heckman meglm* (multilevel mixed-effects generalized linear model) and *xtregre2* (estimates a random effects model with weights) were used.

- Full design weights were incorporated in all analyses and testing.
- Research hypotheses and research questions are based on established theoretical approaches.

- Statistical robustness checks were implemented, including Wald test and F-statistics with adjustment to complex data survey design.
- Presentation of the standard errors, which take into account the unconditional full sample (and are not based on conditional subsample groups with exceptions due to software restrictions, i.e., with XT Stata suite commands).
- Rescaling of weights for multi-level analysis

However, it should also be noted that there are still several challenges to this field. The future research agenda should include, for example, the following aspects:

- Improvements on survey interview response rates/ data availability on immigrant communities.

Need to explore further this topic by taking into account structural level indicators/ panel study approach.

Description, Construction of Key Variables and Weights Used

Variables	Description	Construction
Dependent variables		
Profession (PROF) is a two level dummy variable	Recode Of Jbsoc00_Cc (Current Job: Soc2000 (Condensed 3 Digits Version)	PROF = 0 if SOC2000 >= 1 & SOC2000 <=45 PROF = 1 if SOC2000 > 45 & SOC2000 <=52
Log wage –the data for usual gross pay on current job	Is the log of usual gross pay per month: current job	I here used a specialized stata14 program called *hilo* to identify outliers, see section on dependent variable paper two on this variable.
Rich -two level dummy variable based on the median value of log wage, which (summary statistic).	Rich ==0 for all respondents who earnings are less than the median value of log wage. Rich ==1 for all respondents whose earnings are greater or equal to the median value of log wage.	Generating a new variable, Rich and replacing accordingly as described in the adjacent column.
Independent Variables		
Sex	Female and male indicator variable	Coded 1 for women and 0 for men
Education (EDUC)	Years of schoolings (Chiswick, 1978, 1980; Psacharopoulos, 1977)	Computed as the terminal education age, i.e., school leaving age minus five years (minimum age for school entry in the UK) (Barry, 1980).
Workforce Labour market experience (PPROLMAX)	Is a continuous variable measured in years after schooling (assumption is that all respondents were all in the labour force when out of school (Barry, 1980)	Age of Respondent minus education minus 5 (Barry, 1980; Friedberg, 2000)
Workforce labour market experience squared	As above	Raising potential labour market experience to the power of two (Potential labour market experience^2) (Jeffrey Wooldridge, 2003).
Log of Weekly worked hours	Average weekly working hours of all respondents	Log transformed weekly hours (paper two)
Log of Part time working hours	When weekly working hours are less than 30 hrs.	Generated variable capturing weekly hour less or equal to 30 hrs. (Bryan, 2015)
Economic activity variable	Same as above, but, raised to the power two to get rid of zeros	
One digit Standard	Current occupation/job at the	Recoded variable dummies based on the 51-3

occupational Classification of 2000 (SOC2000) Current job (O_Doccup) status is a 9 level categorical/dummy variable	time of interview at SOC2000, hence the following occupational classification applies O_Doccup:1 "Legislative and Management";2 "Professionals",3 "Technical & Associate Profs";4 "Clerks" ;5 "Service and Sales";6 "Agricultural and Fishery";7 "Craft" ;8 "Plant and Machine" and 9 "Elementary / routine "	digit occupations of the UKHLS variable jbsoc00_cc
Country of origin- groups	Literature and theory driven conceptualisations of country of origin14-level-dummy-variable controlling for socio-economic and geographical differences across groups used in the thesis. The country of origin groups are coded as follows: origin_country1 "UK born White ";2 "EU15";3 "Old Commonwealth" ;4 "Indian";5 "Pakistani"6 "Bangladesh",7 "African";8 "Caribbean";9 "Middle East" ;10 "Chinese";11 "Sri Lankan";12 " Eastern European ";13 "Irish" and 14 " Other "	Configured based on the UKHLS questionnaire, in particular,: "In which UK country (England, Scotland, Wales, and Northern Ireland were you born? And if not born in the UK option (to capture immigrants) where were you born**?"** p.51 of Understanding society Wave -1 questionnaire. 2/14 are immigrant –groups—social categories based on common origin, common culture and European Union membership (see Dustmann et al., 2003), as well as . Ambiguous, (+) and (-)
Global group variable (O_immigrants) which is 3-level dummy variable	This variable capture all the 14 country of origin groups using three broad classifications of the articulated groups as follows: O_immigrants:1 "UK born White" 2 'Old' Immigrants and 3 'New' immigrants	UK born White men and women are designated as O_immigrants=1, if immigrants came to the UK <=1989 and =2 if immigrants came to the UK >=1990 (Demireva, 2011)
Years since migration (YISM)	Duration in years in the UK labour market (interview year - year came to the UK). Each respondent's year of interview was recorded, and all respondents were asked the question: In which year did you first come to live in the UK, page 51of the UKHLS Wave 1 questionnaire.	Year of interview minus year came to the UK
Years since migration squared	Self- descriptive	YISM^2
Years in UK all (two level dummy)	=1 if =YISM =0 if in UK since birth	Is a dummy variable capturing years in the UK for immigrants and age if UK born
Interview year (INUK)	Self-descriptive (a very important variable, in paper 3(forthcoming)	Is a 6 level interview year categorical variable INUK is coded as follows: 0: "2009"; 2: "2010"; 3: "2011"; 4: "2012"; 5: "2013"; 6: "2014"
Source of Qualification (UKQUAL=1 for UK based qualifications)	Can I check, did you gain this qualification in the UK?	Here, the variable UKQUAL is coded 1 and 0 for 'yes' and 'no' responses respectively.
By English as first Language	A measure of English Proficiency	1 (English is first language) 0 Not Proficient English Speaker
By Economic Activity	Is a 9-level dummy variable	1=self-employed, 2=full or part time, employment, 3=unemployed, 4= retired, 5= on maternity leave, 6=looking after family or home, 7=full time student, 8=long term sick or disabled and 9 = those on a government training scheme)
By Current Legal Marital Status	"What is your current legal marital status?" Five level dummy	==1 single, never married /civ partner ==2 Married/Separated == 3 Separated & legally married == Civil/ Separated/former Civil p == 5 Divorced == 6 Widowed

Own first job: SOC 2000	A two level dummy	= 1 (if started with a nonprofessional job), and 0 (for otherwise.) This is constructed based on a question: What was your first job you had when you started working? Please tell me the exact job title and describe the work you did.
Age	Given corrected age of respondents Only 16-67 old adults are of interest	Age of Respondent as reported
Age squared	Self-descriptive	Age^2
Number of Children in household	Self-descriptive	here the categories are coded as follows:1 Childless 2 One Child ; 3 Two Children ;4 Three Children ;5 Four Children Plus
LMAge (predicted instrument variable)	Is a standard measure with mean =0 with a standard error of .999, which is practically 1 used as an instrument variable to solve endogeneity/multi-collinearity issues pertaining to the following variables: Working age, Working age squared, Labour force experience and labour force experience squared.	Used the method: principal factors on the following variables Working age, Working age square, Labour force experience and labour force experience squared, all have factor loadings more than .9, i.e., with an LR test: independent vs. saturated: chi2(6) = 7.3e+05 Prob>chi2 = 0.0000, I went ahead to predict the instrument variable in question to create the given standard measure
Empirical chapter weights	*Rationale*	*Weight (s) Construction*
First empirical chapter : uses svyset cross-sectional weight (a_indpxus_xw) using svy set Stata command (Knies, 2014).	a_indpxus_xw accounts for larger sample as it is available for all adult respondents including proxy respondents. In order svy-setting of data with full weights is implemented first before running regressions in order to capture the complexity of the sampling design of the UKHLS—correcting such factors as: survey design, non-response and aligning subpopulation proportions in my case country of origin groups (men and women). [26] Additionally , strata with single units are centered on the population mean, lest standard errors cannot be computed for single units (Adkins & Hill, 2007; StataCorp, 2014) (Levy & Lemeshow, 2013) or simply to correctly reflect in the analytic subpopulation samples (i.e., country of origin groups of men and women) (Knies, 2014).	Weight selection choice carried out using the following Stata syntax: *tabstat a_indpxus_xw a_indinus_xw a_indscus_xw, stat (mean min max sd) by a_ivfio longstub nototal*[27] To check the sample design features of the UKHLS data in question, the following syntax was used : *tabstat a_psu a_strata, stat(min max sd) by (country of origin) longstub nototal* where *psu is the variable representing the primary sampling unit and strata is the variable representing the stratification variable* Analytic weights were svyset in this empirical chapter as follows: *Svyset /// a_psu[pweight=a_indpxus_xw],strata(a_strata) singleunit (centered)* (Adkins & Hill, 2007; StataCorp, 2014).
Second empirical chapter :uses rescaled weight (indinus_xw) of the adult main interview	The analysis of gross monthly pay,(which is log transformed in the analysis) is available for all adult respondents, and not proxy respondents—hence other cross sectional weights are not applicable, hence, in paper two, the cross-sectional adult main interview weight	Weight application check on the dependent variable of interest, in my case gross monthly pay (a_paygu_dv) justifies my use of a_indinus_xw opposed to other cross sectional weights mentioned above. Therefore rescaling of weights were carried out as follows:

26 UKHLS is composed of clusters (primary sampling units (PSUs)) were included in the first stage (the target population), sub-clusters in the second stage were configured (which is the frame population) up until elementary units were sampled at the final stage (which is the respondent population for each wave) (Knies, 2014).

[27] This syntax was used to check the distributions of cross sectional respondent weights and see how they vary interview outcome (a_ivfio)

	(indinus_xw) was used, i.e., rescaled in line with field literature, see (Pfeffermann et al., 1998; Rabe-Hesketh & Skrondal, 2006; Wolter, 2007). Rescaling of svy weights were computed following procedures articulated in Rabe-Hesketh and Skrondal (2006, pp. 824-825)'s insights: method 1 and Method 2 techniques shown in the adjacent column.	*Method 1*: *generate sqw =(a_indinus_xw *(a_indinus_xw)* *by UKOCCP:egen sumw=sum(a_indinus_xw)* *by UKOCCP: egen sumsqw = sum(sqw)* *generate pst1s1= (indinus_xw *sumw/sumsqw)* *method 2:egen nj= count(Sex),* *by(psu) gen Spg2 = a_indinus_xw*nj/sumspp* Rabe-Hesketh and Skrondal (2006, pp. 824-825) The rescaled analytic weights were svyset in this empirical chapter as follows: *svyset UKOCCP, weight (fpc) strata(strata) singleunit(centered)|| _n, weight(pst1s1)*
Third empirical chapter uses the longitudinal weight of the main adult interview called *d_indinus_lw* (Knies, 2014)	As already discussed above, the analysis of gross monthly pay is only available for all adult respondents, and not proxy interviews), hence, the use of a longitudinal adult main interview weight (*d_indinus_lw)* in the third empirical paper, the only difference here is that I use it in its longitudinal form. Why? This is because my analysis is restricted to a strict balanced panel data— i.e., N cross sectional units, *i* =1…,N, over T time periods, t=1,…,T (i.e., weights will be zero for anyone who has missed at least one interview between waves 2-4. So, in effect [the] analysis sample will consist of those who responded continuously at waves 1 to 4"[28]	A strict balanced panel data was computed using the following *Stata syntax* *bys pidp (wave):replace indinus_lw = indinus_lw[_N]* To correct for complex survey design of the UKHLS data the following Stata syntax was applied: *svyset psu[pweight= indinus_lw], strata (strata) singleunit (centered).*

Source: Own computation based on UKHLS data (waves 1-4).

The given lists of socio-economic and demographic variables are important and are used discretionally across the three papers in this thesis, mainly to control for group differences in each topic articulated in each paper (forthcoming). The years since migration and its square are immigrants specific variables used across my three papers to capture differences in the time of arrival of different immigrants in the UK, as well as controlling for immigration policies that were operational at their arrival (Casciani, 2002; Chiswick, 1980; Coleman, 1987; Demireva, 2011; Hatton & Leigh, 2011; Hox, 2010; Ruhs, 2006; Shumba, 2005; Wray, 2006). Based in the USA labour market, Chiswick (1980, p.84) deduced that "the partial effect of [YISM] on earnings (holding total work experience constant) declines with the length of time in the country and very small after about 20 years …[on] other hand, among white and black male immigrants in the United States English Speaking countries, experience in the country of origin had about the same as experience acquired in the United

[28] (Alita Nandi's response on the user support web page: https://www.understandingsociety.ac.uk/support/issues/362 , accessed on 28/09/2015.

States ”—my empirical results (forthcoming are in line with these findings—i.e., the YISM and its square effects on ‘old’ and ‘new’ immigrants ‘earnings analyses in paper two (forthcoming).

In a similar study, Chiswick (1980) found a smaller effect of years of schooling (education years) on earnings when the data was limited to coloured men (ibid). The urban, marital status, age, number of children variables are included across all papers to control for group differences in these demographic variables in terms of occupational access (or lack of access) to professional class , pay asymmetry and transitions, key topics analysed in forthcoming papers covered in this thesis.

One explanation given for the socio-economic assimilation of immigrants which is attributed to Chiswick (1978)’s study and reiterated in the UK by Dustmann (1996)’ s study is that immigrants have a strong incentive to acquire human capital that is specific to the host country—as a means to improve their relative position in the foreign labour market. Therefore, on what concerns English proficiency as a measure of socio-economic integration variable, lays in the fact that it is a differential assimilation measure attribute, i.e., whether immigrants have assimilated into the UK culture or not on one hand, and yet, on the other hand (Dustmann, 1996). In field literature, language abilities have been found to be correlated to time of residence, educational background, and age at entry as well as to variables describing social and family setting (few examples include: Adsera & Chiswick, 2007; Chiswick, 1978, 1980, 2002; Chiswick & Miller, 1995; Chiswick & Miller, 2009; Chiswick, Yinon, & Tzippi, 1997; Dustmann, 1996; Goldmann et al., 2011; Price, 2001; Shields & Price, 2002; South et al., 2005; Van Tubergen & Kalmijn, 2005). Last but not least, I now turn to explain the rationale sponsoring codification of country of origin groups as well the global group variable.

The preceding literature reviews have already covered more details on socio-economic integration visa-a-vis UK immigration policies and laws over different immigrants’ influxes, which are captured in the coding of groups in line with some literature in the field, for three important reasons. (i) To maintain same focus on similar ethnic groups covered in the literature reviewed to permit continuity and comparisons with such literature; (ii) the global group variable captures key features pertaining to different cohorts based on their timings arrival which also correlates with immigration laws and policies, points already articulated in the preceding overviews pertaining to UK labour market specifically. (iii) The given country of

origin groups in a way capture the diverse nature of the UK labour market in terms of the foreign born, I try to account for that diversity and differences in timings of arrivals—same country origin does not in any way equates to equal pay and occupational entitlement, I maintain this argument throughout my three papers (forthcoming), hence, the given analytical groupings, are in large part maintained throughout my thesis. However, the codification of country of origin groups remain arbitrary though, since many country of origin attributes remain unmeasured even for the UK born White— both men and women are far from representing an homogeneous group on what concerns culture, class and structural factors, elements which are beyond the scope of the analyses in this thesis

PAPER 1: ACCESS (OR LACK OF ACCESS) TO THE PROFESSIONAL CLASS IN THE UK LABOUR MARKET: A CASE STUDY OF 'OLD' AND 'NEW' IMMIGRANTS AND UK–BORN WHITE

INTRODUCTION

Lack of access to professional class in this paper refers to (i) the downgrading of occupation-related skills due to non-recognition and continued lack of skill practice, therefore, leading to temporal or permanent entrapment in all labour market sectors (primary, secondary and tertiary) i.e. without advancement opportunities and (ii) also cases of specialists employed below their educational credentials within the multi-layered skill-intensive sector, but, for this paper, I am interested in the former category. Typical examples of lack of access to the professional class jobs manifest in the form of many skilled and fully qualified personnel, few examples include doctors, lawyers and teachers working in routine/elementary jobs such as cleaning; shelf filling in Tesco and care work assistants in care homes and hospices. Access (or lack of access) to professional class sits seemingly comfortably, in the broader empirical literature based on labour market segregation, over-education or over-qualification (see few examples: Auriol & Sexton, 2002; Belfield, 2010; Brynin & Longhi, 2009; Chevalier, 2003; F Green, McIntosh, & Vignoles, 2002; W Groot & Massen van den Brink, 2000; Hartog, 2000; Moore, 2000; Salt et al., 2004) and more importantly inherently linked to globalisation and international migration. Worldwide, there seems to exist an intense ideological attachment to the desirability of fair meritocracy and procedural equality in neo-liberal labour markets, but, in practice these remain problematic to achieve (Moore, 2000). Within this context, lack of access to the professional class does manifest, hence, is an antithesis to both meritocracy and procedural equality. Moore (2000, p. 339)'s study stresses "the logic

runs that if the rules are not the same for everyone, the system is simply [not fair]".

In essence, lack of access to the professional class in many ways invigorates additional assumptions that the neo-liberal labour markets demand of the highly skilled is exceeded by an international supply of such sought after personnel. The evidence in the literature suggests that 31 per cent of the UK work force has been reported as overeducated[29] and the majority of those are immigrants (see Sloane, Battu, & Seaman, 1999). Additionally, evidence of under-utilization of the highly skilled /educated is also central in over education literature (see Brynin & Longhi, 2009; F Green et al., 2002; Hartog, 2000; Hartog & Oosterbeek, 2000). According to Francis Green, Green, McIntosh, and Vignoles (2002, p. 793). Conversely, overeducation, in this paper, is perceived as a characteristic manifestation of immigrants' overrepresentation and underutilisation of pre-migration human capital in routine elementary occupations rather than in jobs they are qualified to do from their home countries. While, many of the UK literature seem to pay attention to the fact that many ethnic group members are foreign born, apart from tending to be mainly descriptive, scant attention is evident to the empirical analysis of unique immigrants' labour market experiences in terms of longevity in the UK labour market is evident, i.e., distinguishing 'old' and 'new' immigrant groups make a world of difference, a case many of the reviewed literature takes for granted.

2. ANALYSIS FOCUS

This paper explores relative chances of ending up in a lower social class job, comparing 'All immigrants, 'old' and 'new' immigrants and UK born White, based on education years as the primary predictor of access (or lack of access) to professional class , using UKHLS wave1 cross-sectional data. Aligned with the socio-economic integration literature and theories already reviewed in the introduction chapter of the thesis, as well as insights from past empirical research in the UK and beyond, this paper analyses the following research questions, main hypotheses and explorative hypotheses based on gender and immigrants dichotomies ('old' and 'new'):

(i) Whether the relative chance of ending up with a lower social class job for men country of origin groups is similar to that of UK White men's in the UK labour market, with education years as a primary predictor.

29 An employee situation of having a qualification at a higher level than an applicant would need to get same job.

(ii) Whether the relative chance of ending up with a lower social class job for women country of origin groups (immigrants) is similar to that of UK white women's in the UK labour market, with education years as a primary predictor.

(iii) Whether the relative chance of ending up with a lower social class job for 'Old'- and 'New'-, men and women country of origin groups are similar in the UK labour market, with education years as a primary predictor.

Main Null hypotheses[30]:

(i) The chance of ending up in a lower social class job for men immigrants is comparably similar to that of the UK white men's', with education as a primary predictor (**H01**).

(ii) The chance of ending up in a lower social class job for women immigrants is comparably similar to that of the UK white women's', with education as a primary predictor (**H02**).

Alternative Hypotheses:

(i) The chance of ending up in a lower social class job for men immigrants is comparably distinctive to that of the UK white men's with education as a primary predictor (**Ha1**).

(ii) The chance of ending up in a lower social class job for women immigrants is comparably distinctive to that of the UK white women's with education as a primary predictor (**Ha2**).

Exploratory Research Question: *Whether the relative chance of ending up in a lower social class job for 'old'- and 'new'-immigrants (men and women) are similar in the UK labour market, with education years as a primary predictor.*

Explorative Null Hypotheses:

(i) Access (or lack of access) to the professional class probabilities across 'old' immigrants (men and women) are similar in the UK labour market based on education and time spent in years since migration in the UK labour market (YSM).

(ii) Access (or lack of access) to the professional class probabilities across 'new' immigrants (men and women) are similar in the UK labour market

[30] In statistical lingo, this is the assumption of no difference across origin country groups.

based on education and time spent in years since migration in the UK labour market (YSM)

Explorative Alternative Hypotheses:

(i) Access (or lack of access) to the professional class probabilities across 'old' immigrants (men and women) are dissimilar in the UK labour market based on education and time spent in years since migration in the UK labour market (YSM).

(ii) Access (or lack of access) to the professional class probabilities across 'new' immigrants (men and women) are dissimilar in the UK labour market based on education and time spent in years since migration in the UK labour market (YSM).

To avoid potential problems associated with making statistical inferences based on broad educational qualification categories, a continuous measure of education in school years completed is used instead. This has the advantage of standardizing otherwise incomparable educational qualifications obtained abroad and those obtained in the UK. In essence, highly educated respondents will have more education years compared to those that have less or no schooling at all.

In order to provide a common basis for testing the stated null hypotheses, I will review briefly two important topics: (i) statistical significance—regarded in statistical literature as a formal way of accepting or rejecting the postulated hypotheses in question (assessing whether observed associations are likely to be explained by chance alone) and (ii) inferential statistics—testing whether origin group differences of access (or lack of access) to the professional class are statistically significant—not likely to occur by chance alone (i.e., in my case I use *contrast marginal linear predictive differences relative to base group*) (Westfall, Johnson, & Utts, 1997). Throughout this paper, a standard criterion for statistically significant, i.e., p-value < 0.05, is adapted from field literature. If $p<0.05$ that implies that if the null hypotheses were true, I would observe a difference as large as or larger than the sample value in fewer than 5 out of 100 samples (less than 5 %) drawn from the same population (ibid, p. 61). Similarly a p-value of 0.001 means I can be 99.9% confident in rejecting the null hypotheses in favour of an alternative hypothesis of difference exiting between groups in question (ibid). Therefore, for a difference to be statistically significant, one would want a p-value < 0.05 (ibid).

Therefore, in the given context, the articulated hypotheses are tested on the p-

threshold value of p< 0.05 using UKHLS wave 1 data (2009-2010) already discussed in the data and methods section. I reiterate here that the main advantage of using UKHLS data lays in the fact that it has adequate responses to many direct questions pertaining to respondents' country of birth, year of birth, school leaving age, year started first job, year moved to the UK pertaining to immigrants, year started current job and year of interview for all respondents – sufficient information to proxy respondents' education years. Only the respondents of working ages between 16 and 67 years are studied in this paper, although the UKHLS data is representative for even those aged below 16 and above 67 years.

In what follows, I present the statistical analytic approach (es) that I have used to examine access (or lack of access) to the professional class probabilities in the UK labour market. As already discussed in the introduction chapter, due to the complexity of the UKHLS sampling design, individual level nonresponse correction cross sectional analysis weight based on the adult main interview (*a_indinus_xw)* (Knies, 2014) is fully integrated in both the *probit* and *heckprobit selection*[31] models estimated throughout this paper. If not otherwise specified, the tables and figures reported in this paper are computed from the UKHLS wave 1 data.

3.0 Statistical Analysis of Occupational Access (or lack of access) to the professional class

In this section I provide an overview of the models derived from the literature to help analyse occupational access (or lack of access) to the professional class of different country of origin groups working and living in the UK l. According to Friedberg (2000, p. 223)

> [w]hen immigrants arrive in a new country; they are at disadvantage in the labour market relative to natives with comparable demographic characteristics and measured skill levels. One reason is that natives have country specific skills and information that immigrants lack. As immigrants spend time in the host country and gradually acquire this country –specific knowledge, their labour market performance may improve relative to that of their native counterparts.

Inspired by the above quotation, this paper investigates probabilities of occupational access (or lack of access) to professional class pertaining to immigrants relative to UK White by gender as well as comparing occupational access (or lack of access) to professional class within and across country of origin groups themselves excluding

[31] Here the selection equation allows one to use information from non-working women to improve estimates of parameters in the outcome regression model, throughout the thesis – married; education years, age and number of children are used to predict selection.

the UK born White. To analyse the predictors of labour market disadvantage in terms of occupational access (or lack of access) to professional class across immigrant country of origin groups relative to UK born White and amongst immigrant country of origin groups, probit models have been fitted for men and heckprobit models for women respectively (reasons already articulated in the introductory data section). In the case of men, simple probit models were carried out, to which I turn to now.

Probit Models

As opposed to a logit model, with emphasis on a logistic cumulative distribution function (CDF), i.e., $F(x'\beta)$, which is formally expressed as follows:

$F(x'\beta) = \mathbf{\Lambda}\,(x'\beta) = \frac{e^{x'\beta}}{1+x'\beta} = \frac{\exp(x'\beta)}{1+\exp(x'\beta)}$ (1) (Katchova, 2013)

Whilst in a probit model, the $F(x'\beta)$ stresses a normal distribution function expressed in the form:

$F(x'\beta) = \mathbf{\Phi}\,(x'\beta) = \int_{-\infty}^{x'\beta} \boldsymbol{\phi}\,(\mathbf{z})\mathbf{dz}$ (2) (ibid)

Equation (1) $\mathbf{\Lambda}$ denotes a logistic distribution function that is a CDF with mean 0 and variance 1 and equation (2) $\mathbf{\Phi}$ is a CDF of a standard normal random variable that is normally distributed (Gaussian) random variable with mean 0 and variance 1. x' is a *K x 1* vector of independent variables: education- years, country of origin, 'old' immigrants and 'new' immigrants, age, age squared, years since migration to the UK, Potential labour market experience years, Potential labour market experience years squared, language proficiency, marital status and source of qualifications, β signifying estimates or values for each x-variable and *K*.is a constant term. To precisely model occupational access (or lack of access) to professional class , let y_j, **j** = 1..., N, denotes an occupational access (or lack of access) to professional class binary outcome/ event taking on values 1 for occupational lack of access to professional class and 0 for occupational access to professional class jobs.

In this context, a probability that $y_j = 1$ can be modelled nonlinearly as a function of linear combinations of k independent variables ($\boldsymbol{x_j}\mathbf{b}$) *(or* $x'\beta$ *=*$[(\boldsymbol{x_{b1j}}, \boldsymbol{x_{b2j}}\ldots \boldsymbol{x_{bkj}})]$ as follows:

$$\boldsymbol{Pr\,(y_j = 1) = \Phi\,(x_j\mathbf{b})} \quad (3)$$ (Harvey, 1976; Van de Ven & Van Pragg, 1981),

Where $\boldsymbol{x_j}$ denotes independent variables and **b** are the estimated parameter vectors. More importantly, one cannot observe the expected labour market oriented

occupational access (or lack of access) to the professional class of country of origin groups at face value, but, one can deduce statistically whether or not respondents have occupational access (or lack of access) to professional class jobs, will show this later. Introducing a Heteroskedastic Probit model, means generalizing the probit model (equation (2) to a normal CDF model with a variance that is no longer fixed at 1, but deemed to vary as a function of the independent variables, in this case variance now takes a multiplicative function of *k* variables $\mathbf{z_j} = (\mathbf{z_{1j}}, \mathbf{z_{1j}}, \ldots, \mathbf{z_{kj}},$ i.e**.,** has variance expressed in the following form:

$$\boldsymbol{\sigma_j^2} = \left[\mathbf{exp}(\mathbf{z_j}\,\boldsymbol{\gamma})\right]^{\mathbf{2}} \qquad (4)\ (\text{Harvey, 1976})$$

This also implies a probability of Occupational Access (or lack of access) to professional class by relaxing a homoscedastic assumption characterising probit models in general (equation 3), hence, can be used to compute the probability of success as a function of all independent variables (multiplicative Het Probit model), is formally configured as follows:

$$\boldsymbol{Pr\ (y_j = 1)} = \boldsymbol{\Phi}\left[\frac{\mathbf{x_j}\boldsymbol{b}}{\mathbf{exp}(\mathbf{z_j}\,\boldsymbol{\gamma})}\right] \qquad (5)$$

(ibid)

Basing on the structural configuration of equation 5, it is clear that, unlike in the index expression $\mathbf{x_j}\,\mathbf{b}$, no constant term is present in $\mathbf{z_j}\,\boldsymbol{\gamma}$ if the model converges or is identifiable. Here $\boldsymbol{\gamma}$ denotes ancillary/subsidiary statistics of $\mathbf{z}$. Within this context let's suppose that the binary outcomes $\mathbf{y_j}$ are generated by thresholding an unobserved random variable **w,** which is normally distributed with mean $\boldsymbol{x_j}\mathbf{b}$ and variance 1 such that,

$$y_j = \begin{cases} 1 \ \ if \ \ w_j \ if > 0 \\ 0 \ \ if \ w_j \ \leq 0 \end{cases} \qquad (6)\ (\text{ibid})$$

The conditional selection probability of occupational access (or lack of access) to the professional class susceptibility (to observe $y_j = 1$) for any $group_j$ given x_j can be predicted, hence, Pr (y=1|x) is forced to lie within *0* and *1* using the following equation:

$$\Pr(y_j = 1) = \Pr(w_j > 0) = \Phi\,(x_j b) \qquad (7)(\text{ibid})$$

In the case of w_j unobserved, a Heteroskedastic probit estimation with variance

$\sigma_j^2 = \left[\exp(z_j\,\gamma)\right]^2$ is estimated as Pr (yj =1) = $\Phi\left[\frac{x_j b}{\exp(z_j\,\gamma)}\right]$, however, the price one has to pay when one observes yj is the fact that infinity ($\propto$) is only estimated up to a factor of proportionality (ibid).

This paper therefore utilizes the generalizability of probit models by allowing scale of the inverse link function to vary from observation to observation as a function of control variables, and is also estimable in its log form function as follows:

$\ln L = \sum_{j\in S} w_j \ln\Phi\langle x_j\beta / \exp(z\,\gamma)\rangle + \sum_{j\notin S} w_j \ln\left[1 - \Phi\langle x_j\beta / \exp(z\,\gamma)\rangle\right]$ (7) (Ibid),

Where *S* is the set of all observations j such that $y_j \neq 0$ and w_j denotes the optional weights and the lnL is maximized in each case. In this context, conditional selection probabilities of occupational access (or lack of access) to the professional class across country of origin groups (for men and women) are estimated using the maximum log-likelihood.

Heckprobit Selection Model

For the rationale and generic structure of the heckprobit selection model, see heckman/heckprobit section in the thesis introductory chapter, hence, is spared in this chapter to avoid redundancy.

In tandem with the UK Labour Force Survey data, the UKHLS data also provides information that allows us to distinguish between the UK–born White and immigrants on the basis of country of birth and year moved into the UK. Based on Demiriva (2011)' study, immigrants who migrated to the UK before the 1990s are designated 'old' immigrants and those who came in the 1990s are treated as 'new' immigrants. To minimize potential confounding problems, old and new immigrants are analysed as subpopulations defined by gender, hence a total of 6 regression models are fitted to analyse occupational access (or lack of access) to the professional class in the UK labour market. With insights from Demiriva (2011) and others, second generation immigrants, retirees and students are excluded from both probit and Heck probit models. As will become apparent from Table 1, in the descriptive statistics section, there is a wide variety of economic activity and inactivity across country of origin groups as well as between 'old' immigrants and 'new' immigrants (will return to this topic later in the descriptive statistics section). With regards to students, their parents are predominantly included in the old immigrant origin groups, which imply that students are disproportionately

represented across country of origin groups, and not in others, hence, including students and the retired can potentially bias empirical estimates (ibid).

Additionally, potential labour market experience, marital status, whether one speaks English as first language, source of qualifications, number of children, age and its square, year of first entered into the UKHLS data, location (rural or urban) and health condition of respondents are included in all models. To determine the importance of education as a primary predictor of occupational access (or lack of access) to the professional class, models are inter-changeably fitted with for all sub groups of interest. In the models restricted to 'old' and 'new' immigrants EU 15, country of origin group is the reference category, while in the models including all men and women respondents, the UK born White men and women are the reference groups.

More importantly, controls for years since migrating to the UK and its square are introduced only in the models restricted to immigrants, in order to deal with the problem of structural zeros in statistical analysis (Humphreys, 2010; Kline, 2011). This is a sensible option because the Years since Migration (YSM) variable only peaks on immigrants and not UK–born White (men and women), hence combining immigrants and UK–born White would logically contain observations where the YSM of interest will be equal to zero for the UK–born White (Humphreys, 2010).

Interpretation of probit βs is not as straightforward as the interpretations of βs based on linear regression or logit regression models. This is so because an increase or decrease in probability attributed to a one-unit increase or decrease in a given regressor is dependent both on the values of the other predictors and the starting value (constant) of the given array of predictors (including controls) in the model (ibid). Due to different functional forms of probit and Heckprobit models, interpretation of βs cannot be based on their magnitude sizes, as given in regression output, but, on the β sign (positive or negative) (Williams, 2012). In this context, a positive sign (+) on a coefficient implies that an increase in the regressor leads to an increase in the predicted outcome, in my case occupational access (or lack of access) to the professional class probability. Similarly, a negative sign (-) on a coefficient implies that an increase in the regressor leads to a decrease in the predicted outcome.

In a case where average marginal /contrast effects are presented, i.e. the average change in the probability of predicting y=1 given a one-unit change in an independent variable $\boldsymbol{x}$ is calculated and interpreted as follows:

$$\Delta\rho/\Delta x_j = \left(\frac{\Delta p}{\Delta x}\frac{\sum F\prime(x'\beta)}{n}\right)\beta_j$$ (Williams, 2012)

As opposed to the conventional marginal effects for an average person in the sample $\bar{x}$ typically expressed as:

$\Delta\rho/\Delta x_j = F\prime(x'\beta)\,\beta j$ (ibid) However, using conventional marginal effects is problematic, since such persons in the sample are unlikely to exist. However, many papers do report marginal effects at the mean with an assumption that, in practice, the two marginal effects approaches do literally produce identical results (ibid). Additionally, post-estimation cues after using *predict*, i.e., *predict* without arguments, gives a predicted probability of a positive outcome and *predict* with the *xb option* gives the index function combination $x_j b$ (StataCorp, 2014). Last but not least, goodness of fit test results are reported to specify correctly predicted values in the overall model, if the predicted probability is greater ≥ 0.5, that predicts that $y_j = 1$, otherwise $\boldsymbol{y_j} = 0$ (ibid). Before presenting key findings, the next section briefly describes the construction of variables.

4.0 Dependent Variable (PROF)

The dependent variable used in this paper is Profession (PROF), as was described already in the data and method section it is a two level dummy variable, which is coded zero for access to the professional jobs and coded one for not accessing professional jobs in this paper and paper three (forthcoming). For full description and its construction see the data methods section in the introductory chapter. Whilst the UKHLS classification of current job occupational class 2000 is not immune from problems such as conceptual obscurity, arbitrary intuition and limited population coverage, it remains one of the vital occupational classification tools used in the UK labour market for both scientific and policy analysis so far (Office for National Statistics, 2012).

4.1 Descriptive characteristics of the UKHLS sample population

This section starts by presenting weighted univariate summary statistics of 14 country of origin groups characterising the UK labour market by gender. With insights from Demiriva's (2011) study, 13 immigrant subpopulation groups—people who responded in UKHLS wave1 data as born outside the UK are also distinguished in both descriptive stats and empirical analyses, i.e., reiterated for emphasis; 'old'

immigrants—came into UK before 1990 and 'new' immigrants—those who came into the UK in 1990 and post it. Table 1 1 summarizes row percentage distribution of 14 country of origin groups' economic activity or inactivity in the UK labour market. Key summary statistics for country of origin groups' education years, potential labour market experience years and age are presented using Table 1 2 Computed average education attainment years differentials from the UK White of each country of origin by gender are presented using Table 1 3, and to conclude I present in this section row percentage occupational access (or lack of access) to professional class outcomes of country of origin groups by gender and immigration status ('old' or 'new') in Table1 4.

Across women country of origin groups, a schism of both 'new' and 'old' immigrants can be observed in Table 1.1 next page. Such a schism translates into varied labour market participation patterns in terms of formal and informal employment as well as through inactivity associated with long-term sickness, studentship and retirement. On one hand, EU15, 'Old' Commonwealth, Sri Lankan, Eastern European and Irish immigrants characteristically show lowest inactivity in terms of long-term sickness and, on the other hand, 'old' immigrants are oversubscribed in terms of inactivity through sickness or disability. Across all women country of origin groups, Indian and Pakistan women show the lowest proportional number of students and inactivity relating to retirement. In terms of unemployment, Middle Eastern women immigrants show the highest rate of unemployment across all women groups presented in Table 1.1. Eastern European, African and EU15 women are associated with much higher rates of employment compared to the UK white women. However, Pakistani and Bangladeshi women show lower rates of formal employment and also very high levels of informal employment.

Table 1.1: Economic Activity and Inactivity of Country of origin groups, Immigration Status of Men And Women in the UK Labour Market % (Weighted)

	unemployed		Self Employed		Employment		Retired		Students		Sick/Disabled		Other		
Countryof origin	men	women	men	women	men	women	men	women	men	women	men	women	men	women	Total[32]
UK- Born	7.5	4.3	10.7	4	49.3	46	20.6	25.9	4.7	12.5	6.6	6.5	0.6	0.8	200
'Old' Immigrants	8.4	7.1	11.3	5.7	58.2	48.5	1.3	1.6	2.1	22.5	17.8	13.9	0.9	0.7	200
Eu15	7.2	2.9	4.3	5.9	64.5	48	5.9	21.2	3.5	10.7	14.6	9.8	0	1.5	200
'Old' Commonwealth	5.8	5	15.2	9.2	58.5	54.7	11.4	8.6	0.4	14.2	8.7	6.5	0	1.8	200
Indian	7.4	5.6	9.7	3.7	55.2	40.9	14.5	18	3	27.3	10	3.9	0.1	0.5	200
Pakistani	8.5	6.6	21.1	0.9	48	15.8	9.2	6.1	6.5	65.5	5.9	2.9	0.8	2.2	200
Bangladeshi	13.2	6.8	13.4	2.1	48.1	20.3	6.5	6.2	4.5	59.8	13.3	4.1	1	0.8	200
African	5.5	5.7	16.3	6.1	58.1	55.8	7.2	7.9	4.2	14.3	8.7	10	0	0.2	200
Caribbean	13	9.3	7.9	4.1	32.2	37.1	40.4	33.7	4.7	11.1	1	4.5	0.8	0.2	200
Middle Eastern	6.3	8.9	9.9	3.3	58.2	29.9	12.6	13	9.4	38.1	3.2	4.7	0.4	2.1	200
Chines/Hong Kong	3.1	7.4	20.4	10	37.7	37.2	2.6	4.1	0	10.5	35.4	30.8	0.8	0	200
Sri Lankan	4.1	6.2	12.1	7	66.1	43.4	3.1	10.4	2	25.8	11.2	7.2	1.3	0	200
East European	4.4	6.6	15.4	5.6	72.5	63.2	2.4	4.2	1.4	13.9	3.4	6.5	0.6	0	200
Irish	5.1	4	10.9	3.6	36.9	42.5	34	34.2	9.7	11.9	3.4	3.9	0	0	200
Other	9.6	6.7	13.3	7	48.2	44	8.5	10.4	3.3	19.6	15.4	11.8	1.6	0.6	200
'New' Immigrants	6.6	4.2	15.6	6.0	44.7	38.2	25.2	30.6	6.5	19.0	1.0	1.1	0.5	0.8	200

Source: Own computations based on UKHLS, Wave 1 (2009-2010)

[32] The total adds to 200% because men and women groups have each a row percentage total of 100%, two genders are treated separately throughout the thesis.

As shown in Table 1 1, there are a wide variety of patterns of economic activity and inactivity within and across country of origin groups, taking into account gender and immigration status. Across women country of origin groups, the unemployment rates are relatively lower (ranging from 2.9% to 9.3% compared to those of men country of origin groups ranging between 3.1% and 13.2%. Comparing the unemployed across men country of origin groups, Bangladeshi men are the modal group with a raw inactivity rate of 13.2%, with Caribbean and Pakistani men sharing a distant second at 8.5%. However, across women country of origin groups, Caribbean women are the modal group, i.e., with an unemployment rate of 9.3% and Middle Eastern women second modal group at 8.3%. Comparing 'old and 'new' immigrants (both men and women), the former (men having unemployment rate at 8.4% and women at 7.5%) are more disadvantaged in terms of unemployment compared to the latter (i.e., men having unemployment rate at 6.6% and women at 4.2%). In fact, many of the immigrant groups with lower unemployment rates are known to integrate quickly compared to 'visible' immigrants or ethnic minorities (Ruhs, 2006). With respect to paid employment Eastern European -, Sri Lankan-, EU 15- men, have employment rates over 60%. Contrastingly, Chinese/ Hong Kong and Caribbean men have the lowest employment rates lying between 32% and 38%. In terms of the self-employed sector, Pakistan and Chinese /Hong Kong immigrants largely dominate this sector, and it is least populated by EU15 men and Bangladeshi women. As expected Caribbean and Irish immigrants (both men and women) have the highest percentage rates of the retired, both over 33% (oldest immigrant groups in the UK in in terms of years in the UK) compared to all other immigrant groups. Amongst the sick and disabled, both Chinese/ Hong Kong men and women have over 30% compared to the rest country of origin groups whose inactivity rate with regard to sickness or disability lying between 1% and 17.8%. Comparing 'old' and 'new' immigrants, the latter have between 1% and 1.1% compared to the former with sickness/ disability rates ranging between 13% and 18% men and women combined. In Table 2 2, I present the sociodemographic characteristics of country of origin groups in terms of their average education years, potential labour market experience and age.

Table1 2 Mean Education Years of Sampled Country of Origin Groups, Immigrants: Women and Men (Weighted)

Men and women Groups	All Country of origin groups Education years (EDUC)		Potential Labour market Exp		Age		'New' immigrants Education years		'New' migrants Potential Labour market Exp		'New' immigrants Age	
	Mean	Std. Err.	Mean	Std.Err	Mean	Std.Err	Mean	Std Err	Mean	Std Err	Mean	Std. Err
UK white men	11.13	.01	31.31	.17	46.32	.17	-	-	-	-	-	-
UK white women	11.06	.01	33.21	.17	48.15	.16	-	-	-	-	-	-
Immigrant groups												
EU15 men	12.45	.13	28.84	1.68	36.88	1.11	11.25	0.17	13.46	0.97	30.41	0.99
EU15 women	12.45	.21	39.35	1.94	43.57	1.43	10.84	0.19	14.38	1.00	30.98	0.99
'Old' Commonwealth men	12.05	.08	33.18	2.66	41.46	1.65	11.86	0.16	17.88	1.30	34.16	1.39
'Old' Commonwealth women	12.37	.09	37.39	1.97	42.82	1.33	11.81	0.15	18.43	1.04	34.90	1.04
Indian men	11.47	.09	44.15	.98	43.52	.97	11.36	0.12	17.14	0.74	33.06	0.72
Indian women	11.09	.10	43.12	1.29	46.39	.94	11.05	0.15	18.09	0.64	34.25	0.64
Pakistani men	11.43	.10	35.83	1.15	41.91	.10	11.10	0.16	18.08	0.57	35.14	1.30
Pakistani women	10.88	.10	31.13	1.18	41.49	.76	10.74	0.14	18.01	0.77	35.18	0.95
Bangladeshi men	11.43	.11	26.04	2.04	37.45	.97	11.06	0.18	17.52	0.94	33.60	0.93
Bangladeshi women	10.98	.10	27.69	1.23	37.63	.83	10.74	0.18	14.69	0.71	31.43	0.74
African Men	12.27	.10	35.08	.91	42.38	.77	12.17	0.12	18.53	0.80	35.49	0.80
African women	11.91	.14	33.49	1.17	40.91	.77	11.66	0.13	18.89	0.85	34.87	0.86
Caribbean men	11.94	.15	49.29	1.50	56.76	1.66	10.66	0.14	19.20	1.56	37.03	1.97
Caribbean women	11.12	.15	45.01	1.19	54.11	1.32	10.98	0.09	21.85	1.79	38.39	2.20
Middle Eastern men	11.12	.40	39.41	2.48	43.69	2.46	10.79	0.34	16.88	2.06	32.82	1.82
Middle Eastern women	10.89	.56	38.43	2.39	43.09	2.40	10.81	0.36	14.34	1.20	30.67	1.62
Chinese/Hong Kong men	12.31	.22	29.67	2.63	35.43	1.58	12.13	0.22	15.75	1.75	31.35	1.56
Chinese/Hong Kong women	12.52	.13	33.73	3.19	36.41	1.83	11.53	0.42	13.98	1.44	31.08	1.41
Sri Lankan men	12.34	.15	37.46	2.07	39.50	1.19	12.40	0.25	19.64	0.94	36.26	0.96
Sri Lankan women	12.39	.18	39.72	3.18	43.61	1.80	12.25	0.17	19.99	1.11	37.70	1.57
Eastern European men	12.55	.16	46.85	5.25	33.22	.89	11.78	0.33	14.15	0.59	31.20	0.56
Eastern European women	12.89	.13	45.08	4.24	33.67	1.02	11.78	0.44	13.47	0.63	30.64	0.60
Irish Republic men	12.01	.30	45.31	1.93	54.70	1.99	10.66	0.16	13.29	1.87	32.38	3.44
Irish women	11.99	.16	45.83	1.61	54.78	1.54	10.92	0.16	17.96	1.74	34.09	1.65
Other men	12.11	.09	36.96	0.87	39.48	.55	11.77	0.08	16.87	0.45	33.28	0.47
Other women	12.02	.06	39.26	0.98	39.53	.55	11.57	0.09	16.27	0.39	32.90	0.37

Source: On computation based on UKHLS Wave 1 Data (2009-10).

In tandem with past empirical literature, the evidence in Table 12 supports the generalised view that many immigrants, in particular, 'Old' Commonwealth immigrants, Chinese/Hong Kong, African and Indian groups (both men and women) have higher educational credentials compared to the UK White. The overeducation of immigrants is not surprising, as this is consistent with the UK immigration policy schemes (i.e., Highly Skilled Immigration Policy) directed at expediting entry of highly skilled and educated immigrants. The descriptive stats are consistent with a number of studies in this field: Rollason (2002); Lindley (2009); Demireva (2011) and Altorjai (2013), just to mention a few. However, other authors attribute many immigrants' higher educational attainment in terms of their intrinsic and extrinsic motivations to extensive schooling, i.e., these particular immigrant groups see education as a means of escaping labour market penalties (see few examples: Battu & Sloane, 2004; Belfield, 2010; Dell' Aringa & Pagan, 2010; W. Groot & Maassen Van Den Brink, 2000; Jonsson & Erikson, 2000; Lindley, 2009; J. Lindley & Lenton, 2006; Sicherman, 1991; Sloane et al., 1996; Sloane et al., 1999). However, as expected Pakistani women group have less education years relative to the UK white women, hence, may lack motivation to succeed in the UK labour market.

Overall, both 'old' and 'new' immigrants (men and women) have statistically significant education years differences relative to UK White (both men and women. As expected Old immigrants' (both men and women) potential labour market experience years compared to 'new' immigrants are relatively higher, in particular for Caribbean and Irish immigrants, are amongst the oldest immigrants in the UK labour market. Table1 3 (below) illustrates how men and women from different country of origin groups are distributed in terms of occupational access (or lack of access) to the professional class.

Looking at Table1 3, it is clear that women country of origin groups are more disadvantaged occupationally compared to men in the UK labour market. Starting with UK White, 63.8 % of women have lack of access to the professional class jobs relative to 53.9% of UK white men facing a similar predicament. Across country of origin, it is apparent that women groups, 'Old' Commonwealth, African, Eastern European and African immigrants are doing better than the UK white women. On the other hand across men country of origin groups, 'Old' Commonwealth, Bangladesh and Middle Eastern immigrants have higher proportions of their group members engaging in professional occupations compared to the UK white men.

4.2 Occupational Achievements of Immigrants and UK White by gender

The descriptive stats presented using Table 1 3 indicate that 'new' immigrants men and women are over represented in routine and unskilled works in comparison to both UK White and 'Old' immigrants men and women. On the other hand, while 'new' immigrants have over 30% representation in professional and management occupations, it is only 'new' women immigrants that show higher dominance relative to the UK White. As expected, 'Old' commonwealth, EU15, Irish, Indian women and Chinese/ Hong Kong men have larger proportion of 'white collar' workers than UK born White, with the exception of Indian men at par with the UK born white men. Eastern European, Caribbean, Pakistani, Bangladeshi, Indian, Other and Middle Eastern women are somewhat over represented in routine and unskilled works professional and managerial jobs compared to the UK White. Middle Eastern and Bangladeshi women have more proportion than the UK women in Intermediate and skilled occupations. Finally, the following men groups: Chinese/Hong Kong, Pakistani, 'Old' immigrants, Irish, African, Bangladeshi and Other (in descending order of proportions) and Chinese/ Hong Kong women seem keener in getting self-employed. In the case of 'old' men immigrants, this trend is not surprising as demonstrated in the literature which attributes entrepreneurship as a means of escaping discrimination and avoiding low-paid jobs (Clark & Drinkwater, 2008).

On what concerns Table1 4, I see that old men immigrants, Bangladeshi men immigrants are the modal groups in terms of over-representation in occupational lack of access to professional class jobs (66%), with the Chinese/ Hong Kong immigrants second (63%) and other immigrant groups on third position (62%). Contrastingly, only 19% of 'Old' Commonwealth men have occupational lack of access to the professional class jobs. As expected, over 95% of Pakistani women (modal group across women groups) have occupational lack of access to the professional class jobs and second are Bangladeshi women with 89% participation rate in terms of occupational lack of access to the professional class jobs. On the other spectrum of 'new' immigrants, across men country of origin groups, Caribbean have 80% occupational lack of access to the professional class jobs, followed by Irish at 63.3 %. However, for 'new' immigrant women groups, 87% of Pakistani experience occupational lack of access to the professional class jobs, as expected is the modal group. Second are Bangladeshi women with (82%), third Indian (80%) and fourth are the Middle Eastern and Caribbean immigrants both with approximately 74% of their members lacking

access to the professional class jobs. The outcome of Sri Lankan immigrant women is of interest, as they are proportionally equivalent to that of the UK white women, in terms of professional occupations, see Table1 3.

Table1 3 : Weighted Occupational Attainment of Country of Origin Men and Women Groups (%)

Country of origin groups	Occupational attainment: Management & Professionals		Intermediate & Skilled Manual		Routine works	&Unskilled	Self employed		Total
	Men	Women	Men	Women	Men	Women	Men	Women	
UK born White	37.1	37.2	10.1	20.1	35.4	34.9	17.4	7.7	100
'Old' immigrants	39.5	39.6	8.7	18.8	26	28.1	25.7	13.4	100
EU15	49.8	45.4	8.2	15.6	35.7	28.4	6.3	10.6	100
'Old' Commonwealth	50.9	60	15.3	13.2	14.2	12.6	19.6	14.3	100
Indian	37.1	41.3	10.8	15.3	37.8	35.2	14.4	8.3	100
Pakistani	23.4	29	7.4	18.2	38.6	47.6	30.6	5.2	100
Bangladeshi	21.8	28.4	11.2	24.6	46.6	37.8	20.5	9.2	100
African	47	40.1	6.7	16.9	24.7	33.2	21.6	9.8	100
Caribbean	15.4	30.6	13.5	15.7	52.6	43.7	18.4	10.1	100
Middle Eastern	41.3	14.1	14.8	27	29	49.4	14.9	9.5	100
Chinese/Hong Kong	38.1	31.7	0.8	16	28.2	31.3	32.9	20.9	100
Sri Lankan	36.8	31.3	11.2	18.4	36.3	36.3	15.6	14	100
Eastern European	13.4	26.7	2.2	7.4	67.1	58.2	17.3	7.6	100
Irish	49.1	54.9	9	17.8	20.1	19.6	21.8	7.7	100
Other	32.7	33.5	7.5	13.3	38.5	39.6	21.3	13.5	100
'New' immigrants	33.9	38.0	8.1	12.1	42.2	39.6	15.8	10.3	100

Notes: All men and All women add to a row total of 100 & Strata with single sampling unit cantered at overall mean.

Pearson: All men Uncorrected Chi2 (39) = 608.8515, Design-based F (27.30, 1.5e+05) = 4.8040, P = 0.0000 & 9 strata omitted because they contain no subpopulation members .Pearson: All women Uncorrected Chi2 (39) = 465.7975, Design-based F (31.63, 1.6e+05) = 4.7977, P = 0.0000 & 26 strata omitted because they contain no subpopulation members.

Source: Own calculations based on UKHLS wave1 data (200-2010)

Table1 4 : Row Percentage Access (or lack of access) to the professional class jobs of Country of origin groups by Gender in the UK Labour Market (Weighted)

	Lack of access to professional class jobs		Lack of access to professional class jobs		Total	Lack of access to professional class jobs			lack of access to professional class jobs	
Country of origin groups	Men –'Old' immigrants		Women–'Old' immigrants			Men-'New' Immigrants			Women-'New' Immigrants	
	No	Yes		No	Yes		No	Yes		No	Yes
EU15	43.3 (6.3)	56.7 (6.3)	100	51.3 (5.1)	48.7 (5.1)	100	56.3 (5.2)	43.7 (5.2)	100	33.8 (4.2)	66.2 (4.2)
'Old' Commonwealth	80.9 (5.4)	19.1 (5.4)	100	63.2 (5.9)	36.8 (5.9)	100	61.4 (6.6)	38.6 (6.6)	100	52.8 (5.7)	47.2 (5.7)
Indian	52.3 (3.1)	47.7 (3.1)	100	39.9 (3.1)	60.1 (3.1)	100	39.1 (3.6)	60.9 (3.6)	100	20.0 (3.1)	80.0 (3.1)
Pakistani	46.7 (3.6)	53.3 (3.6)	100	4.7 (1.4)	95.3 (1.4)	100	39.8 (4.2)	60.2 (4.2)	100	12.8 (2.5)	87.2 (2.5)
Bangladeshi	34.5 (3.8)	65.5 (3.8)	100	1 4 (2.6)	89.6 (2.6)	100	41.7 (4.2)	58.3 (4.2)	100	18.3 (4.3)	81.7 (4.3)
African	57.7 (3.4)	42.3 (3.4)	100	41.5 (34)	58.5 (3.4)	100	60.1 (38)	39.9 (3.8)	100	46.7 (39)	53.3 (3.9)
Caribbean	39.9 (8.9)	60.1 (8.9)	100	20.5 (4.9)	79.5 (4.9)	100	20.0 (4.7)	80.0 (4.7)	100	26.4 (4.0)	73.6 (4.0)
Middle East	53.7 (11.2)	46.3 (11.2)	100	7.0 (4.9)	93.0 (4.9)	100	41.4 (9.5)	58.6 (9.5)	100	26.5 (8.7)	73.5 (8.7)
Chinese/Hong Kong	36.6 (6.7)	63.4 (6.7)	100	25.6 (5.8)	74.4 (5.8)	100	59.8 (11.1)	4 2 (11.1)	100	45.5 (10.8)	54.5 (10.8)
Sri Lankan	47.7 (6.2)	52.3 (6.2)	100	30.6 (6.2)	69.4 (6.2)	100	68.1 (9.1)	31.9 (9.1)	100	48.2 (9.2)	51.8 (9.2)
Eastern European	43.6 (4.5)	56.4 (4.5)	100	39.7 (4.4)	60.3 (4.4)	100	40.1 (17.5)	59.9 (17.5)	100	45.8 (12.7)	54.2 (12.7)

Irish Republics	60.1	39.9	100	61.5	38.5	100	36.7	63.3	100	33.5	66.5
	(12.1)	(12.1)		(7.2)	(7.2)	100	(4.8)	(4.8)	100	(4.1)	(4.1)
							54.2				
Other	37.6	62.4		32.4	67.6			45.8		33.6	66.4
	(2.3)	(2.3)		(1.9)	(1.9)	100	(3.0)	(3.0)	100	(2.5)	(2.5)

Standard Errors in brackets ( ) Source: own computations based on UKHLS Wave 1 (2009-10)

Compared to Indian and Chinese women immigrants, Sri Lankan women are better placed professionally —certainly an intriguing research, worth exploring in future studies. The empirical results of the multinomial regressions are presented in Table 1 9.

Over and above, descriptive stats validate wide varieties of economic activities through employment (full/part-time) and self-employment and inactivity varieties in terms of retirement, long-term sickness/ disability and studentship. Additionally, the descriptive stats also showed conspicuous differences between 'old' and 'new' immigrants in terms of their sociodemographic characteristics, i.e., differences associated with their mean education years, potential labour market experience and age, see Table 1 2. Such differences between 'old' and 'new' immigrants are worth investigating further empirically. In this pursuit, using a series of regression analyses, I now determine to what extent such differences are driven by socio-demographic factors such as respondents' country of origin, education years, potential labour market experience years and years since migration explain occupational access (or lack of access) to the professional class in the UK labour market context. Education years, potential labour market experience years and years since migration are considered as instrumental in illuminating whether occupational access (or lack of access) to the professional class manifests. Unlike 'old' immigrants, 'new' immigrants, have comparably lower education years compared to the former, see Table 1 2. However, for empirical analytic focus, I concentrate on those engaging only in paid full-time or part-time employment.

There are two important functional attributes of probit and logit models which are worth reiterating here to inform the interpretation of empirical results in this section; (i) predicted probability metric –the size of an effect of a regressor can (will) vary as a cumulative function of the value of the plugged covariates, and (ii) predicted logit metric—the size of the effect remains constant regardless of the values of the covariates in a model (Mitchell, 2012). In line with the primary motive of empirically predicting the size effect of each country of origin group in terms of occupational access (or lack of access) to professional class in the UK labour market, I rely on both probit and logit metrics to achieve this goal. Consequently, for the sake of establishing a standard and comparable measurement of effect I base contrasts of marginal linear positive predictions on the probability metric—logically intuitive since all the model shown in Table 1 5 is based on the first metric. However, in statistical lingo and practice, probit and logit metrics produce predicted probabilities limited between 0 and 1.

5.0 Presentation of Empirical Results (key findings)

In this section of the paper key empirical results are presented using TABLE 1 5, exploring the outcome of occupational access (or lack of access) to professional class for the following country of origin groups: all men and all women immigrants relative to the UK white men and women correspondingly; 'old' immigrants men and women relative to EU15 'old' immigrants men- and women separately, and last but not least, 'new' immigrants men and women comparative to EU 15 'new' immigrants men and women respectively. Here I consider the EU 15 men and women groups as reference groups by statistical default—these immigrants have no restrictions to work and live in the UK, but, may experience occupational lack of access to professional class on grounds of limited literacy in English language — non-English native speaking White.

5.1.1 Access (or lack of access) to the professional class probabilities of all men immigrants versus UK white men (weighted)

I start by addressing the following specific research questions and hypotheses:

RQ: *Whether the relative chance of ending up with a lower social class job for all men immigrants is similar to that of UK White men's in the UK labour market, with education years as a primary predictor.*

H01*: The chance of ending up in a lower social class job for all men immigrants is comparably similar to that of the UK white men's, with education as a primary predictor .*

Ha1: *The chance of ending up in a lower social class job for all men immigrants is comparably* ***different*** *from that of the UK white men's with education as a primary predictor.*

Table 1 5: Key Empirical Results: Probabilities of access (or lack of access) to the professional class of country of origin groups, by immigrant type and gender (weighted)

(Dependent Variable is Profession =1 for lack of access to the professional class jobs, and =0 for access to the professional Jobs)

Variables	Model 1 All Men	Model 2 All Women	Model 3 Men 'Old' immigrants	Model 4 Women 'Old' immigrants	Model 5 Men 'New' Immigrants	Model 6 Women 'New' Immigrants
Country of origin Effects						
UK born White	Ref (.)	Ref (.)				
EU 15	0.319* (0.127)	0.050 (0.141)	Ref (.)	Ref (.)	Ref (.)	Ref (.)
'Old' Commonwealth	-0.223 (0.155)	0.228 (0.146)	-0.550* (0.257)	-0.410 (0.218)	-0.729* (0.302)	0.188 (0.222)
Indian	0.135 (0.091)	0.139 (0.109)	-0.441* (0.219)	0.104 (0.206)	-0.119 (0.202)	0.273 (0.187)
Pakistani	0.266** (0.103)	0.954*** (0.164)	-0.202 (0.214)	0.636** (0.215)	0.032 (0.212)	1.526*** (0.231)
Bangladeshi	0.532*** (0.111)	0.785*** (0.166)	0.067 (0.217)	0.449 (0.239)	0.348 (0.225)	1.171*** (0.251)
African	0.274** (0.091)	0.229* (0.097)	-0.304 (0.199)	-0.201 (0.193)	0.003 (0.211)	0.489** (0.184)
Caribbean	0.650*** (0.167)	0.170 (0.167)	0.021 (0.263)	-0.044 (0.215)	0.751* (0.319)	1.019*** (0.294)
Middle Eastern	0.183 (0.246)	0.725* (0.352)	-0.323 (0.311)	0.316 (0.308)	0.065 (0.382)	1.678** (0.519)
Chinese/Hong Kong	0.485** (0.187)	0.391 (0.280)	0.087 (0.359)	-0.399 (0.408)	0.236 (0.263)	0.914*** (0.255)
Sri Lankan	0.343* (0.166)	0.416* (0.178)	-0.819* (0.393)	-0.598* (0.303)	0.238 (0.245)	0.577* (0.241)
Eastern European	0.479*** (0.143)	0.385* (0.161)	-0.022 (0.427)	-0.722 (0.414)	0.159 (0.219)	0.357 (0.203)
Irish	0.139 (0.158)	-0.095 (0.163)	-0.178 (0.233)	-0.380 (0.202)	-0.304 (0.411)	-0.020 (0.257)
14.Other	0.475*** (0.076)	0.377*** (0.091)	-0.157 (0.182)	-0.078 (0.173)	0.330 (0.183)	0.601*** (0.159)

Immigrant classification effects (new immigrants are the reference group)

'Old' immigrants (=1)	-0.429***	-0.221*				
	(0.065)	(0.086)				
Human capital effects						
Education Years	-0.160***	-0.155***	-0.096*	-0.131***	-0.037	-0.107**
	(0.012)	(0.031)	(0.039)	(0.040)	(0.035)	(0.037)
English is first language (=1)	-0.289***	-0.229**	-0.244*	-0.443*	-0.249*	-0.263**
	(0.063)	(0.075)	(0.117)	(0.194)	(0.104)	(0.096)
Years since	-	-	-0.011	0.030	-0.135***	-0.143***
migration	-	-	(0.023)	(0.085)	(0.025)	(0.026)
Years since migration	-	-	0.000	-0.001	0.006***	0.005***
squared	-	-	(0.000)	(0.001)	(0.001)	(0.001)
Potential labour						
Experience	-0.055***	-0.092**	-0.101	-0.161	-0.068	-0.224***
	(0.013)	(0.031)	(0.067)	(0.133)	(0.040)	(0.048)
Potential labour exp^2	0.001***	0.002***	0.001*	0.003	0.002*	0.005***
	(0.000)	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)
Religious group effects						
Belong to a Religious group	-0.016	-0.090**	-0.092	0.013	0.195*	0.157
	(0.023)	(0.029)	(0.103)	(0.190)	(0.098)	(0.101)
Demographic effects						
Biological Number of	0.045**	0.215***	0.044	0.280***	0.056	0.362***
children	(0.014)	(0.035)	(0.055)	(0.076)	(0.038)	(0.058)
Constant	2.996***	3.779***	1.781*	3.936*	2.752***	3.424***
	(0.187)	(0.506)	(0.903)	(1.963)	(0.579)	(0.603)
Model Tests						
F statistic	79.758***	43.385***	9.219***	245.337***	7.507***	9.897***
Rho	-	-0.739***	-	-0.062	-	0.056
						(.075)
Wald test	80.29***	43.38***	9.30***	247.31***	7.51***	10.2***
Number of Strata	1774.00	1775.00	877.00	964.00	922.00	1073.00
Number of Strata omitted	2.00	1.00	899.00	812.00	854.00	703.00
Number of PSU	7858.00	7853.00	5452.00	5735.00	5794.00	6221.00
N	48638.00	50338.00	24646.00	27234.00	24947.00	29520.00
Population Size (N pop)	47753.82	49913.53	21864.12	24646.63	21785.50	26818.82
Design difference (df_r)	6084.00	6078.00	4575.00	4771.00	4872.00	5148.00
Subpopulation size (N_sub)	19694.00	25828.00	1540.00	1815.00	2291.00	2612.00
Sub-population Group (N_supop)	21201.78	24491.36	1031.71	1154.69	1608.93	1626.77

Standard Errors in Brackets

* P<0.05, ** P<0.01, *** P<0.00

Notes : (1) other control variables included in all models (1-8); six marital status dummies-|0 "single, never married ref|1 "married/separated-***|2 "Separated & legally married"- | 3 " Separated & legally married "-| 4 " Civil/ Separated/former Civil p "-***|5 " Divorced "|6 " widowed"| two dummies of Year of

interview |2009=0 ref ;2010 =1 | , age groups:|3 “18-19 years old”= ref |4 “20-24 years old”+*** |5 ”25-29 years old “+***| 6”35-39 years old”+**** |7 ”40-44 years old”*** |8 ”45-49 years old”+**** |9 ”50-54 years old”+*** |10 ”55-59 years old+*** “|11 ”60-64 years old” -| 12 ”65 years or older”-|; four level dummies for health conditions of employees:| 1 “Excellent “=reference |2 “ Very good“ (+***)|3 “good “ +*** |4 “fair“ and |5 “poor “+***| ; two level dummies for industry location:|1 “urban =reference“ | 0 “ rural+*** . Selection equation model results are available on request from the author

Key on notes+ or – with stars –designate controls that are statistically significant ($p<0.000$) in specified direction. + or – no stars—designate controls that are not statistically significant.

Source: Own models based on UKHLS Wave 1 data (2009-2010)

My first outcome of interest is whether country of origin groups experience similar access (or lack of access) to the professional class. As my dependent variable is a binary outcome, I use a maximum likelihood to estimate a standard probit model for men country of origin groups and a Heckprobit model for women country of origin groups, following the footsteps of Altorjai (2013) and other subsequent studies. Looking at Table 1 5, in particular, the distinctions of 'old' and 'new' immigrants has both empirical and theoretical implications. Empirically, the groups have very different coefficients demonstrating different UK labour market experience. How? Theoretically, they are not the same group of individuals, which implies that they have different number of years in the UK labour market as well as different number of years in the same job.

Key estimates for the standard probit regressions for men's occupational access (or lack of access) to the professional class are presented in columns 1, 3 and 5 and Heckprobit regressions for women's occupational access (or lack of access) to professional class outcomes are presented in columns 2, 4 and 6 in Table 1 5. I start by evaluating whether all men country of origin groups jointly attract a statistically significant effect on access (or lack of access) to the professional class job. I fulfil this step by resorting to contrasts of marginal linear predictions of joint men immigrant groups (Mitchell, 2012). The test results are statistically significant, i.e., joint F statistic with 13 degrees of freedom (adjusted for survey design) is 3.40 and p> F is 0.0000 and design difference is 6, 084. In this context, I reject the null hypothesis (H01) in favour of the alternative hypothesis (Ha1).

The coefficient for schooling years (education attainment measure) attracts a negative and statistically significant coefficient —which implies that it imposes a decrease in the likelihood of lack of access to the professional class outcome across all men country of origin groups. However, the coefficient for education is not statistically significant in model 5 for 'new' immigrant men (unexpected result—which might be attributable to small subsample (854 omitted strata in this model)—small number of observations results in large standard errors—is equal to standard deviation divided by the square root of sample size (_n)[33].

[33] http://www.biochemia-medica.com/content/standard-error-meaning-and-interpretation, accessed, 5/07/2015.

The coefficient dummies for Old Commonwealth, Indian, Irish and Middle Eastern are not statistically significant, hence, are statistically indistinguishable from the reference group (UK white men). However, nine country of origin groups relative to the UK white men, attract positive and statistically significant coefficients—these include U15; Pakistani, Bangladeshi, African, Caribbean, Chinese/ Hong Kong, Sri Lankan, Eastern European and 'Other' men. These results are in line with past empirical literature, in particular, Altorjai (2013) and other subsequent studies. To analyse how the educational attainment affects labour market achievement, the median value for educational attainment was used, in my case this value is 11 years of schooling. Therefore, Table 16 (a) (below) summarizes positive predictions of lack of access to the professional class based on the median education value (11 years of schooling). The predictions are based only on the same sub-samples used in the models. However, should researchers be interested in the influence of other covariates (e.g. potential labour market experience, age group cohorts, marital status, number of children, English language effect etc.) they should refer to the results of the probit regression.

Table 16 (a) Average predictions of lack of access to the professional class for men country of origin groups based on model 1 (only country of origin groups with statistically significant coefficients are presented).

Country of origin group(s)	average +ve % prediction of lack of access to professional class with 11 years of schooling (median)	% Error margin of prediction
All men	49	23
UK white men	48	23
EU15 men	50	26
Old immigrants	51	25
Pakistani	52	20
Bangladeshi	58	19
African	51	23
Caribbean	73	21
Chinese/Hong Kong	64	21
Sri Lankan	62	21
Eastern European	67	19
Other	65	22

Source: Own Computations Based on UKHLS Wave 1 Data (2009-10)

As presented in Table 16 (a), with 11 years of schooling the average predicted probability of declaring a positive lack of access to the professional class outcome across all men country of origin groups is 49 % (with an error margin of 23 %) that of UK born white men, with 11 years of schooling only averages about 48 % (with

an error margin of 23 %). Based on Table 1 6a, it seems Caribbean men immigrants are more disadvantaged in terms of experiencing lack of access to the professional class jobs in the UK labour market (an unexpected result given that this group of immigrants have been in the UK labour market longer than many of the groups— considering this fact alone, the assumption would be that they would be more integrated in that context). Next, I explore Heckman probit key results for all women groups relative to the UK born White women.

5.1.2 LACK OF ACCESS TO THE PROFESSIONAL CLASS PROBABILITIES OF ALL WOMEN IMMIGRANTS RELATIVE TO THE UK WHITE WOMEN (WEIGHTED)

RQ: Whether the relative chance of ending up with a lower social class job for women country of origin groups is similar to that of UK White women's in the UK labour market, with education years as a primary predictor.

H02: The chance of ending up in a lower social class job for women country of origin groups is comparably similar to that of the UK white women's, with education as a primary predictor.

(Ha2): The chance of ending up in a lower social class job for women country of origin groups is comparably different from that of the UK white women's with education as a primary predictor

As expected, using Heckman selection model on all women groups, do merit a meaningful statistical difference (rho is statistically significant). For an illustration Table 1 6 next, — depicts overall implications of using and not using a probit model with selection.

Table 1 6 Key Results: Summary of Predicted Probabilities from Probit Model 2 with Sample Selection (pmarg), True Predicted Probabilities (Profession==1) and Predicted Results from the (usual) Probit Model (phat)

Comparative Prediction variable	Observations	Mean Std.	Dev.	Min	Max
Pr ($^{Probit}_{y_j}$= 1) (pmargin)	46,218	.8392288	.1476652	.1923077	1
Synthesized PROF==1 (ptrue)	50,994	.7068324	.1667995	.5	.8413448
Usual probit model (phat)	46,225	.8392314	.1476574	.1923077	1

Source: Own computations using UKHLS Wave 1 data: 2009-2010

Looking at Table 1 6 it is illuminating to see that there are prediction differences comparing "marginal predicted outcomes with predicted probabilities that one gets if a selection mechanism is ignored" 34 . It is clear that ignoring the selection mechanism results in predicted probabilities that are much greater than the exact values, i.e., comparing the phat and ptrue variables in Table 1 7. In this case, looking at the predicted probabilities from the model with sample selection, column 2 of Table 1 5, the prediction results are even more accurate.

The Heckprobit key results for all women are presented in column 2 of Table 1 5. Like in *model 1* for all men origin groups, the coefficient for education years is also statistically significant and negative for all women groups, hence, has a decrease effect on lack of access to the professional class job entry. Table 1 6 (b) presents predictions of the likelihood of lack of access to the professional class across women groups as a percentage based on the education median value.

Table 16 (b) Average predictions of lack of access to the professional class for women country of origin groups based on model 2

Women country of origin group(s)	average +ve % prediction of lack of access to professional class with 11 years of schooling (median)	% Error margin of prediction
All	83	15
UK white	82	12
Old immigrants	88	11
Pakistani	96	3
Bangladeshi	94	5
African	84	11
Middle Eastern	92	6
Sri Lankan	91	6
Eastern European	88	8
Other	90	9

Source: Own Computations Based on UKHLS Wave1 Data (2009-10)

Looking at *Table 16 (b), t*he average predicted probability of declaring a positive lack of access to the professional class across all women country of origin groups is about 84% with a standard error of 13%, which arithmetically is 34% higher compared to all men country of origin groups in model 1. In a similar context, the average predicted probability of declaring a positive lack of access to the

[34] See remarks and examples in stata.com for Heckprobit postestimation-postestimation tools for Heckprobit, accessed 20/08/2015.

professional class for UK white women with 11 years of schooling is about 82%[35] (with a standard error of 12%). Therefore based on model 2 predictions, I can clearly declare that across all women country of origin groups the results indicate that Pakistani, Bangladeshi, Middle Eastern, Sri Lankan and Other women have higher likelihoods of experiencing lack of access to the professional class –this is in tandem past empirical literature findings based in the UK labour market.

The overall impression one gets from models 1 and 2 is that not all immigrant groups are disadvantaged occupationally in comparison to the UK born White —in particular, EU15, Old Commonwealth, Indian and Irish. Strikingly, in both men and women based models, Pakistani, Bangladeshi, African, Middle Eastern, Sri Lankan and 'Other' country of origin groups are conspicuously disadvantaged in comparison to the UK born White. Whereas, lack of language skills or UK based education can explain either fully (in the case of a number of non-English speaking immigrants) or at least some of the disadvantages experienced by such immigrant origin groups in terms of lack of access to the professional class probabilities, nevertheless, the penalization remain very strong for Pakistani, Bangladeshi and 'Other' origin groups regardless of controls. Same results are replicated based on multinomial logit regressions of occupational achievement, see Table 1 9. Based on the multinomial logistic regression estimates, and concentrating on 'Bangladeshi's coefficients— without and with education for 'Professional and Management Occupations'. This means this group of immigrants are more likely to get 'Routine-Unskilled' –related jobs (base reference). Nevertheless, with education, there remains still a high probability of not getting a 'Professional and Management Occupation', but, with a slightly less likelihood.

More importantly, in Table 1 9, I do not show results aggregated for 'old' and 'new' immigrants as the focus is the analysis of the probability of immigrants from specific countries of origin getting a specific occupational achievement (professional and management occupations, intermediate and skilled manual occupations, and self-employed / entrepreneurship occupations) compared to the probability of getting a routine-related unskilled job.

[35] I sum pmarg if schooling years =11, with all other covariates held constant.

5.1.3 ACCESS (OR LACK OF ACCESS) TO THE PROFESSIONAL CLASS PROBABILITIES OF 'OLD' AND 'NEW' IMMIGRANTS IN THE UK LABOUR MARKET (WEIGHTED)

In this section I explore the following explorative research question and hypotheses pertaining to 'old' and 'new' immigrants (men and women).

Explorative Research Question: *Whether the relative chance of ending up with a lower social class job for 'Old'- and 'New'- immigrants (men and women) are similar in the UK labour market, with education years as a primary predictor.*

Explorative Null Hypotheses:

(iii) Access (or lack of access) to the professional class probabilities across 'old' immigrants (men and women) are similar in the UK labour market based on education and time spent in years since migration in the UK labour market (YSM).

(iv) Access (or lack of access) to the professional class probabilities across 'new' immigrants (men and women) are similar in the UK labour market based on education and time spent in years since migration in the UK labour market (YSM)

Explorative Alternative hypotheses:

(iii) Access (or lack of access) to the professional class probabilities across 'old' immigrants (men and women) are **dissimilar** in the UK labour market based on education and time spent in years since migration in the UK labour market (YSM).

(iv) Access (or lack of access) to the professional class probabilities across 'new' immigrants (men and women) are **dissimilar** in the UK labour market based on education and time spent in years since migration into the UK labour market (YSM).

The empirical results of 'old' and 'new' immigrants are shown in the last four columns of Table 1 5 as follows. Columns 3 and 4 present probit and Heckprobit regression model results of old immigrants relative to old EU15 immigrants. Last but not least, estimates of 'new' immigrants, having as reference the EU15 immigrants, are presented in columns 5 and 6. In each case men and women are regressed as subsamples.

The coefficient of education years in columns 3 and 4 is negative and statistically significant. Unlike that of all men's in the column 1, the coefficient of education years for old immigrants-men in model 3 is considerably smaller. Noticeably, for old immigrants (for both men and women), years spent in the UK labour market and its square are not statistically significant.

Amongst old men immigrant groups, the joint F statistics (with 12 degrees of freedom) is not statistically significant, F= 141, p>F= 0.1527. Thus, this evidence supports the explorative null hypothesis and rejects the alternative explorative hypothesis. *Table 16 (c)* (below) depicts predicted probability of a positive lack of access to the professional class for all old men immigrants average about 45 %, i.e., with a standard error of 25 %.

Table 16 (c) Average predictions of lack of access to the professional class for old immigrants (men) based on model 3

Country of Origin	average + ve % prediction of lack of access to professional class with 11 years of schooling (median)	% Error margin of prediction
All	45	25
EU15	46	23
Old Commonwealth	30	24
Indian	39	26
Sri Lankan	26	20

Source: Own Computations Based on UKHLS Wave 1 Data (2009-10)

Looking at Table 16 (c), I can see that old immigrants, in particular, Old Commonwealth, Indian and Sri Lankan are less susceptible to lack of access to the professional class relative to the EU15 immigrants (the reference group), i.e., with 11 years of schooling, there is a 46 % likelihood for EU15 immigrants to experience lack of access to professional class, with a 23% margin error. Next, I report Heckprobit results for old women immigrants. Table 1 8 next, presents differences in the prediction probabilities of using a probit model with selection (pmarg) for old women immigrants and that of without the selection equation (phat).

Table 1 7 Key Results: Summary of Predicted Probabilities from Probit Model 4 with Sample Selection (Pmarg),

True Predicted Probabilities (Profession==1) and Predicted Results from the usual Probit Model (phat)

Variable	Observations	Mean Std. Dev.	Min	Max
pmarg	6,456	.2714993 .2276773	.0000382	.9383522
ptrue	50,994	.7068324 .1667995	.5	.8413448
phat	8,438	.2821669 .2282416	.0000382	.9383522

Source: Own calculations based on UKHLS Wave 1 data

The key point to retain from Table1 7, is that pmarg and phat are not equal, which implies that using a probit model with selection makes a difference though the rho is not statistically significant it is still not zero in this model. Unlike the insignificant F statistics old immigrants (men), old women immigrants have a statistically significant joint F statistic[36] , i.e., F= 3.56, p=0.0000, hence, I reject the null hypothesis at 99.9% confidence level in favour of the alternative hypothesis.

Table 16 (d) Predictions of a positive lack of access to the professional class for old women immigrants.

Old country of origin group(s)	average +ve % prediction of lack of access to professional class with 11 years of schooling (median)	%Error margin of prediction
All	27	23
EU15	21	16
Pakistani	39	19
Indian	39	26
Sri Lankan	14	9

Source: Own computations based on UKHLS Wave 1 data (2009-10)

Conversely, as presented in Table 1 6 (d) above, the estimated probability of a positive lack of access to professional class outcome for old women immigrants averaging about 27% with a standard error of 23 %. See Table 16 (d) for the other statistically significant groups' predictions based on model 4.

Finally, Columns 5 and 6 in Table 1 5, present lack of access to the professional class outcomes for 'new' immigrants men and women correspondingly. For 'new' immigrants men, the joint F statistic is 3.56 and p=0.0000, hence, I reject the null hypothesis at 99.9% confidence level in favour of the alternative hypothesis. In the

[36] Since biprobit and heckprobit models are similar in generic structure and produce comparably similar estimates results (see Stata manual 14), the joint F statistic calculation is based on a typical biprobit model version of the given Heckprobit model—advantage is that, with Stata software, one can easily get contrasts of marginal linear predictions, not testable after running a heck probit model (stata.com).

case of 'new' immigrants (women) based on Table1 9 (below) it is clear that that pmarg and phat are not equal, which implies that using a probit model with selection makes a difference, though the rho is not statistically significant—which I attribute to omitted strata.

Table1 8 Key Results: Summary of Predicted Probabilities from Probit Model 6 with Sample Selection (pmarg), True Predicted Probabilities (Profession==1) and Predicted Results from The (usual) Probit Model (phat)

Variable	Observations	Mean Std. Dev.	Min	Max
pmarg	7,414	.4026706 .1753249	.0246777	.8937755
ptrue	50,994	.7068324 .1667995	.5	.8413448
phat	8,438	.4131017 .179901	.0246777	. .8937755

Source: Own calculations based on UKHLS Wave 1 data.

Additionally, the joint F statistic (i.e., with 12 degrees of freedom and adjusted for the survey design) is significant, i.e., F is 7.98, p=0.0000, hence, I reject the null hypothesis at 99.9% confidence level in favour of the alternative hypothesis. For both men and women 'new' immigrants, Looking at columns 5 and 6 in Table 1 5, unlike in the two previous models for old immigrants (men and women), years spent in the UK labour market and its square are statistically significant (but with negative and positive signs respectively-indicating that the effect is terminal). Since the two models have statistically significant quadratic variables in terms of years spent in the UK labour market, I can calculate where the decrease effects on lack of access to the professional class for 'new' immigrants men and women reach maxima peak respectively using the mathematical algorithm (-b [years spent in the UK] / 2* b [years spent in the UK^2]) (stata.com), which is 12 years[37] and 14 years[38] for 'new' immigrants men[39] and women[40] respectively. This leads to the question why the two variables are statistically significant on 'new' immigrants and not for 'old' immigrants. I provide and discuss the answer to this question in my discussion section of the paper. Table 16 (e) and Table 16 (f) summarise the calculated predictions of positive outcomes of lack of access to the professional class for 'new' immigrants men and women respectively.

[37] The data does not reject this theory, implementing: testnl -b [YISM]/ (2* b[YISMsqr])= 12 years , yields chi2 (1) = 0.00, and Prob > chi2 = 0.9917.
[38] The data does not reject this theory, implementing: testnl -b [YISM]/ (2* b[YISMsqr])= 14 years , yields chi2 (1) = 0.18, and Prob > chi2 = 0.6724.
[39] nlcom peak: - _b[years spent in the UK labour market]/ (2* _b[years spent in the UK labour market squared]) =11.99 ≈ 12 years,
[40] nlcom peak: - _b[years spent in the UK labour market]/ (2* _b[years spent in the UK labour market squared]) =13.52 ≈ 14 years,

*Table 16 (e) P*redicted probabilities of a positive lack of access to the professional class for 'new' immigrants (men).

Old country of origin group(s)	average +ve % prediction of lack of access to professional class with 11 years of schooling (median)	% Error margin of prediction
All	72	25
EU15	77	25
Old Commonwealth	48	34
Caribbean men	92	14

Source: Own computations based on UKHLS Wave 1 data (2009-10)

*Table 16 (f) P*redicted probabilities of a positive lack of access to the professional class for 'new' immigrants (women).

Old country of origin group(s)	average +ve % prediction of lack of access to professional class with 11 years of schooling (median)	% Error margin of prediction
All	44	15
EU15	36	17
Pakistani	49	7
Bangladeshi	46	8
African	40	17
Caribbean	55	17
Middle Eastern	47	11
Chinese/Hong Kong	39	11
Sri Lankan	39	14
Other	42	16

Source: Own computations based on UKHLS Wave 1 data (2009-10)

Table 16 (f) presents the predicted probability of a positive lack of access to professional class for all 'new' immigrants (women) with an average of 44% with an error margin of 15% (of which EU15 immigrants averages around 36% with an error margin of 15%).

5.1.4 DISCUSSION OF RESULTS

My descriptive stats and empirics obtained from the UKHLS wave 1 data seem to corroborate the findings of past empirical research, in particular, relating to job- and employment penalties of immigrants and ethnic groups in the UK labour market (see examples:Altorjai, 2013; Brynin & Guveli, 2011; Casciani, 2002; Clark & Lindley, 2009; Demireva, 2011; Dustmann et al., 2003; Dustmann & Faber, 2005; A Heath & S Y Cheung, 2006; Anthony Heath & McMahon, 1991; van Tubergen, 2004). Theoretically, my results support some of the central tenets of classical assimilation

(melting pot—in term of cases where immigrants and the UK born White are statistically indifferent) and segmented assimilation evidence in cases where I witnessed differential lack of access to the professional class across country of origin groups (Portes & Rumbaut, 1996, 2001; Portes & Zhou, 1993; Zhou, 1997; Zhou & Lee, 2008).

The descriptive stats, in particular, Table 1 3 show that many immigrants having more education years compared to UK White (men and women) and their over-representation in low skilled jobs (see Table 1 4) does not seem surprising at all. Global economic demands for science and technology-oriented skills have equally led to easing off of stiff immigration policies in the UK and beyond (neoliberalism in practice) –active initiatives to luring internationally highly skilled immigrants, entrepreneurs and foreign students, on one hand (see Salt & Millar, 2006) and on the other hand, left many educated immigrants marginalised in low-skilled employment sectors or in precarious employment (Gallagher, 2002; Standing, 2011). Within the rubrics of neo-liberal economies, status quo is motivated and sustained by patterned and regularised commodification of the firm (Standing, 2011), and structural inflation of job related earnings in general (Douglas, 1994). Given this context, precarious employment may also explain why many educated 'new' immigrants compared to old immigrants, are differentially entrapped in low class jobs. As such, the overall descriptive stats and empirics provide new evidence pointing to differential susceptibility of old and 'new' immigrants to lack of access to the professional class in the UK labour market. Now, considering more specific issues, I will address the question I formulated in the preceding section: why years spent in the UK and its square are statistically significant for 'new' immigrants and not for old immigrants.

With more years of integration in the UK labour market and society, old immigrants are more acquainted to labour market opportunities and have more cohesive professional networks, and, consequently, have more information about the UK labour market (more polished and focused job applications, better references, improved English language skills etc.). The empirical results show evidence of the impact of duration of stay effect, in particular in the case of 'new' immigrants. With more years of labour market integration to a maximum of 12 years for men immigrants and 14 years for women immigrants (peak years of stay impact), immigrants get to a neutral point in terms of chances of experiencing lack of access to professional class . This finding helps clarifying the 'melting pot' hypothesis –

that with more years of stay, 'new' immigrants see their chances of socio-economic integration improving as the likelihood of lack of access to professional class decreases (duration of stay coef= -.135*** for men and -.143*** for women 'new' immigrants).

While the prevalence of lack of access to professional class seems more acute in certain groups, in particular Pakistani and Bangladeshi immigrants (specifically women), there is long-standing evidence of labour market penalties materialized in segregation at the job entry phase (Brynin & Guveli, 2011; England & Browne, 1992; Mahroum, 2000; Man, 2004), I certainly cannot rule out the lack of adequate qualifications, based on their positive mean education differences relative to the UK White presented in Table1 3 (see Pakistani and Bangladeshi women differentials relative to UK white women). In this context, the positive lack of access to professional class outcomes of the given groups may require further research in order to assess whether their conspicuous lack of convergence, in particular, pertaining to Pakistani and Bangladeshi and the majority UK White (men and women) stem from actual blockage, delayed or merely unfinished assimilation process. The type of incompleteness matters, because each type is freighted with different implications for theory and thus for policy implementation for such disadvantaged groups as Pakistani and Bangladeshi. These remain important questions, however due to limitations of the UKHLS data I cannot test these issues further.

If the premise of blockage factors are embedded within the majority of UK White against the country of origin groups, this also implies that it will take generations to fed slowly, hence, making it hard to distinguish from any form of assimilation, where I may be forced to seek tentative explanations to wider macro-micro structural dynamics, i.e., forces playing beyond any control of disadvantaged immigrant groups in the UK labour market (Morawska, 2009).

Furthermore, these findings concerning the UK labour market provide a much broader scope for understanding the neo-liberal labour market manifestations of differential socio-economic integration patterns, affecting disadvantaging immigrants. It is then important to understand how those processes are taking place.

Firstly, lack of access to the professional class is a manifestation of underutilised immigrants' human capital, considering their education years. In line with the revision of the literature, lack of access to the professional class may be heightened by preponderance of ITCE skills sought after in neo-liberal markets and the marginalization of humanities-based skills (Hainmueller & Hiscox, 2010; Mahroum, 1999; Man, 2004; Rollason, 2002).

Secondly, lack of access to professional class descriptive statistics and the results of the multivariate analysis raise fundamental questions on the overall UK labour market's inclusion policies (and their effectiveness), in particular for Pakistani and Bangladeshi immigrants (both 'old' and 'new'). Many authors have pointed to the fact that educated immigrants are still entrapped in lower class jobs; another aspect of the discussion concerns the immigration numbers and the new accession immigrants,[41] seeking permanent residence and permanent employment in the UK, i.e., posing further challenges on housing, health facilities and the criteria to access social benefits.

Thirdly, another consequence of lack of access to the professional class in the UK labour market, apart from undermining meritocracy, relates to the fact that it negates both the benefits usually associated with the individual investment in education and years spent in the destination country. However, differences in qualifications and in years of employment across groups may also be driven by age. Differential access (or lack of access) to the professional class in the UK labour market replicates global assimilation trajectories across immigrant groups relative to host natives; hence, my results support the postulates of the segmented assimilation theory (Portes & Rumbaut, 1996, 2001; Zhou, 1997; Zhou & Lee, 2008).

Fourthly, and focusing in foreign labour markets, the lack of access to professional class processes were also captured by Borjas'(1985 & 1988) empirical findings, depicting conspicuous and ensuing socio-economic integration trajectory differences between immigrants and natives in the US labour market. My results also conform with Zorlu (2011,p.21) study of occupational adjustments of immigrants in the Dutch labour market: "highly educated immigrants start with low-skilled jobs on arrival". Even more conspicuously, lack of access to professional class results are consistent with overeducation and labour market segregation past studies,

[41] Joining European membership in 2004 (Salt & Millar, 2006)

converging in the fact that immigrants' lack of country-specific host labour market human capital and social capital attributes, make them more susceptible to labour market penalties (see in particular Chiswick and Miller (2009); (Friedberg, 2000; van Tubergen, 2004).

Also important to note that the most appropriate models for testing UKHLS Wave 1 data seem to be probit and Heckprobit models. Different alternative regression procedures, including weighted structural equation modelling (Rosseel, 2012), mark splining of variables 'education years' and 'time spent in education' (StataCorp, 2014) would enrich the analyses, in particular, by revealing underlying organisational structural variations pertaining to differential hiring of highly educated men and women in post-industrial economies. In this context, structural equation modelling is proposed as a parsimonious approach in studying structural factors potentially associated with lack of access to professional class on the basis of country of origin groups (by gender).

6. Conclusion

The tentative answer to my research question is that the relative chances of ending up in a lower social class job for men and women country of origin groups are dissimilar to that of UK White (men and women). The dissimilarity emerges from the fact that not all immigrant groups are occupationally disadvantaged in comparison to the UK White (men and women). Within this context, I rejected the null hypothesis in favour of the alternative hypothesis, epitomising lack of access to the professional class differences in the UK labour market.

In this paper, I evaluate the lack of access to the professional class of country of origin groups working in the UK labour market, based on UKHLS Wave 1 data using simple probit and Heckprobit regressions for men and women respectively. I have found that both men and women immigrants are far from demonstrating a standardised occupational performance relative to the UK born White (men and women) – the same applies to when contrasted against each other. Moreover, positive lack of access to professional class outcomes are more likely for Caribbean, Pakistani, Bangladeshi and 'Other' immigrant groups and lowest for Old Commonwealth men immigrants. I believe my findings are robust given the rigorous methods applied to both my descriptive stats and empirics, the few examples include the following marking my final comments/remarks for this paper.

The future research agenda should include, for example, the following aspects:

- Improvements on survey interview response rates/ data availability on immigrant communities.
- Need to explore further this topic taking into account structural level indicators/ panel study approach.

Table 1 9 : Key result -multinomial logistic regression of occupational achievement

	All Men				All women			
	Without Education		With Education		Without Education		With Education	
Professional and management occupations								
EU15	0.04	(0.28)	0.03	(0.28)	0.24	(0.26)	-0.06	(0.26)
Old Commonwealth	0.70	(0.45)	0.64	(0.44)	1.01***	(0.33)	0.61*	(0.34)
Indian	-0.10	(0.20)	-0.07	(0.21)	-0.14	(0.22)	0.05	(0.24)
Pakistani	-0.40	(0.25)	-0.38	(0.26)	-0.96***	(0.33)	-0.74**	(0.36)
Bangladeshi	-0.63**	(0.29)	-0.58**	(0.29)	-0.99**	(0.46)	-0.94**	(0.43)
African	-0.22	(0.22)	-0.35	(0.22)	-0.36*	(0.19)	-0.61***	(0.20)
Caribbean	-1.63***	(0.58)	-1.72***	(0.57)	-0.68**	(0.31)	-0.80**	(0.33)
Middle Eastern	0.22	(0.51)	0.42	(0.54)	-1.66**	(0.76)	-1.76**	(0.78)
Chinese/ Hong Kong	-0.03	(0.44)	-0.15	(0.46)	-0.26	(0.45)	-0.58	(0.48)
Sri Lankan	-0.69*	(0.36)	-0.78**	(0.37)	-0.58	(0.41)	-0.88**	(0.45)
Eastern European	-2.15***	(0.35)	-2.41***	(0.35)	-1.19***	(0.26)	-1.81***	(0.28)
Irish	0.54	(0.43)	0.45	(0.44)	0.64**	(0.30)	0.56*	(0.33)
Other	-0.66***	(0.19)	-0.77***	(0.19)	-0.44***	(0.16)	-0.71***	(0.17)
Old immigrants (=1)	0.49***	(0.16)	0.47***	(0.16)	0.36**	(0.15)	0.37**	(0.16)
Constant	-10.28***	(1.41)	-11.17***	(0.51)	-2.50***	(0.30)	-10.95***	(0.49)
Intermediate and Skilled manual occupations								
EU15	-0.56	(0.40)	-0.59	(0.40)	-0.18	(0.29)	-0.33	(0.29)
Old Commonwealth	0.87	(0.67)	0.83	(0.68)	0.21	(0.39)	0.02	(0.40)
Indian	-0.16	(0.30)	-0.13	(0.30)	-0.51*	(0.27)	-0.43	(0.27)
Pakistani	-0.40	(0.34)	-0.39	(0.35)	-0.77*	(0.40)	-0.67	(0.41)
Bangladeshi	-0.18	(0.34)	-0.15	(0.34)	-0.49	(0.40)	-0.48	(0.41)
African	-0.65**	(0.32)	-0.72**	(0.32)	-0.55**	(0.26)	-0.63**	(0.28)
Caribbean	-0.82*	(0.47)	-0.89*	(0.47)	-1.00***	(0.38)	-1.05***	(0.38)
Middle Eastern	0.35	(0.98)	0.47	(1.01)	-0.24	(0.66)	-0.31	(0.69)
Chinese/ Hong Kong	-2.43**	(1.06)	-2.51**	(1.06)	-0.21	(0.59)	-0.34	(0.59)
Sri Lankan	-0.37	(0.52)	-0.41	(0.53)	-0.36	(0.43)	-0.51	(0.43)
Eastern European	-2.57***	(0.64)	-2.77***	(0.65)	-1.61***	(0.39)	-1.89***	(0.39)
Irish	0.07	(0.60)	-0.01	(0.60)	0.01	(0.37)	0.03	(0.38)
Other	-0.75***	(0.28)	-0.81***	(0.28)	-0.69***	(0.19)	-0.80***	(0.19)
Old immigrants (=1)	0.56**	(0.23)	0.57**	(0.23)	0.61***	(0.17)	0.60***	(0.18)
Constant	-4.83***	(1.78)	-7.43***	(0.68)	-1.77***	(0.26)	-5.56***	(0.49)
Self Employed/Entrepreneurship								
EU15	-1.61***	(0.44)	-1.64***	(0.44)	0.59	(0.40)	0.29	(0.39)
Old Commonwealth	0.81*	(0.49)	0.78	(0.49)	1.51***	(0.41)	1.13***	(0.41)

Indian	-0.39*	(0.23)	-0.36	(0.23)	0.13	(0.37)	0.25	(0.37)
Pakistani	0.43*	(0.23)	0.45*	(0.23)	-1.09	(0.68)	-0.95	(0.70)
Bangladeshi	-0.11	(0.28)	-0.09	(0.28)	0.06	(0.61)	0.01	(0.64)
African	0.05	(0.22)	-0.01	(0.22)	0.15	(0.29)	-0.06	(0.30)
Caribbean	-1.01**	(0.42)	-1.07**	(0.43)	-0.01	(0.52)	-0.11	(0.53)
Middle Eastern	-0.27	(0.58)	-0.17	(0.61)	-0.02	(0.76)	-0.13	(0.78)
Chinese/ Hong Kong	0.48	(0.49)	0.41	(0.50)	1.05**	(0.50)	0.78	(0.54)
Sri Lankan	-0.52	(0.45)	-0.55	(0.45)	0.56	(0.56)	0.24	(0.62)
Eastern European	-0.64*	(0.35)	-0.81**	(0.37)	-0.43	(0.45)	-1.01**	(0.47)
Irish	0.20	(0.55)	0.12	(0.54)	0.33	(0.52)	0.32	(0.53)
Other	-0.18	(0.20)	-0.23	(0.21)	0.56**	(0.25)	0.32	(0.26)
Old immigrants (=1)	0.69***	(0.17)	0.70***	(0.17)	0.21	(0.21)	0.22	(0.22)
Constant	-4.17**	(1.76)	-7.72***	(0.66)	-3.32***	(0.49)	-10.92***	(0.77)
F	14***	-	14***	-	12***	-	14***	-
Sample strata	1752	-	1752	-	1738	-	1738	-
Sample strata omitted	24	-	24	-	38	-	38	-
Primary Sample Units	7307	-	7307	-	6839	-	6839	-
N	40826	-	40826	-	37503	-	37503	-
Population	39812	-	39812	-	37919	-	37919	-
Design difference	5555	-	5555	-	5101	-	5101	-
Subpopulation n)	12071	-	12071	-	13260	-	13260	-
Subpopulation Size	13349	-	13349	-	12581	-	12581	-

Standard errors in parentheses; * p < 0.1 ** P< 0.05 *** p< 0.01. Source: own computations based on UKHLS Wave 1 data (2009-2010)

Noticeably, more than 80% of Pakistan, Middle Eastern and Bangladesh women experience lack of access to the professional class jobs. Overall, more than half of all women immigrants experience lack of access to the professional class jobs, with the exception of EU15 women. With regard to men country of origin groups, On one hand, men immigrants from Old Commonwealth, EU 15, Irish, Indian, African, Caribbean, middle Eastern, Chinese/Hong Kong, Sri Lankan and Eastern European – either exceed or do not statistically differ significantly with UK born White.

Our results confirm the long-standing evidence of labour market penalties facing many immigrants, with the exception of Old Commonwealth immigrants, Sri Lankan (men and women), and Indian men (old immigrants) showing higher or equal participation rates in professional occupations when compared to UK White (men and women).

While skilled immigrants' influxes into the UK labour market show a substantial increase in volume from developed countries, and less from developing countries, it is also noticeable the susceptibility to lack of access to professional class of the latter, see Table 1 5 through Table 1 9. Moreover, many highly educated immigrants' continue to face lack of access to professional class jobs relative to the UK White (with fewer qualifications) which results in an ongoing challenge to inclusion policies. In essence, lack of access to professional class manifests polarising effects across immigrant groups and the UK White along axes of gender, country of origin and ethnicity (Man, 2004). One can speculate that lack of access to professional class patterns observed in the UK labour market are composed by an interplay of structural barriers imposed on immigrants, hence, possibly thwarting immigrants' upward mobility in terms of professional occupation, thusly, flag posting a typical hourglass labour market economy[42] in principle (Douglas & Hirst, 1998; Man, 2004; Perlmann & Waldinger, 1997). UKHLS data, therefore, indicates that immigrants' prevalence in lack of access to the professional class jobs is not explained by immigrants' education years and years since migration, but, by potential labour market experience years. Worlds in Motion by Douglas et al. (1993)

[42] The UK and USA are said to have an 'hourglass economy', with a large and expanding group at the top who have high skills and enjoy high incomes and a large and expanding group at the bottom who have low skills and low pay. The middle levels, composed traditionally of skilled or semi-skilled manual workers in good paying jobs, however, are declining; giving the occupational and income profile of the economy its distinctive shape Read more: http://www.answers.com/topic/hourglass-economy#ixzz2Q2VHS6g5, accessed, 6/04/13.

and International Migration: Its Various Mechanisms and Different Theories by Morawska (2007), give lucid and vivid tentative explanations of the interplay of macro and micro-level structuring and human actor forces, which I deem relevant in explaining the predicament of immigrants' susceptibility to lack of access to professional class in the UK labour market.

Proficiency in English language, number of children, potential labour market experience years, explain a sizeable proportion of differences in terms of lack of access to professional class standings across UK White and immigrants (men and women). However, the susceptibility to lack of access to the professional class empirically proved to decrease/disappear across UK White and Old immigrants with controls for education years, as well as immigrants' years since the migration to the UK. However, immigrants from persistently disadvantaged groups such as Pakistan and Bangladesh seem to have slim chances of upward occupational trajectories in the UK labour market. The observed lack of access to professional class configurations are perhaps to a large extent the result of processes of neoliberal economic restructuring in the UK labour market in tandem with the UK government's efforts of relaxing immigration laws and policies permitting entry of immigrants with sought after skills on one hand. However, an excessive increase of highly skilled immigrants also exacerbates many 'new' immigrants' susceptibility to lack of access to the professional class, if they are not absorbed in professional jobs on the other hand.

More broadly, immigrants' susceptibility to lack of access to professional class relative to UK White may also be configured broadly in terms of competition of human capital selection, in which UK White's country-specific education years privilege play a role, hence, equally pyramidal in understanding inclusion and exclusion of immigrants' human capital in professional occupations in the UK labour market. Given this finding, the patterning and distribution of lack of access to the professional class jobs across 'old' and 'new' immigrants and UK–born White (men and women) are bound to remain uneven in the UK labour market. The prevailing lack of access to the professional class differences between and across immigrant groups and UK–born White remain complex to analyse within ever changing neo-liberal structures, which due to shortage of structural data remain an ongoing challenge (and admittedly limiting the scope of this paper). In that line, the results presented in this paper are clearly an exploratory introduction to the discourses of a much wider research agenda.

Despite the apparent message, the phrase ‘ lack of access to professional class ’ does not try to make a case for the restriction of international sourcing of skills or limitation of the mobility of human resources devoted to science and technology in favour of human resources closer to humanities-based areas. The future premise for the UK economy’s demands for skilled immigrants remains complex; because new economic challenges caused by neoliberal economic pressures and austerity measures to curb recession continue unabated.

7.0 REFERENCES

Abbas, T. 2007. Muslim minorities in Britain: integration, multiculturalism and radicalism in the post-7/7 period. Journal of Intercultural Studies, 28, 287-300.

Altorjai, S. 2013. Overqualification of migrants in the UK. University of Essex, Institute for Social and Economic Research: ISER Working Papers.

Arat-Koc, S. 1999. NAC's Response to the Immigration Legislative Review Report:" Not Just Numbers.". Canadian Woman Studies, 19.

Arrow, K. J. 1973. Higher education as a filter. Journal of public economics, 2, 193-216.

Auriol, L. & SEXTON, J. 2002. Human resources in science and technology: measurement issues and international mobility. International mobility of the highly skilled, 13-39.

Ball, J. A. 2008. Feminization of the Labor Force, Development and Economic Reform: Effects on Job Segregation by Sex. The Journal of Developing Areas, 42, 53-67.

Baptiste, I. 2001. Educating lone wolves: Pedagogical implications of human capital theory. Adult Education Quarterly, 51, 184-201.

Barr, D. A. & BOYLE, E. H. 2001. Gender and Professional Purity: Explaining Formal and Informal Work Rewards for Physicians in Estonia. Gender and Society, 15, 29-54.

Battu, H. & Sloane, P. 2004. Over-education and ethnic Minorities in Britain. The Manchester School 72, 535-559.

Bauer, T., Loftstron, M. & Zimmermann, F. K. 2000. Immigration Policy, Assimilation of migrants and UK–born White's Sentiments towards migrants: Evidence from OECD Countries. Sweedish Economic Policy Review, 7, 11-53.

Baycan Levent, T., Masurel, E. & Nijkamp, P. 2003. Diversity in entrepreneurship: ethnic and female roles in urban economic life. International Journal of Social Economics, 30, 1131-1161.

Belfield, C. 2010. Over-education: What influence does the workplace have? Economics of Education Review 29

Bell, D. 1997. The performance of migrants in the United Kingdom: Evidence from the "GHS". The Economic 107, 333-344.

Bell, M. & Pavitt, K. 1997. Technological accumulation and industrial growth: contrasts between developed and developing countries. Technology, globalisation and economic performance, 83-137.

Benería, L. 2001. Shifting the Risk: New Employment Patterns, Informalization and Women's Work. International Journal of Politics, Culture and Society, 15, 27-53.

Berger, S. & Piore, M. J. 1981. Dualism and Discontinuity in Industrial Societies, Cambridge, Cambridge Press.

Berthoud, R. 2000. Ethnic Employment penalties in britain. Journal of ethnic and migration studies, 26, 389-416.

Bhaghwati, J. & Hanson, G. (eds.) 2009. Skilled Immigration Today; Prospects, Problems and Policies, Columbia and Oxford: Oxford University Press.

Bhagwati, N. 1976. The Brian Drain and Taxation: Theory and Emperical Analysis, Amsterdam, North Holland Publishing Company.

Blavatskyy, P. R. 2007. Stochastic Utility Theorem. In: ECONOMICS, I. F. E. R. I. (ed.). http://www.iew.uzh.ch/wp/iewwp311.pdf, accessed 07/11/2012: university of Zurich.

Blinder, A. S. 1973. Wage Discrimination: Reduced Form and Structural Estimates.
. The Journal of Human Resources 8, 436–455.

Borjas 1994. The economics of Immigration. Economic Literature, 32, 1667-1717.
Borjas, G. J. 1988. International Differences in the Labour Market Performance of migrants. Kalamazoo: Upjohn Institute for Employment research.
Braverman, H. 1974. Labor and Monopoly Capital. Monthly Review Press. New York: Review Press.
Brynin, M. & Guveli, A. 2011. Understanding the Ethnicity Pay Gap in Britain. Colchester: University of Essex.
Brynin, M. & Longhi, S. 2009. Overqualification: Major or Minor Mismatch? Economics of Education 28, 114-121.
Cabinet Office 2000. Quality in qualitative evaluation : migrants skills audit report. In: Department, G. S. (ed.). London: Government.
Casciani, D. 2002. Immigration: Fact or hype? BBC News Online Community Affairs [Online]. [Accessed 21 November 2011].
Castells, M. 1996. The Rise of Network Society. Malden, MA02148, USA.: Blackwell Inc.
Castles, S. 2002. Migration and Community Formation under Conditions of Globalization. International Migration Review, 36, 1143-1168.
Castles, S. 2004a. The Factors That Make and Unmake Migration Policies. International Migration Review, 38, 852-884.
Castles, S. 2004b. Why Migration Policies Fail. Ethnic and Racial Studies, 27, 205-227.
Chevalier, A. 2003. Measuring Over Education. Economica, 70, 509-531.
Chiswick, B. 1978. The Effects of Americanisation on the Earnings of Foreign Born Men. Political Economy, 86, 897-921.
Chiswick, B., Lee, L. Y. & Miller, P. W. 2005. Longitudinal Analysis of Immigrant occupational mobility: a test of the immigrant assimilation hypothesis. International Migration Review, 39, 332-353.
Chiswick, B. & Miller, P. 2008. Why is the payoff to schooling smaller for migrants? Labour Economics, 15, 1317-1340.
Chiswick, B. & Miller, P. 2009. The International transferability of migrants' human capital. Economics of Education Review, 28, 162-169.
Clark, K. & Lindley, J. 2009. Immigrant Assimilation Pre and Post Labour Market Entry: Evidence from the UK Labour Force Survey. Journal of Population Economics, 22, 175-198.
coleman, d. & rowthorn, r. 2004. The economic effects of immigration into the United Kingdom. Population and Development Review, 30, 579-624.
Cornelissen, T. & Sonderhof, K. 2009. Partial effects in probit and logit models with a triple dummy-variable interaction term. Stata Journal, 9, 571.
Cranford, C. J., Vosko, L. F. & Zukewich, N. 2003. The gender of precarious employment in Canada. Relations Industrielles/Industrial Relations, 58, 454-482.
Dell' Aringa, C. & Pagan, L. 2010. Labour Market Assimilation and Over-education: The case study of Immigrant Workers in Italy. Sottosessione Tematica: Migrazioni Milan: Department of Economics, University of Milan-Biccoca.
Disney, H., Azurmendi, M., Coleman, D., Jacoby, T., Rowthorn, R. & Toribio, J. J. 2003. Work in Progress:Migration, Integration and the European Labour Market. Lancing, Sussex: Hartington Fine Arts.
Docquier, F. & Rapoport, H. 2004. Skilled migration: the perspective of developing countries, World Bank Publications.
Drinkwater, S., Eade, J. & Garapich, M. 2009. Poles apart? EU enlargement and the labour market outcomes of migrants in the United Kingdom. International Migration, 47, 161-190.
Dustmann, C., Fabbri, F., Preston, I. & Wadsworth, J. 2003. Labour Market Performance of migrants in the UK labour Market. In: Office, H. (ed.). London: Home Office.

Elliott, R. J. R. & Lindley, J. K. 2008. Immigrant wage differentials, ethnicity and occupational segreagation. Journal of the Royal Statistical Society (Series A), 171, 645-671.

Ellis, M., Wright, R. & Parks, V. 2004. Work Together, Live Apart? Geographies of Racial and Ethnic Segregation at Home and at Work. Annals of the Association of American Geographers, 94, 620-637.

Ewers, M. C. 2007. Migrants, markets and multinationals: competition among world cities for the highly skilled. GeoJournal, 68, 119-130.

Fairlie, R. W. 1999. The absence of the African-American owned business: An analysis of the dynamics of self-employment. Journal of Labor Economics, 17, 80-108.

Field, A. J. 1980. Industrialization and Skill Intensity: The Case of Massachusetts. The Journal of Human Resources, 15, 149-175.

Fondas, N. 1997. Feminization Unveiled: Management Qualities in Contemporary Writings. The Academy of Management Review, 22, 257-282.

Friedberg, R. M. 2000. You Can't Take It with You? Immigrant Assimilation and the Portability of Human Capital. Journal of Labour Econmics, 18, 221-251.

Frobel, F. & Heinrichs, J. K. 1980. The new international division of labour. Cambridge: CUP.

Gans, H. J. 1992. Second Generation Decline, Scenarios for the Economic and Ethnic Features of the Post-1965 American migrants. Ethnic and Racial Studies, 15, 173-192.

Gould, W. T. S. 1998. Skilled International Labour Migration: An Introduction. Geoforum, 19, 381-85.

Green, F., Mcintosh, S. & Vignoles, A. 2002. The utilization of education and skills: evidence from Britain. The Manchester School, 70, 792-811.

Greenman, E. & Xie, Y. 2008. Is assimilation theory dead? The effect of assimilation on adolescent well-being. Social Science Research, 37, 109-137.

Groot, W. & Maassen Van Den Brink, H. 2000. Overeducation in the labor market: a meta-analysis. Economics of Education Review, 19, 149-158.

Groot, W. & Massen Van Den Brink, H. 2000. Overeducation in the labour market: a meta analysis. Economics of Education Review, 19, 149-158.

Haas, H. D. 2010. Migration and Development: A Theoretical Perspective. International Migration Review, 44, 227-264.

Hainmueller, J. & Hiscox, M. J. 2010. Attitudes toward Highly Skilled and Low-skilled Immigration: Evidence from a Survey Experiment. The American Political Science Review, 104, 61-84.

Hartog, J. 2000. Over-education and earnings: where are we, where should we go? Economics of Education Review, 19, 131-147.

Hartog, J. & Oosterbeek, H. 2000. Education, allocation and earnings in the Netherlands: Overschooling? Economics of Education Review, 7, 185-94.

Hill, R. C. & Fujita, K. 2003. The nested city: introduction. Urban Studies, 40, 207-217.

Hornbeck, D. W. & Salamon, L. M. 1991. Human capital and America's future: an economic strategy for the'90s, Johns Hopkins Univ Pr.

Hoven, B. V. 2001. Women at Work: Experiences and Identity in Rural East Germany. Area, 33, 38-46.

Jann, B. 2008. Blinder Oaxaca Decomposition for Linear regression models. Stata Journal, 8, 453-479.

Jones, B. & WOOD, S. 2000. Destruction or redistribution of engineering skills? The case of numerical control1. Technology, Organizations and Innovation: Critical empirical studies, 3, 1262.

Jonsson, J. O. & Erikson, R. 2000. Understanding Educational Inequality: The Swedish Experience. L'Année sociologique (1940/1948-), 50, 345-382.

Joppke, C. 2009. Limits of integration policy: Britain and her Muslims. Journal of ethnic and migration studies, 35, 453-472.

Kalleberg, A. L. 2000. Nonstandard Employment Relations: Part-Time, Temporary and Contract Work. Annual Review of Sociology, 26, 341-365.

Kelejian, H. H. & Robinson, D. P. 2004. The influence of spatially correlated heteroskedasticity on tests for spatial correlation. In: Anselin, L., Florax, R. J. G. M. & Rey, S. J. (eds.) Advances in spatial econometrics: methodology, tools and applications. Springer.

Khadria, B. 2002. Skilled labour migration from developing countries: Study on Indian, International Labour Office Geneva.

Kivinen, O. & Ahola, S. 1999. Higher Education as Human Risk Capital: Reflections on Changing Labour Markets. Higher Education, 38, 191-208.

Kogan, I., Kalter, F., Liebau, E. & Cohen, Y. 2011. Individual Resources and Structural Constraints in migrants' Labour Market Integration. A Life-Course Perspective on Migration and Integration, 75-100.

Koser, K. & Salt, J. 1997. The geography of highly skilled international migration. International Journal of Population Geography, 3, 285-303.

Lindley 2009. The over-education of UK migrants and minority ethnic groups: Evidence from the Labour Force Survey. Economics of Education Review, 28 80-89.

Lindley, J. & Lenton, P. 2006. The Overeducation of UK migrants: Evidence from the UK Labour Force Survey. In: Sheffield, U. O. (ed.) Department of Economics. Sheffield: Department of Economics University of Sheffield.

Lowe, G. S. 1980. Women, Work and the Office: The Feminization of Clerical Occupations in Canada, 1901 - 1931. The Canadian Journal of Sociology / Cahiers canadiens de sociologie, 5, 361-381.

Luthra, R. R. 2010. Enduring Inequality: Labour market outcomes of the Immigrant second generation in Germany. Colchester: Institute of Social and Economic Resaerch, No.2010-30.

Mahroum, S. 1999. Competing for the highly skilled: Europe in perspective. Science and Public Policy, 26, 17-25.

Mahroum, S. 2000. Highly skilled globetrotters: mapping the international migration of human capital. R&D Management, 30, 23-32.

Man, G. Gender, work and migration: Deskilling Chinese immigrant women in Canada. Women's Studies International Forum, 2004. Elsevier, 135-148.

Mannon, S. E. 2006. Love in the Time of Neo-Liberalism: Gender, Work and Power in a Costa Rican Marriage. Gender and Society, 20, 511-530.

Marginson, S. 1993. Education and public policy in Australia, Cambridge University Press.

Marini, M. M. & Fan, P.-L. 1997. The Gender Gap in Earnings at Career Entry. American Sociological Review, 62, 588-604.

Martin, R. 1997. New technology in Fleet Street. 1975-80. Resistance to New Technology: Nuclear Power, Information Technology and Biotechnology, 189.

Marx, J. 2006. The Feminization of Globalization. Cultural Critique, 1-32.

Massey, Arango, J. S., Hugo, G., Kouaouci, A., Pellegrino, A. & Taylor, E. J. 1993a. Theories of International Migration: A Review and Appraisal. Population and Development Review, 19, 431-466.

Massey, D. 1994. "An Evaluation of International Migration Theory: The north American Case,". Population and Development Review, 20, 699-751.

Massey, D. & Arango, J. 1993. Theories of international migration: a review of and appraisal. Population and Development Review, 19, 431-466.

Massey, D. S. & Hirst, D. S. 1998. From escalator to hourglass: Changes in the US occupational wage structure 1949–1989. Social Science Research, 27, 51-71.

Mcduff, E. M. & Mueller, C. W. 2002. Gender Differences in the Professional Orientations of Protestant Clergy. Sociological Forum, 17, 465-491.

Mcfadyen, J. M., Kerpelman, J. L. & Adler-Baeder, F. 2005. Examining the Impact of Workplace Supports: Work-Family Fit and Satisfaction in the U.S. Military. Family Relations, 54, 131-144.

Mcgoldrick, K. & Robst, J. 1996. Gender Differences in overeducation: A test of the theory of differential overqualification. American Economic Review, 86, 280-284.

Mignon, D. 2007. Doing the Dirty Work: Gender, Race and Reproductive Labor in Historical Perspective. Gender and Society, 21, 313-336.

Moore, R. Q. 2000. Multiracialism and Meritocracy: Singapore's Approach to Race and Inequality. Review of Social Economy, 58, 339-360.

Morawska, E. 1994. In defense of the assimilation model. Journal of American Ethnic History, 76-87.

Morawska, E. 2007. International Migration: Its Various Mechanisms and Different Theories, paper no 1650-5743. International Migration and Ethnic Relations. Sweden: Malmo University.

Morawska, E. 2009. A Sociology of Migration. (Re) Making Multifaceted America. England: Palgrave Macmillan.

Newman, J. 1968. Race. Migration and Integration. London: Burns and Oats

Oaxaca, R. L. & Ransom, M. R. 1994. On discrimination and the decomposition of wage differentials. Journal of Econometrics, 61, 5–21.

Penn, R. & Scattergood, H. 1985. Deskilling or Enskilling?: An Empirical Investigation of Recent Theories of the Labour Process. The White Journal of Sociology, 36, 611-630.

Penn, R. & Scattergood, H. 1988. Continuities and Change in Skilled Work: A Comparision of Five Paper Manufacturing Plants in the UK, Australia and the USA. White Journal of Sociology, 69-85.

Perlmann, J. & Waldinger, R. 1997. Second generation decline? Children of migrants, past and present-a reconsideration. International Migration Review, 893-922.

Pleck, J. H. 1977. The Work-Family Role System. Social problems, 24, 417-427.

Portes, A. 1995. The economic sociology of immigration, Russell Sage Foundation New York.

Portes, A. & Fernandez-Kelly, P. 2008. No Margin for Error: Educational and Occupational Achievement among disadvantaged children of migrants. The Annals of the American Academy of Political and Social Science, 620, 12-36.

Portes, A. & Rumbaut, G. R. 1996. migrants in America, A Potrait. Berkeley: University of Calfornia Press

Portes, A. & Rumbaut, G. R. 2001. Legacies: The story of the Immigrant second Generation. Berkeley: University of Calfornia Press.

Portes, A. & Zhou, M. 1993a. The New Second Generation: Segmented Assimilation and its Variants. The Annals of the American Academy of Political and Social Science, 530, Interminority Affairs in the U.S.:Pluralism at Crossroads, 74-96.

Priti Ramamurthy 2010. Why Are Men Doing Floral Sex Work? Gender, Cultural Reproduction and the Feminization of Agriculture. Signs, 35, 397-424.

Rich, B. L. 1995. Explaining Feminization in the U.S. Banking Industry, 1940-1980: Human Capital, Dual Labor Markets or Gender Queuing? Sociological Perspectives, 38, 357-380.

Roediger, D. R. 1994. Towards the abolition of UKness: Essays on race, politics and working class history, Verso Books.

Rollason, N. 2002. International mobility of highly skilled workers: The UK perspective. International mobility of the highly skilled, 327-342.

Salt, Clarke, J. & Wanner, P. 2004. International labour migration, Council of Europe.

Salt & Millar, J. 2006. Foreign labour in the United Kingdom: current patterns and trends. Labour Market Trends, 114, 335-355.

Salt, J. & Clarke, J. 1998. Flows and stocks of foreign labour in the UK. Labour Market Trends, 371-385.

Schaffner, B. 2011. Introduction to Regression. Colchester: Essex Summer School in SSDA

Schiller, N. G. 2009. A Global Perspective on Migration and Development. Social Analysis: The International Journal of Social and Cultural Practice, 53, 14-37.

Schultz, T. W. 1961. Investment in human capital. The American Economic Review, 1-17.

Shumba, N. 2005. Migration and Economic Opportunities: Deskilling and Immigration Status of the Zimbabwean migrants in the UK. Liverpool: University of Liverpool.

Sicherman, N. 1991. Overeducation in the labour market. Labour Economics, 9, 101-122.

Sloane, P., Battu, H. & Seaman, P. J. 1996. Overeducation and the formal Education/ Experience and training trade-off. Applied Economics Letters, 3, 511-515.

Sloane, P., Battu, H. & Seaman, P. T. 1999. Overeducation, Undereducation and the White Labour Market. Applied Economics, 31, 1437-1453.

South, S. J., Crowder, K. & Chavez, E. 2005. Migration and Spatial Assimilation among U.S. Latinos: Classical versus Segmented Trajectories. Demography, 42, 497-521.

Speier, H. 1938. The Social Determination of Ideas. Social Research, 5, 182-205.

Spenner, K. I. 1985. The Upgrading and Downgrading of Occupations: Issues, Evidence and Implications for Education. Review of Educational Research, 55, 125-154.

Standing, G. 2011. The precariat: The new dangerous class, Bloomsbury USA.

Steenbergen, M. 2012. Logit and Probit Models. In: Essex, U. O. (ed.) Essex summer School. Essex summer school.

Tannock, S. 2009. Global meritocracy, nationalism and the question of whom we must treat equally for educational opportunity to be equal. Critical Studies in Education, 50, 201-211.

Turner, H. A. 1962. Trade union growth: structure and policy: a comparative study of the cotton unions in England, University of Toronto Press.

UKHLS 2011. University of Essex. Institute for Social and Economic Research and National Centre for Social Research, UKHLS: Wave 1, 2009-2012 [computer file] Colchester, Essex: UK Data Archive [distributor2nd Edition. . . September 2011 ed.: Colchester, Essex: UK Data Archive [distributor],.

Van Tubergen, F. 2004. The Integration of migrants in Cross- National Perspective: Origin, Destination and Community Effects. Wageningen: Ponsen and Looijen.

Van Tubergen, F., Maas, I. & Flap, H. 2004. The Economic Incorporation of migrants in 18 Western Societies: Origin, Destination and Community effects. American Sociological Review, 69, 704-727.

Vertovec, S. 2002. Transnational networks and skilled labour migration, University of Oxford. Transnational Communities Programme.

Wilkinson, B. 1983. The shopfloor politics of new technology, Heinemann Educational London.

Wolffi, E. 1996. Technology and the Demand for Skills. In: STI (ed.) STI Review. Paries: OECD.

Zhou 1997. Growing Up American: The Challenge Confronting Immigrant Children and Children of migrants. Annual Review of Sociology, 23, 63-95.

Zhou & Lee, J. 2008. Success attained, deterred, denied: divergent pathways to social mobility in Los Angeles's new second generation. The Annals of the American Academy of Political and Social Science, 620, 37-61.

Zorlu, A. 2002. Absorption of migrants in European Labour Markets. The Netherlands, United Kingdom and Norway. Universiteit van Amsterdam, Tinbergen Institute Thesis No.279.

Zorlu, A. 2011. Occupational Adjustments of migrants, Discussion paper No.6147. Amsterdam & Born: IZA.

PAPER TWO: OCCUPATION AND COUNTRY OF ORIGIN PAY ASYMMETRY BY GENDER: A COMPARATIVE STUDY OF IMMIGRANTS AND UK BORN WHITE IN THE UK LABOUR MARKET

INTRODUCTION

> [G]reat strides have been made to date on [gender pay gap] by women and men both in the labour market and in society. However the persistence of a significant gender pay gap points not only to women's continuing experience of discrimination within the work place, but to other trends that have a serious impact on women's lives, such as occupational segregation [vertical and horizontal], a disproportionate share of caring responsibilities, lack of well paid, high quality part time work and the undervaluation of work done by women (Hopkins, 2011, p.10).

Worldwide, high earning profile occupations/jobs remain dominated pervasively by men and are a major source of pay asymmetry[43] between men and women (Gneezy, Niederle, & Rustichini, 2003) and, consequently, low-earning jobs remain extensively dominated by women. To a large extent, pay asymmetry seems inevitable at the workplace given that male and female employees are engaging in different occupational and earning levels, despite the enactment and implementation of several Equal Pay Acts outlawing occupation and pay segregation based on gender, at the workplace (Kulow, 2013). Concurrently, debates and research continue to gather momentum amongst social scientists worldwide, in particular, advocates of 'comparable worth'[44], questioning the strategies of economic and legal institutions in addressing gender[45] pay gap[46] in the workplace (eg Gow & Middlemiss, 2011; Kofman & Raghuram, 2006; Kulow, 2013; Lips, 2013; McKay, Campbell, Thomson, & Ross, 2013).

In the introductory chapter, I have explored the factors highlighted in the 'comparable worth' literature. I will now explore those elements in order to contextualize the subsequent analysis. First, there are ensuing substantial differences in the types of occupations held by men and women today. Second, occupations

43 Pay differences at the work place (working definition in this paper).
44 This means that jobs requiring similar levels of skill, effort and responsibility and similar working conditions must be paid equal wages (Treiman & Hartmann, 1981)
45 Gender refers to socially formed traits of masculinity and femininity, including social expectations about behaviour regarded as appropriate for men and women, see (Eagly, 2013), but in this research, such women attributes are coded 1 and men attributes are coded 0, and to illuminate such cleavages on gross earnings, separate regressions are implemented for men and women.
46 Is a measure of the percentage gap between the pay of women and men as a proportion of men's pay (Brynin & Guveli, 2011) .

mainly held by women generally receive lower pay (past and present),— there are a number of attributes I pointed out under twin theories of horizontal and vertical occupational segregation as well as on social capital implications on social networks across men and women (Charles, 2011; England & Browne, 1992; Toma & Vause, 2010; Treiman & Hartmann, 1981; Tsang & Levin, 1985). Third, there are some *caveats* surrounding 'comparable worth' in the context of the universal feminist discourse, a view often taken for granted in much contemporary literature. Why is this case? This was in part instigated by historical processes, in particular slavery and the racial caste system, which form the historical background for black women's disadvantages concerning paid work and also implies that their subjugation differs from that of white women's (Amott & Matthaei, 1996). Also, drawing from Kilbourne et al. (1994)'s study and some of their lucid citations, as a consequence of differing backgrounds, black women's current occupational distributions in post-industrial labour markets supposedly differ markedly from those of their counterparts. Hence, many of the policy initiatives associated with the feminist movement and feminist theory have ignored such differences in their formulations. Concurrently, black women are often portrayed in the literature as perceiving feminists' legitimate concerns regarding 'comparable worth' as irrelevant to their experience or else they articulate their concerns in a different way, viewing many polices as ways of redistributing material wealth between white men and white women (ibid).

A large number of studies have been devoted to understanding the gender pay gap based on gender-specific factors (i.e., differences in either qualifications or labour market of similarly qualified individuals) (Blau & Kahn, 2000), often disregarding factors such as disproportionate occupational placement and differences associated with country of origin groups, gender and immigration policies—I hypothesize these issues driving different wage structures—assortment of prices determined for labour market abilities and payments to occupation in precise sectors for men and women at the place of work (ibid). This study tries to contribute to narrow this gap in the literature by paying attention not only to the pay asymmetry by occupation and country of origin, but, also fully accounting for the complex survey design nature of the UKHLS data in question (Knies, 2014). By and large this study corroborates the findings of a number of empirical studies on the subject of socio-economic integration of immigrants in post-industrial labour markets.

Field literature has paid much to the discussion of occupational differences and implications for pay mainly for major ethnic groups in the UK labour market, hence, paying scant attention to 'old' and 'new' immigrant groups by country of origin and gender (see examples : Battu & Sloane, 2004; Bird, Saalfeld, & Wust, 2011; Blackaby, Drinkwater, Leslie, & Murphy, 1997; Boydell et al., 2001; Brinbaum & Cellabolla-Boado, 2007; Brynin & Guveli, 2011; Anthony Heath & Cheung, 2007; Jones, 1993; Leong, 1996; Leslie, Drinkwater, & O'Leary, 1998; Modood, Berthoud, & Lakey, 1997; Modood et al., 2000a; Modood, Berthoud, Lakey, Virdiee, & Beishon, 2000b; Okazaki & Sue, 1998; Shields & Price, 2002). The driving mechanisms behind pay asymmetry will be addressed in this paper and now I turn to the empirical analysis of pay asymmetry in the UK labour market. The remainder of the paper is structured as follows. The next section specifies the scope of the research, outlining the research hypothesis being tested. Section 3 offers survey design weighted descriptive statistics. Section 4 presents descriptive stats, followed by section 5 reporting survey design adjusted empirical results, and to conclude, section 6 discusses the findings and presents final remarks.

2. ANALYSIS FOCUS: RESEARCH QUESTION AND HYPOTHESIS

Research projects using multilevel regression models (MLM), estimated with complex survey data are quite recent (Chantala et al., 2011). However, this research technique has not only influenced several popular software packages to incorporate sampling weights into the estimation, but also emphasized an important issue, often overlooked by both analysts and providers of the UKHLS data: "the sampling weights used for multi-level analysis need to be constructed differently than the sampling weights used for single–level analysis" (Chantala et al., 2011, p. 1). In brief, this paper analyses pay asymmetry by occupation and country of origin of men and women who are economically active in the UK labour market using UKHLS wave 1 data (2009-10), aged 16 to 67. In fact, my research question investigates occupation and country of origin based pay asymmetry, first comparing immigrants men and women to UK white born men and women, then extended to men and women 'old' and 'new' immigrants.

Aligned with the socio-economic integration literature and theories already reviewed in the introduction chapter of the thesis, as well as insights from past empirical research in the UK and beyond, this empirical paper analyses the following research

questions and hypotheses similar analytic compositional structure in terms of gender and immigrants dichotomies (‘old’ and ‘new’):

More specifically, this paper investigates *whether pay asymmetry in terms of occupation and country of origin characteristics is worse off for ‘old’ and ‘new’ immigrants (men and women) than it is compared to the UK born white (men and women)*. To answer the preceding research question the following null hypotheses are examined:

i) Pay asymmetry across ‘old’ immigrants, men and women are comparably similar to those of the UK white born (men and women) in the UK labour market.

ii) Pay asymmetry across ‘new’ immigrants, men and women are comparably similar to those of the UK white born (men and women) in the UK labour market.

Alternative hypotheses:

(i) Pay asymmetry across ‘old’ immigrants (men and women) are comparably dissimilar to those of the UK white born (men and women) in the UK labour market.

(ii) Pay asymmetry across ‘new’ immigrants (men and women) are comparably dissimilar to those of the UK white born (men and women) in the UK labour market.

The articulated research question and hypotheses are in line with the literature in this field, in particular the studies focusing on immigrant’s socioeconomic integration in the labour market, for example: (Casciani, 2002; Clark & Lindley, 2009; Dickens & McKnight, 2008; Dustmann et al., 2003). Dickens and McKnight (2008, p. 1), assert

> [t]hat when a migrant worker first arrives they experience a pay gap with native born counterparts of over 30% for men and 15% for women. This pay penalty declines with years spent in Britain. For migrant men it takes 20 years to eradicate this difference. For migrant women just 4-6 years. Different nationalities experience different rates of assimilation, with Europeans catching up the fastest but Asian men showing little signs of catching up at all. More recent entry cohorts of migrants have fared better but this is largely because they enter with a smaller pay penalty rather than experience faster wage growth.

By using 9 one-digit- SOC2000 occupation dummies in each model tested, the empirical analysis carried out also accounts for the extent to which pay asymmetry is promoted and sustained by disproportionate horizontal and vertical occupations of men and women across country of origin groups in the UK labour market.

This paper therefore contributes to the research agenda on the study of pay asymmetry using 9 one-digit SOC2000 occupation and country of origin as key determinants and mainly adjusting for the classical socio-economic and demographic factors (i.e., education years, work force experience, weekly hours worked, age, age squared, place of birth, years since migration, years since migration squared, English language proficiency, marital status, urban and number of children in household (just to mention a few), see data and methods section for coding and discussion on key variables (regressands and regressors). Across models in the paper, heckman selection equation models are implemented to take account of women's labour supply responses deemed more elastic than men's (Layard, Barton, & Zabalza, 1980), again see the introductory chapter's data and method section on this approach directed to women subgroups in general.

Contrary to Altorjai (2013)'s approach- also using UKHLS data, I have included women in my analyses — I see no reason to exclude them in my study. According to Brynin and Guveli (2011, p. 4), "[d]iscrimination against women occurs too, and course women compete for jobs against men. While other studies isolate groups of interest 'using if modelling syntax'—which pitifully results in the deletion of PSUs (or clusters), instead, I resort to unconditional approach— which accounts for random variability in subpopulation samples of interest, i.e., contrary to "conditioned" approaches by which sample of observations are "obtained from the subpopulation under the larger SRS sample selection" (West, Bergland, et al., 2008, p. 521). With complex survey data, as the UKHLS,—it is fundamental to incorporate weighting in the analysis which reflects the sample design characteristics, i.e., a measure against serious model misspecifications (ibid).

This paper incorporates unconditional approach to studying pay asymmetry in the UK labour market (West, Berglund , et al., 2008), an methodological approach I have discussed already in the data and methods section, therefore will only reiterate attributes I find illuminating based on the approach in question. This approach is intrinsically interesting, but, it is also important for two practical reasons. First, it offers practical implementation of subpopulation analysis taking full account of the

survey complex design and full sample estimation, which in my perspective is an improvement to a conditional approach which leads to a drawback of losing PSUs, hence, resulting in biased standard errors and postestimation statistics (ibid). Second, an unconditional subpopulation approach offers robust estimation of standard errors for statistics based on the total sample (ibid). None of the studies I have reviewed have incorporated unconditional subpopulation approaches – with the exception of West, Berglund , et al. (2008) and Krueter and Varliant.R (2007). In this context, my primary contribution is to bridge that gap in the socio-economic integration studies. On the other hand, the study corroborates literature on socio-economic integration of immigrants in the UK labour market and beyond.

Moreover, this paper compares pay asymmetry by occupation and country of origin groups relative to UK born White men and women. The empirical analysis also focuses on 'old' and 'new' immigrants (men and women) relative to EU15 men and women (old and new immigrant cohorts). Distinct to men country of origin groups, the approach undertaken for women country of origin groups account for their non-random selection of women into high paying jobs in the UK labour market –see data and methods section of the thesis introductory chapter on women selection issues.

To capture women's and men's pay asymmetry in the UK labour market, nine one digit SOC2000 occupation and 14 country of origin group dummies are constructed and regressed on log wage, adjusted for socio-economic and demographic factors I have highlighted in the introductory chapter—see data and methods section. The UKHLS wave 1 data, apart from offering diversity of information on the UK general population sample, it has more immigrants captured in it than any subsequent UKHLS waves, as such offers a better scope to analyse pay asymmetry of country of origin groups using wave 1(Lynn, 2009, 2011).

In other words, the diversity across country of origin groups (immigrants and UK born White) configured, as was discussed in the data and methods section, a pay asymmetry approach is one way to study differential socio-economic integration outcomes cross sectionally, in my case analysing immigrants' pay asymmetry relative to the UK born White, in the next section I explore the statistical analysis of pay asymmetry using clustered/ multilevel correlated data approach (Fitzmaurice & Laird, 1995; Gelman & Hill, 2009; Hox, 2010).

3.0 Statistical Analysis of Pay asymmetry

More specifically, this paper analyses pay asymmetry based on occupation and origin country as primary determinants using a regression method called survey Mixed Effects GLM—with Primary Sample Units (PSUs) as my level 2 units and Final Sample Units (FSU) /observations as level 1. On what concerns the work by Fitzmaurice and Laird (1995), there are broadly three approaches for handling clustering in regression models, i.e., (i) introducing random effects to account for clustering using mixed effects regression (ii) introduce fixed effects to account for clustering—does support complex survey design of data (iii) ignoring clustering, but they advise be "a clever ostrich"— this is an ad hoc strategy and has no rigorous justification, hence I do not go any further than listing it here. Given the latest Stata suite of commands for handling multi-level modelling and commensurate programs and algorithms to rescale survey complex weights, I have decided to adopt option (i) and rescaling of weights pertaining to this approach have been sufficiently discussed and illustrated in the data and methods section, hence, will not repeat this discussion here. The generic configuration of the multilevel approach and the rationale behind it in this empirical chapter were discussed in detail in the introductory chapter, as well why women's wages are based on the Heckman selection equation model (Heckman, 1979; Heckman & Sedlacek, 1985).

However a point to reiterate here is that, a multilevel model can be simply perceived as a regression that includes categorical input variables representing group memberships—hence, in this context, the group index is a factor with j levels, corresponding to j predictors in a regression model (ibid).

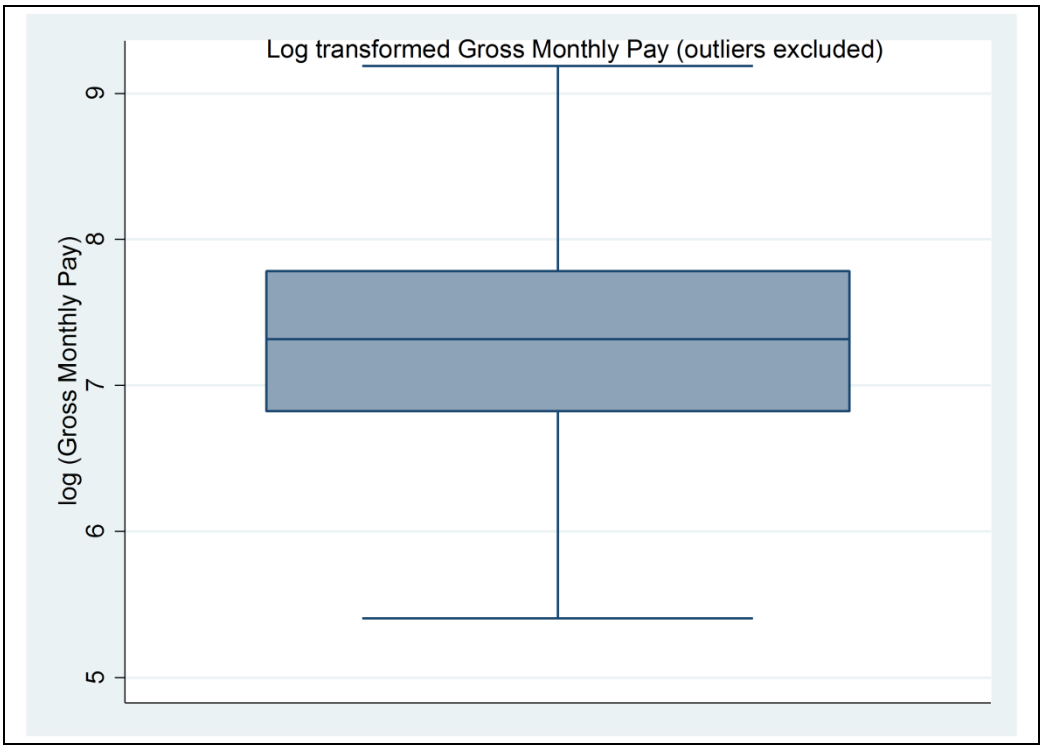
The empirical analyses of pay asymmetry are carried out using svy, (subpop group x): MEGLM, and svy, (subpop group x): *heckman* dependent variable plus independent variables, of which svy captures the survey complex design of the UKHLS—see the methods and data section for more nuanced discussion of these estimation procedures. The Heckman selection model was discussed in the data and methods section, and so is the basic generic structure, hence, it will be redundant to present it here again.

4. Dependent variable

The dependent variable is a log transformation of usual gross pay per month: current job (paygu_dv) hereafter referred to as log wage for simplicity of speech. Why log - transforming it? Firstly, this is to "impose a constant percentage effect" of each

independent variable — it is mathematically proven that a change to any "logarithmic form approximates a proportionate change", hence, "nothing happens to the slope", i.e., the β of each predictor (Jeffrey Wooldridge, 2003, pp. 45-46). Secondly, it is a normal practice to log-transform wage data in empirical analysis (Heckman & Honore, 1990; Heckman & Sedlacek, 1985; MacKinnon & Magee, 1990). Figure2: 1 log transformed usual gross pay log transformed (only earnings within the 1.5 box lengths of the upper and lower box edge are used for all analyses in this paper and the rest of the thesis (Stata *hilo* command used to identify the outliers— may indicate a sample peculiarity or a data entry error or other problems.[47]

Figure2 1: Distribution of Log of Gross Monthly Pay (log wage)



Source: Own computation based on UKHLS Wave 1 data (2009-10)

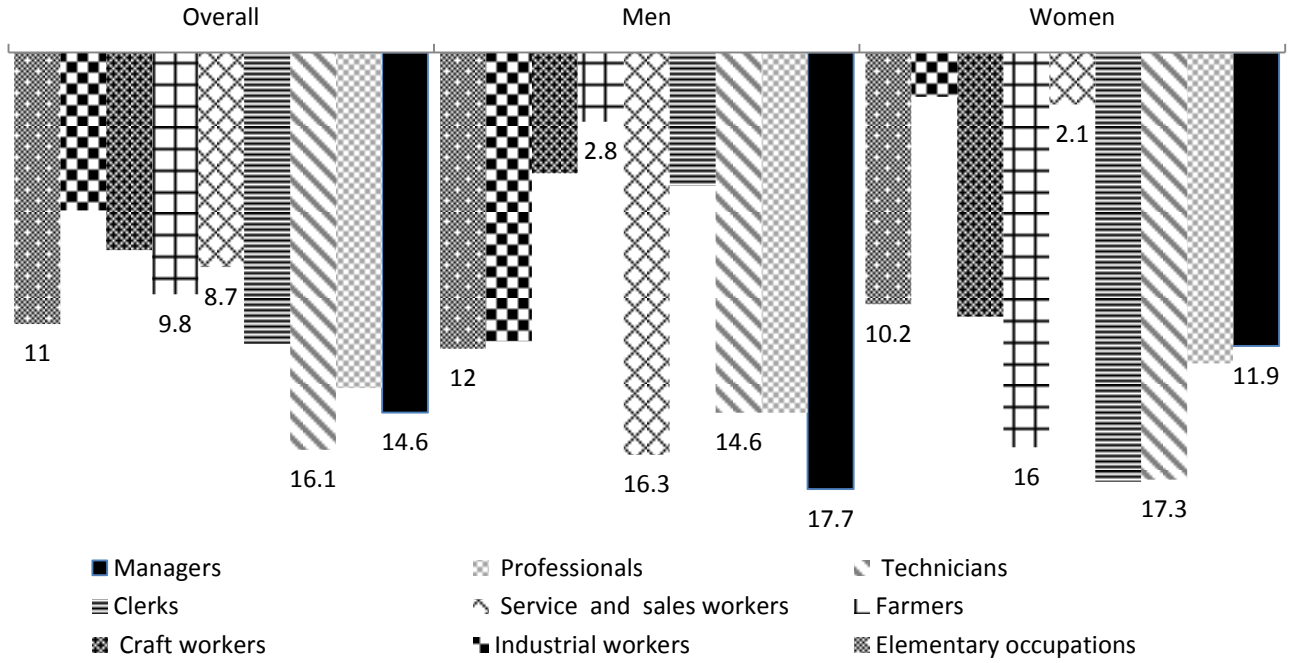
4.1 Descriptive Statistics

In this section, I examine men- and women- country of origin groups' distributions within and across occupations, as well as their pay asymmetry variances in the UK labour market using weighted-clustered multivariate and - *Heckman selection* regressions for men and women respectively. Since the country of origin groups and the data used are similar in paper one and two, and in order to prevent redundancy, I will cross-reference some typical descriptive stats tables used in paper one in this

[47] http://www.ats.ucla.edu/stat/stata/webbooks/reg/chapter2/statareg2.htm, Accessed on 23/08/2015.

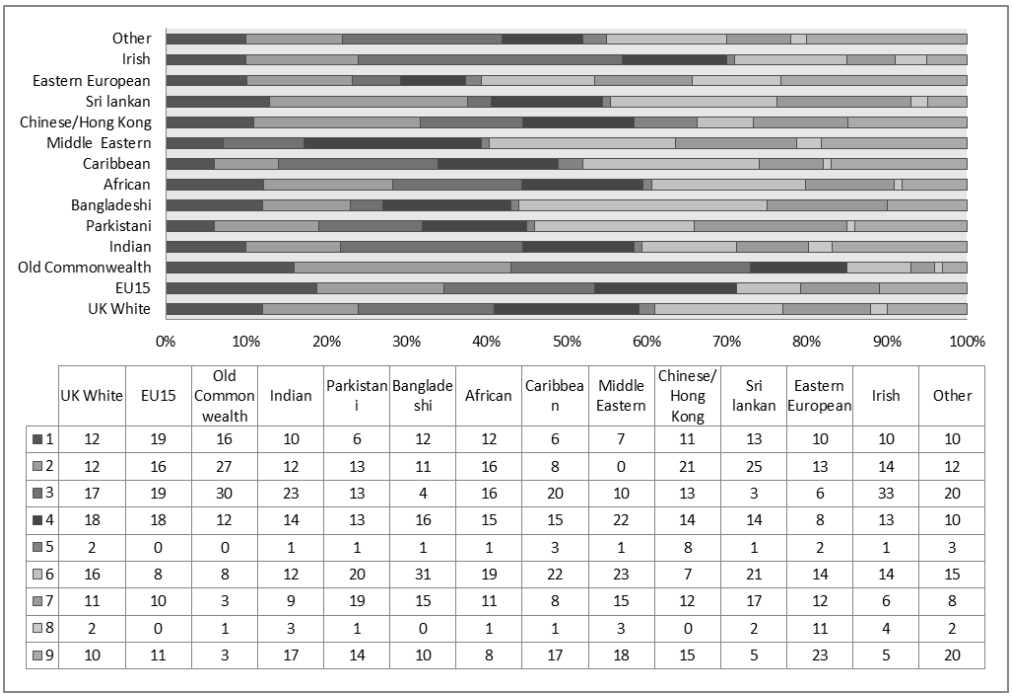
paper as well. In that context, in addition to descriptive stats shown in Table 1 1 statistics, i.e., *Economic Activity and Inactivity of Country of origin groups, Immigration Status of Men And Women in the UK Labour Market % (weighted)* presented in paper one, Figure2 3 and Figure 2 4, show weighted occupational activity distribution outcomes for women and men in the UK labour market. In all subsequent descriptive tables, distribution and occupational participation statistics are based on row percentages—mainly to adjust for differences in sample sizes across country of origin groups for both men and women, and more importantly, to make them more comparable based on a uniform scale (%). In general, descriptive stats presented using Figure 2 2 through Figure2 4 show a wide variety of occupational and pay asymmetry schisms in the UK labour market, within and across country of origin men and women. Second, the diversity in pay asymmetry values is based on each group's log wage mean. Third, comparison of log wage mean difference of each immigrant group's log wage mean compared to the UK White's is presented in Figure2 6. Finally, the descriptive section concludes with the presentation of the results of the post hoc tests using multi-group column-row pairwise mean of gross pay across country of origin groups, using the Stata suite test known as Conover-Iman test (conovertest) (Ronald & Conover, 1979)—only statistically significant differences are presented in Table 2 2. Figure2 2 shows gender composite industrial distributions in terms of current one-digit SOC2000 occupations. In Figure2 2, I present discrete industrial distributions based on 14 countries of origin groups by gender. It is also important to mention that Figure 2 2 through Figure2 4 reveal significant characteristics of the UKHLS sample that could affect subsequent empirical results. For example, contrary to men, women have a higher prevalence in low paying jobs, i.e., clerical work, compared to high paying managerial positions (men register 14.6% and women only 11.9%), see Figure 2 2. The gender differences are even more conspicuous in the farming sector in which 16% of workers are female and only 2.8% of farm workers are male.

Figure2 2: The Percentage Distributions of 9 One-Digit Soc2000 Occupations by Gender in the UK Labour Market (weighted)



Source: UKHLS data wave 1(2009-2010)

Figure2 3 Women country of origin groups across 9 -one digit-SOC2000 occupations



	UK White	EU15	Old Commonwealth	Indian	Pakistani	Bangladeshi	African	Caribbean	Middle Eastern	Chinese/ Hong Kong	Sri lankan	Eastern European	Irish	Other
1	12	19	16	10	6	12	12	6	7	11	13	10	10	10
2	12	16	27	12	13	11	16	8	0	21	25	13	14	12
3	17	19	30	23	13	4	16	20	10	13	3	6	33	20
4	18	18	12	14	13	16	15	15	22	14	14	8	13	10
5	2	0	0	1	1	1	1	3	1	8	1	2	1	3
6	16	8	8	12	20	31	19	22	23	7	21	14	14	15
7	11	10	3	9	19	15	11	8	15	12	17	12	6	8
8	2	0	1	3	1	0	1	1	3	0	2	11	4	2
9	10	11	3	17	14	10	8	17	18	15	5	23	5	20

Key 1: Legislators, senior officials and managers; 2: Professionals; 3. Technicians and associate professionals; 4 Clerks; 5 Service employees and shop and market sales employees; 6 Skill agricultural and fishery employees; 7 Craft and related employees; 8 Plant and machine operators and assemblers and, 9 Elementary occupations.

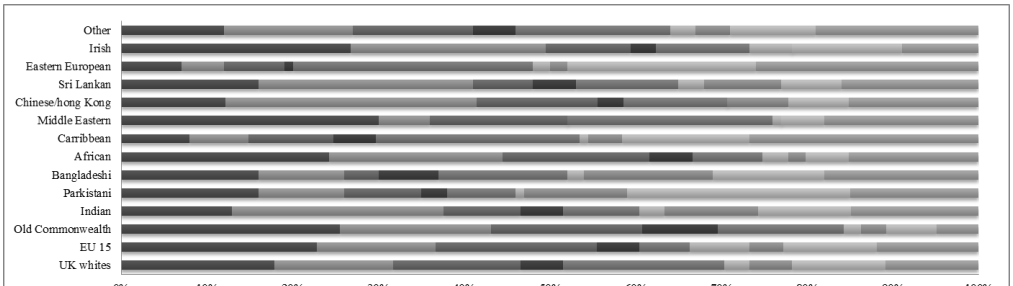
Notes: The occupational proportions are statistically significant, i.e. W0 = 12.528057 df (12, 26536) Probability > F = 0.00000000. Pearson: Uncorrected chi2 (96) = 280.181 and Design-based F (65.95, 1.7e+05) =3.3734 P = 0.0000. Strata with single sampling unit centred at overall mean and 11 strata omitted because they contain no population members.

Figure 2 3 summarizes the occupational distribution of women country of origin groups across 9 one-digit SOC2000 occupations. Among country of origin women groups, there are evident differences in terms of occupational participation rates, which is likely to have a bearing on pay asymmetry. In tandem with Yeandle et al. (2006)'s findings, UK white women have a 12 % participation rate in legislative, senior official and management occupations, compared to Indian (9%) and Pakistani (6%). However, in the case of Bangladeshi women the findings are not in line with the evidence in the literature – these women have a similar participation rate to that of UK women (12%). However Old Commonwealth and EU15 women country of origin groups have higher participation rates compared to UK women, i.e., 16% and 18% respectively. In fact, such country of origin groups are perceived in the literature as the groups having 'easy' integration processes, compared to a number of

visible minority groups, namely Indian, Pakistani and Bangladeshi (Altorjai, 2013; Brynin & Guveli, 2011; Demireva, 2011; Anthony Heath & Sin Yi Cheung, 2006).

Figure 2 4 (below) presents the distribution of country of origin occupational participation rates for men across 9 one-digit-SOC2000 occupations. Figure2 4 reveals significant differences in the characteristics of country of origin groups across 9 one-digit-SO2000 occupations, which certainly contribute to explain the wider phenomena of pay asymmetry in the UK labour market. In Legislative, Senior official and management occupations, the participation rates of EU15, Old Commonwealth, African, Middle Eastern and Irish men range from 22% to 26% compared to the UK white men's 18% participation rates in the similar occupational category. As shown in Figure 2 4, within similar high-paying occupations, the participation rate for Caribbean and Eastern European men only reaches 7%. However, across all the occupations presented in Figure 2 4, all groups show significant disproportional representations, peculiarly, three groups registering null participation rates in three occupational sectors: Middle Eastern men in clerical occupations, Chinese men in agricultural and fishery industries and Irish men in craft and related works. The descriptive statistics in Figure 2 4 indicate that the participation rates in elementary occupations for Pakistani, Bangladeshi and Indian men and women vary between 14% and 18% , reaching 26% in the case of Caribbean and Eastern European men.

Figure2 4 men country of origin groups across 9 -one digit-SOC2000 occupations

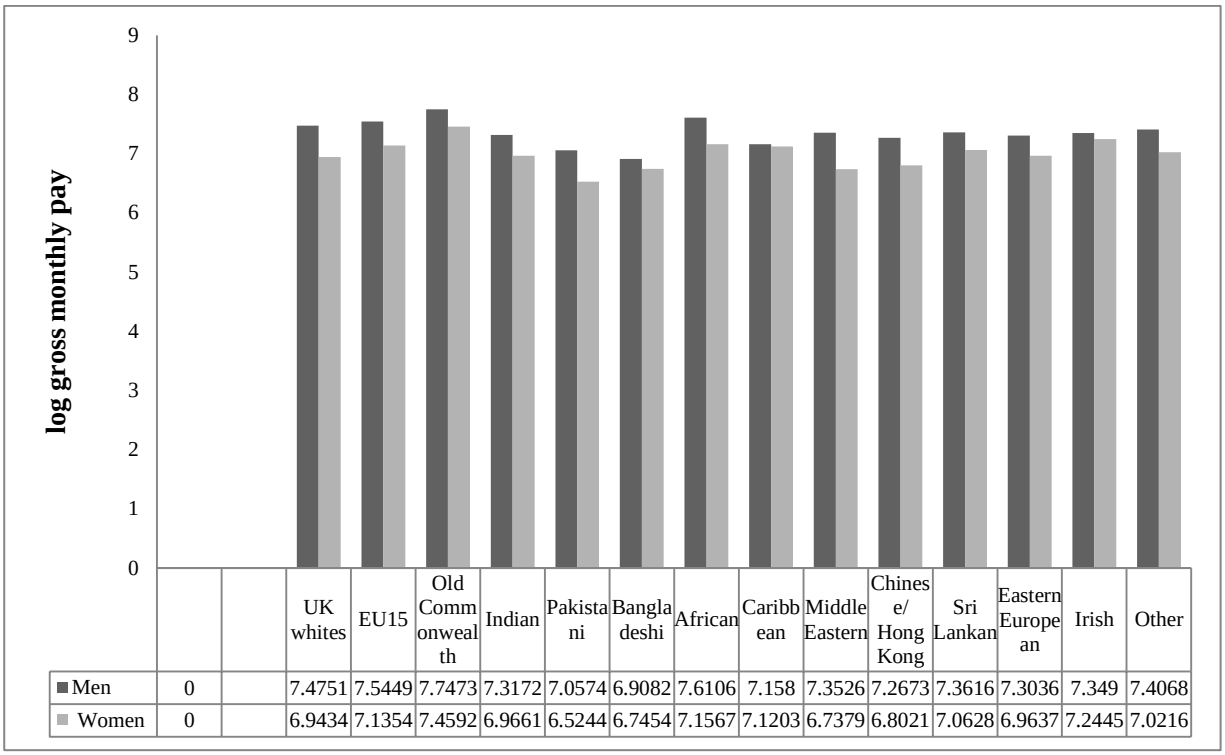


	UK whites	EU 15	Old Commonwealth	Indian	Parkistani	Bangladeshi	African	Carribbean	Middle Eastern	Chinese/hong Kong	Sri Lankan	Eastern European	Irish	Other
1	18	23	26	13	16	16	24	8	30	12	16	7	27	12
2	14	14	18	25	10	10	20	7	6	29	25	5	23	15
3	15	19	18	9	9	4	17	10	16	14	7	7	10	14
4	5	5	9	5	3	7	5	5	0	3	5	1	3	5
5	19	6	15	9	8	15	8	24	24	12	12	28	11	18
6	3	7	2	3	1	2	3	1	1	0	3	2	5	3
7	5	4	3	11	12	15	2	4	0	7	9	2	0	4
8	11	11	6	11	26	13	5	15	5	7	7	22	13	10
9	11	12	5	15	15	18	15	27	18	15	16	26	9	19

Key 1: Legislators, senior officials and managers; 2: Professionals; 3. Technicians and associate professionals; 4 Clerks; 5 Service employees and shop and market sales employees; 6 Skill agricultural and fishery employees; 7 Craft and related employees; 8 Plant and machine operators and assemblers and, 9 Elementary job employees.

Notes: Pearson: Uncorrected chi2 (104) = 1263.8179, Design-based F (72.37, 4.0e+05) = 4.1454, P = 0.0000. Strata with single sampling unit centred at overall mean and 14 strata omitted because they contain no population members.
Source: own computations from UKHLS wave 1 data (2009-10

Figure2 5 log wage of country of origin groups by gender (weighted)

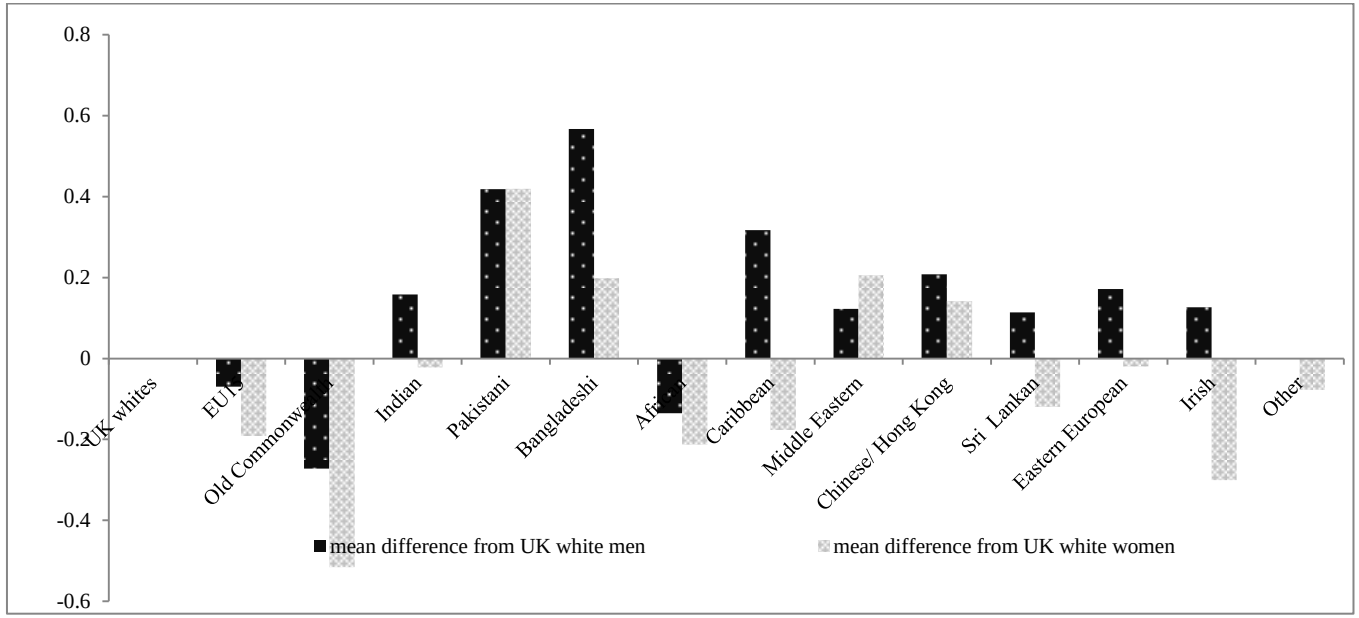


			UK whites	EU15	Old Commonwealth	Indian	Pakistani	Bangladeshi	African	Caribbean	Middle Eastern	Chinese/ Hong Kong	Sri Lankan	Eastern European	Irish	Other
Men	0		7.4751	7.5449	7.7473	7.3172	7.0574	6.9082	7.6106	7.158	7.3526	7.2673	7.3616	7.3036	7.349	7.4068
Women	0		6.9434	7.1354	7.4592	6.9661	6.5244	6.7454	7.1567	7.1203	6.7379	6.8021	7.0628	6.9637	7.2445	7.0216

Source: Own computations from UKHLS wave 1 data (2009-10)

Considering now Figure2 5, it is clear that across country of origin groups, the log wage topography is grossly uneven across gender and country of origin groups. Log wage higher values peak at >=7.54 – these figures are associated with Old Commonwealth (both men and women); EU15 (men only) and African (men only). Pakistani, Bangladeshi (both men and women) and Middle Eastern (women only) show comparably lower log wage (ranging between 1.9 1 and 2.15) compared to all gender-country of origin groups. It is also important to note that Irish and Pakistani women have slightly higher log wage compared to men's wages within their particular country of origin groups. Next, Figure 2 6 explores how log wage mean differences of all immigrant country of origin groups compare to that of UK born White men and women.

Figure2 6 comparisons of Immigrant Country of origin groups' log wage means to the UK White's in the UK labour market (weighted)



Note: negative mean variance implies that group's log wage mean is greater than that of the UK white's and the opposite is true.

Source: UKHLS wave 1 data.

Looking at Figure 2 6, it is clear that EU15, Old Commonwealth and African men groups are paid more than UK white men on average. Across women groups, EU15, Old Commonwealth, Caribbean, African, Sri Lankan, Eastern European, Irish and other women are on average paid higher log monthly wages than UK white women, and the remaining groups are, on average, earning less than UK White.

On what regards the more technical aspects of analysing pay asymmetry across country of origin groups, log wage mean differences were analysed using a Bonefferoni Stata statistical command called Conover-Iman test (onovertest) (Ronald & Conover, 1979)—it allows the researcher to test for stochastic dominance among multiple pairwise comparison groups following rejection of a Kruskal-Wallis test for stochastic dominance among k groups (Kruskal and Wallis, 1952). Additionally, the conovertest, like the Scheffe test, allows multiple groups pairwise comparison means test to be computed and the conovertest results for women and men country of origin groups. In fact, the conovertest determines whether pairwise country of origin groups' log wage mean difference is statistically significant or not (Pevalin & Robson, 2009). Table 2 1 statistical results next, show row mean – column mean log wage differences for men and women immigrant groups in the analytic sample. Figure 2 6 confirms that not all log wage mean differences between pairs of country of origin groups are significant for both men and women in the UK labour market (p-value 0.05). The statistics shown in Table 2 1 (below) provide evidence to reject the null hypothesis of stochastic equality across men and women immigrant groups (note that only significant pairwise differences are presented here[48]). Looking at Table2 1 each asterisk entry shows significant statistical differences in the average log wages between the two groups indicated. The Figure2 6 focus on pairwise comparisons of men's and women's mean log wage based on the conovertest (already explained in the preceding passages). The null hypothesis of stochastic equality of log wage across men and women country of origin groups is statistically rejected on the basis of nonparametric t tests as indicated in Table2 1. A positive mean difference implies that the country of origin group in the given row is on average getting a higher log wage over the country of origin group in the corresponding column. Looking at Table2 1 UK White women's log wage is comparably lower compared to that of Old Commonwealth women's, hence the negative sign. Moreover, a positive difference means a country of origin group in the given column has higher log wage compared to the corresponding row group; this is the case with the UK white women versus Indian women. With regards to men groups, pay asymmetry between UK white men and Indian, Pakistani and Bangladeshi are conspicuously magnified positive variances, same as between EU15 and Eastern European men and between the latter and Old Commonwealth men.

[48] Insignificant pairwise differences are not reported.

Table2 1: Pairwise Comparison of Country of Origin Groups' Log Wage Means (Weighted).

Men country of origin groups

Row mean-Col mean	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2	+	0	-	-	-	-	-	-	-	-	-	-	-	-
3	+	+	0	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	0	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	0	-	-	-	-	-	-	-	-	-
	.42***	.49***	.63***											
6	-	-	-	-	-	0	-	-	-	-	-	-	-	-
	.67***	.73***	.86***	.50***										
7	+	-	-	+	+.53**	+.77***	0	-	-	-	-	-	-	-
				.27**	*									
8	-	-	-	-	+	+	-	0	-	-	-	-	-	-
9	-	-	-	-	-	-	-	+	0	-	-	-	-	-
10	-	-	-	-	-	-	-	+	-	0	-	-	-	-
11	-	-	-	-	-	-	-	+	-	+	0	-	-	-
12	-	-	-	-	-	-	-	+	-	-	-	0	-	-
13	-	+	-	+	-4.11*	5.39*	-	+	+	+	+	+	0	-
14	-	-	-	+	+	+	-	+	+	+	+	+	-	0

Key: Country of origin groups :1 UK–born White; 2 EU15; 3 Old Commonwealth immigrants (mainly English Speaking white immigrants from Australia, America, New Zealand and Canada) 4 Indian; 5 Pakistanis; 6 Bangladeshis; 7 African; 8 Caribbean; 9 Middle Eastern; 10 Chinese; 11 Sri Lankans; 12 Eastern European ; 13 Irish; and 14 Other

- Or + imply negative and positive differences that are not statistically significant at $p < 0.05$.

* $p<0.05$ ** $p<0.01$ ** * $p<0.001$.

Bartlett's test for equal variances (for men): chi2 (13) = 283.4190 Prob>chi2 = 0.000

Table2 1 continued for women origin groups

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2	+	0	-	-	-	-	-	-	-	-	-	-	-	-
3	+3.9**	+	0	-	-	-	-	-	-	-	-	-	-	-
4	+	-	-	0	-	-	-	-	-	-	-	-	-	-
5	-	-	-.60**	-	0	-	-	-	-	-	-	-	-	-
6	-	-	-.57**	-	+	0	-	-	-	-	-	-	-	-
7	+	-	-	+	+	+	0	-	-	-	-	-	-	-
8	+	-	-	+	+	+	-	0	-	-	-	-	-	-
9	-	-	-	-	+	+	-	-	0	-	-	-	-	-
10	-	-	-	+	+	+	-	-	+	0	-	-	-	-
11	-	-	-	+	+	+	-	-	+	+	0	-	-	-
12	-	-	-	-	+	+	-	-	+	-	-	0	-	-
13	+	+	-	+	*	+	-	+	+	-	-	+	0	-
14	-	-	-	+	+	+	-	-	+	-	-	+	-	0

key : * p<0.05 ** p<0.01 ** * p<0.001

Notes- Women groups: Bartlett's test for equal variances: chi2 (13) = 283.42 Prob>chi2 = 0.000

Source: Own computation based on UKHLS Wave 1 (2009/2010)

The preceding descriptive statistics are interesting for a number of reasons. The raw statistics presented so far suggest that pay asymmetry related with country of origin groups by gender is conspicuous, but not distributed uniformly across country of origin groups and gender. Through regression analyses, I determine to what extent pay asymmetry depends on some sociodemographic individual factors such as respondents' education years, the number of children and age. Of interest in Table 2 2, is the evidence that UK white men have comparably lower education years on average compared to all men country of origin groups (except Caribbean men). A similar trend in educational attainment is also envisaged for the native UK white women—showing lowest mean education years relative to all immigrant groups. As already evidenced in the preceding Figure 2 5 and reiterated in Table 2 1, both UK men and women are on average earning more than many country of origin groups (except for EU15, Old Commonwealth, African, Chinese and Irish groups). While the numbers of women with higher educational attainment shouldn't be neglected Table 2 2 in terms of earnings, many women groups are not on an equal footing with many men origin groups. Relative to UK White (both men and women), positive pay asymmetry differences are evidenced across Middle Eastern and Bangladesh (women groups only), Sri Lankan (men), Indian, Pakistani, Eastern European and Caribbean groups (both men and women groups). The overall picture shown in the preceding descriptive statistics is that none of the country of origin groups' (women and men) earnings is equal in terms of log wage in the UK labour market.

Table2 2: Summary Statistics Mean Socio-Economic Variables of Country of Origin Men and Women Groups (Weighted)

	Weighted Count	Education years		Age years		Weighted count	education years		Age years	
country of origin	n	Mean	Std err	Mean	Std err	n	Mean	Std err	Mean	Std err
UK white	9644	5.34	.076	40.8	.16	10400	5.45	.074	40.52	.14
EU15	178	7.12	.603	36.04	1.00	153	7.15	.557	35.87	1.04
Old Commonwealth	90	7.84	.941	36.20	1.42	114	9.47	.604	38.83	1.09
Indian	200	7.44	.365	36.19	.85	113	7.28	.370	38.66	.86
Pakistani	86	7.75	.525	36.69	.87	23	6.78	.739	35.99	1.18
Bangladeshi	43	6.82	.564	34.15	.92	12	5.72	.610	34.50	1.91
African	177	8.40	.412	39.18	.80	124	7.89	.400	39.11	.83
Caribbean	18	3.85	.952	46.99	2.24	26	8.17	.969	48.20	1.26
Middle Eastern	22	6.07	1.01	37.45	2.20	6	9.47	3.02	30.69	2.17
Chinese	29	8.78	1.39	37.61	2.07	21	5.61	.862	39.04	1.93
Sri Lankan	37	6.55	.745	38.69	.99	23	7.30	1.02	40.48	1.57

Eastern	125	6.49	.502	31.06	.72	124	8.04	.431	31.82	.90
European										
Irish	57	6.83	1.012	43.97	3.12	83	6.10	.730	45.52	1.33
N	10712					11260				

Source: Own computations using UKHLS Wave 1 data (2009-2010)

Table2 3 Mean Education Years Attainment Differences of Immigrant Country of Origin Groups versus UK Born White by Gender (Weighted)

Country of origin groups	Men				Women			
	contrast	Std. Error	t.	p>t	contrast	Std. Error	t	p>t
EU 15	-.78	.12	-6.74	0.000	-.54	.13	-4.03	0.000
Old Commonwealth	-.83	.13	-6.38	0.000	-1.19	.08	-13.07	0.000
Indian	-.78	.12	-6.74	0.000	-.020	.08	-0.24	0.807
Pakistani	-.17	.09	-1.99	0.046	.22	.08	2.89	0.004
Bangladeshi	-.29	.07	-4.06	0.000	.19	.10	1.95	0.051
African	-1.01	.07	-14.77	0.000	-.75	.10	-7.59	0.000
Caribbean	.07	.12	0.57	0.568	.04	.08	0.48	0.633
Middle Eastern	-.18	.27	0.64	0.520	.21	.31	0.69	0.489
Chinese/Hong Kong	-1.13	.17	-6.79	0.000	-1.21	.16	-7.68	0.000
Sri Lankan	-1.23	.13	-9.17	0.000	-1.29	.13	-9.87	0.000
Eastern European	-1.37	.15	-8.85	0.000	-1.72	.13	-13.38	0.000
Irish	.20	.15	1.31	0.191	-.12	.14	-0.91	0.362
0ther	-.87	.07	-12.84	0.000	-.83	.05	-16.55	0.000
Old immigrants	-.33	.05	-7.16	0.000	-.21	.05	-4.22	0.000
New Immigrants	-.91	.05	-19.45	0.000	-.94	.04	-25.10	0.000

Notes: Mean Education Years Differences are Statistically Significant if $p < 0.05$ or $t = 1.96$. A statistically significant negative contrast implies that the immigrant group has comparably more education years than the UK White group and the opposite is true.

Source: Own computation based on UKHLS wave 1 (2009 -2010)

Looking at Table 2 3 it is clear that many immigrant groups have on average more education years compared to the UK White (both men and women). These descriptive stats are in line with past empirical research on overeducation (Altorjai, 2013; J. Lindley & Lenton, 2006; Sloane et al., 1999).

5 Empirical Results

The foregoing descriptive statistics have already established that men and women experience wide varieties of occupational and pay assymmetries in the UK labour market and these results are in line with (Anthony Heath & Sin Yi Cheung, 2006)'s findings. Of interest here is also whether such asymmetries persist across country of origin groups after controlling for socio-economic and demographic differences attributed to each country of origin group's observable characteristics. Therefore, I now determine to what extent pay asymmetry varies across occupations and country of origin groups by gender after controlling for socio-demographic factors, including: repondent's age, education years, marital status, number of children in household, industry, source of qualification and whether respondents speak English laguage from birth or not. Following Berthoud (2000)'s layering approach –in my case

plugging variables of interest in turn and noting the variation in the dependent variable, i.e., observing model changes in R^2 for men and *Rho* changes for women respectively (see Table2 4). A total of six weighted regression models (i.e., three OLS and three Heckman selection models) were estimated and the key results of these models are presented using Table 2 4.

The regression results presented in Table 2 4 demonstrate the hierarchical nature of pay asymmetry within and across occupations and origin country groups. Across both men and women models represented in Table 2 4, concentrating on statistically significant coefficients for occupations and country of origin groups (men and women), it seems reasonable to assume that, pay assymmetry is not only pronounced within and across occupations, but, also noticeable within and across country of origin groups by gender. In sum, for each model, a statistically significant negative sign coefficient implies a higher pay asymmetry in favour of the base group.

On average, for the 'all men' model, it is clear that those in elementary/routine jobs earn approximately 65% less compared to corporate managers, i.e., the base group (*ceteris paribus*). Considering immigrants separately, the pay figure for 'professionals is 46% more compared to corporate managers for all 'new immigrants' men (*ceteris paribus*). This result is not surprising as many new immigrants men and women are highly skilled and came to the UK through immigration schemes/ acts (for an example Immigration and National Act 2006) motivated by labour market shortages in specific sectors such as hospitality, food processing, National Health Service and the increasing quest for highly qualified personnel in the skill intensive sectors of the UK economy (Casciani, 2002; Demireva, 2011). Outside the UK, this finding is in line with Hansen and Lofstrom (2001)'s findings pinpointing that highly skilled immigrants suffer little wage disdvantage.

Across men/country of origin groups it is visible that EU15 immigrants (men/women) receive higher wages relative to the UK born White (men/women) and the Eastern European men (*ceteris paribus*). However, across the models, the picture differs for the Indian, Parkistani, Bangladeshi, Sri lankan (men) and 'Other' groups, appearing to be more disadvantaged compared to the reference group (*ceteris paribus*). Considering women separately, Sri Lankan, Irish and EU15 women seem to be earning more than the UK white women on average (*ceteris paribus*). On the

contrary , Eastern European women seem to be more disadvantaged in terms of pay (*ceteris paribus*).

For the remaining orgin country groups the results are statistically indifferent from the reference group. This may suggest that the women from those country of origin groups may be finding ways leading to better socio-economic integration (*ceteris paribus*).

On what concerns old immigrants (men), it is evident that the indian, Pakistani, Bangladeshi , African, Carribbean, Sri Lankan and Eastern European groups are more disadvantaged compared to EU 15 men in terms of earnings (*ceteris paribus*). Regarding old immigrant (women) it is only the Indian group that appears to be deprived when considering their pay relative to the reference group (*ceteris paribus*).

Concerning new immigrants (men), the groups that show a sign of being diasdvantaged are the Bangladeshi, Pakistani and Middle East, while women from India, Bangladeshi, Eastern European and other countries are also in the same unfavourable position (*ceteris paribus*). Based on the random effects variances, pay asymmetry varies more across old immigrants men that it does across new cohorts of men (44%).

Table2 4: Results from Regressions where Dependent Variable is Log Wage (Weighted)

Variables	MEGLM All men	Heckman with Selection equation All women	MEGLM Method Old immigrants (Men)	Heckman with Selection equation Old immigrants (women)	MEGLM Method New immigrants Men	Heckman with Selection equation New immigrants women
Occupation Effects						
Legislative and Management	Ref	Ref	Ref	Ref	Ref	Ref
	(.)	(.)	(.)	(.)	(.)	(.)
Professionals	-0.10***	0.11***	-0.20	0.03	0.46***	0.03
	(0.03)	(0.02)	(0.24)	(0.11)	(0.14)	(0.07)
"Technical & Associate Professionals"	-0.26***	-0.12***	-0.80***	-0.22**	0.15	-0.09
	(0.04)	(0.02)	(0.20)	(0.10)	(0.24)	(0.07)
"Clerks"	-0.48***	-0.37***	-0.89***	-0.44***	-0.13	-0.51***
	(0.04)	(0.02)	(0.20)	(0.11)	(0.32)	(0.08)
"Service and Sales"	-0.44***	-0.68***	-1.37***	-0.46***	-0.06	-0.66***
	(0.05)	(0.04)	(0.30)	(0.15)	(0.26)	(0.11)
"Agriculture and Fishery"	-0.49***	-0.56***	-1.48***	-0.64***	-0.36*	-0.67***
	(0.06)	(0.02)	(0.28)	(0.11)	(0.19)	(0.07)
"Craft"	-0.55***	-0.63***	-0.34	-0.70***	-0.58**	-0.72***
	(0.05)	(0.02)	(0.28)	(0.13)	(0.25)	(0.12)
"Plant and Machine"	-0.55***	-0.54***	-1.12***	-0.62***	-0.40**	-0.67***
	(0.05)	(0.03)	(0.22)	(0.15)	(0.17)	(0.10)

Elementary/Routine"	-0.65***	-0.73***	-1.22***	-0.69***	-0.71***	-0.77***
	(0.05)	(0.02)	(0.21)	(0.12)	(0.17)	(0.08)
Country of Origin Effects	"UK born	White =ref"				
"EU15"	0.12	0.11**	ref	ref	ref	ref
	(0.09)	(0.04)	(.)	(.)	(.)	(.)
"Old Commonwealth"	0.06	0.08	0.32	0.09	0.08	-0.08
	(0.09)	(0.06)	(0.33)	(0.11)	(0.25)	(0.11)
"Indian"	0.03	-0.04	-0.67**	-0.20**	-0.22	-0.18**
	(0.08)	(0.04)	(0.30)	(0.10)	(0.17)	(0.08)
"Pakistani"	-0.22***	-0.03	-0.84*	-0.18	-0.31**	-0.09
	(0.06)	(0.14)	(0.46)	(0.21)	(0.15)	(0.11)
"Bangladesh"	-0.21*	0.05	-1.29***	0.00	-0.55***	-0.19*
	(0.12)	(0.12)	(0.42)	(0.19)	(0.16)	(0.10)
"African"	-0.05	0.07	-0.92**	-0.06	-0.05	-0.03
	(0.05)	(0.05)	(0.39)	(0.08)	(0.17)	(0.10)
"Caribbean"	-0.00	0.04	-0.91*	0.07	-0.07	-0.16
	(0.15)	(0.04)	(0.54)	(0.08)	(0.22)	(0.11)
"Middle East"	-0.05	0.13	0.10	0.24**	-0.47*	-0.13
	(0.19)	(0.18)	(0.31)	(0.11)	(0.26)	(0.47)
"Chinese"	0.07	0.01	0.04	0.00	-0.22	-0.26**
	(0.10)	(0.08)	(0.42)	(0.12)	(0.22)	(0.11)
"Sri Lankan"	-0.05	0.12*	-0.57*	0.23*	-0.53***	-0.01
	(0.06)	(0.07)	(0.34)	(0.14)	(0.18)	(0.11)
" Eastern European "	0.13*	-0.10*	-1.00**	0.02	0.07	-0.20**
	(0.08)	(0.05)	(0.39)	(0.17)	(0.18)	(0.08)
"Irish"	0.08	0.11**	-0.99*	0.11	-0.28	-0.06
	(0.09)	(0.04)	(0.51)	(0.08)	(0.26)	(0.10)
"Other"	0.01	0.02	-0.95***	0.09	-0.10	-0.19***
	(0.05)	(0.03)	(0.30)	(0.07)	(0.15)	(0.07)
Constant	2.77***	-3.44**	7.55***	3.39***	6.90***	4.85***
	(0.83)	(1.41)	(0.94)	(0.40)	(0.64)	(0.56)
Random Effects						
Variance (intercept)	0.18***	-	0.63***	-	0.44***	-
	(0.04)	-	(0.09)	-	(0.08)	-
Variance (residuals)	0.12***	-	0.00**	-	0.07***	-
	(0.03)	-	(0.00)	-	(0.01)	-
F statistics	76.28***	509.88***	42.40***	53.52***	16.34***	39.33***
Rho	-	-0.59***	-	-0.74***	-	-0.77**
Survey design information						
Strata	1	1733	1	561	1	750
Primary Sampling Units	6902	6753	7500	3791	7501	4447
N	30354	36034	46067	16614	45947	20893.00
Population size	36680	36579	56584	15109	56101	19622
Design difference	6901	5020	7499	3230	7500	3697
Subpopulation Size	4042	12732	620	742	1385	1218
N (subpopulation)	5619	12086	1436	502	3119	907

Key: Standard errors in brackets, * p<0.05 ** p<0.01 ** * p<0.001 Notes: Rho in heckman models for women designates correlation coefficient occurring between unobservables and observables. Strata with single sampling unit are centred at overall mean and only outcome equation results are shown for women

Source: Own computation UKHLS 2009-10.

6. DISCUSSION AND FINAL REMARKS

In this paper, I have analysed pay asymmetry by occupation and country of origin of men and women as well as by old and new immigrants in the UK labour market using UKHLS wave1 data (2009-10). Based on Table 2 4, it is important to keep in mind that, on average, the immigrants show higher levels of education compared to the native UK white born men and women. However, for many immigrants, these

higher qualifications do not translate into higher material gains from their formal occupation/employment. On the other hand, this predicament does not apply to some immigrants, in particular those from the EU 15 countries. One hypothesis that might help explaining this apparently more successful integration in the UK labour market may be associated with their more specialised educational background (for example, on Science and Technology, Mathematics and Engineering) .

An important hypothesis discussed here underpins the point of departure from which the other countries of origin groups' educational qualifications are originated; the evidence seems to suggest that these qualifications are not compensated favourably in the UK labour market. Some authors argue that the education and skills obtained prior to migration are not favourably valued in terms of labour market placement (occupation and pay) (Dustmann et al., 2003).

The figures presented show evidence of over-subscription in intermediate, semi-routine, routine/ manual/ deskilling occupations with limited social mobility prospects and in, many cases, long working hours which restricts immigrants' networking activities, the possibility of acquiring UK-specific qualifications and other involvement in skill–enhancing programs. In the literature (few examples in the UK and beyond include: Evans & Kelley, 1991; Jowell & Prescott-Clarke, 1970; Lang, 2000), many have argued that these circumstances are more prevalent among non-white immigrants, which tend to find solace in the procurement of material well-being back home (Douglas et al., 1993; Eversole, 2008).

In sum, the factors influencing pay asymmetries are not purely based on human capital characteristics. Previous studies associated job entry discrimination, rather than discrimination within jobs as the major source of pay asymmetry affecting immigrant /ethnic groups (Longhi, Chet, & Platt, 2010). As shown in the preceding discussions, some groups seem to be systematically disadvantaged in terms of accessing 'white collar'/ high earning jobs.

7. REFERENCES

Altorjai, S. (2013). *Overqualification of immigrants in the UK*. (No. 2013-11). ISER Working Papers, University of Essex, Institute for Social and Economic Research.

Amott, T. L., & Matthaei, J. A. (1996). *Race, gender, and work: A multi-cultural economic history of women in the United States*: South End Press.

Battu, H., & Sloane, P. (2004). Over-education and ethnic Minorities in Britain. *The Manchester School, 72, 535-559*(4).

Berthoud, R. (2000). Ethnic Employment penalties in Britain. *Journal of ethnic and migration studies, 26*(3), 389-416.

Bird, K., Saalfeld, T., & Wust, A. M. (Eds.). (2011). *The Political Representatin of Immigrants and Ethnic Minorities*: Routledge.

Blackaby, D. H., Drinkwater, S., Leslie, D. G., & Murphy, P. D. (1997). "A picture of Male and Female Unemployment Among Britain's Ethnic Minorities". *Scottish Journal of Political Economy, 97*(3), 581-605.

Blau, F. D., & Kahn, L. M. (2000). Gender differences in pay: National Bureau of Economic Research.

Boydell, J., Van Os, J., McKenzie, K., Allardyce, J., Goel, R., McCreadie, R., & Murray, R. (2001). Incidence of schizophrenia in ethnic minorities in London: ecological study into interactions with environment. *Bmj, 323*(7325), 1336.

Brinbaum, Y., & Cellabolla-Boado, H. (2007). The school Careers of ethnic Minorities in Farance: Success or Dillusion? *Ethnicities, 7*(3), 445-474.

Brynin, M., & Guveli, A. (2011). Understanding the Ethnicity Pay Gap in Britain (pp. 1-16). Colchester: University of Essex.

Casciani, D. (2002, 21 November 2011). Immigration: Fact or hype?

, BBC News. *BBC News Online Community Affairs*.

Chantala, K., Blanchette, D., & Suchindran, C. (2011). Software to compute sampling weights for multilevel analysis. *Carolina Population Center, UNC at Chapel Hill, Last Update*.

Charles, M. (2011). A World of Difference: International Trends in Women's Economic Status. *Annual Review of Sociology, 37*, 355-371. doi: 10.2307/41288612

Clark, K., & Lindley, J. (2009). Immigrant Assimilation Pre and Post Labour Market Entry: Evidence from the UK Labour Force Survey. *Journal of Population Economics, 22*(1), 175-198. doi: 10.2307/40344725

Demireva, N. (2011). New migrants in the UK: employment patterns and occupational attainment. *Journal of ethnic and migration studies, 37*(4), 637-655.

Dickens, & McKnight, A. (2008). Assimilation of migrants into the British labour market. *LSE STICERD Research Paper No. CASE133*.

Douglas, M., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A., & Taylor, E. (1993). Theories of international migration: a review and appraisal. *Population and Development Review*, 431-466.

Dustmann, C., Fabbri, F., Preston, I., & Wadsworth, J. (2003). Labour Market Performance of Immigrants in the UK labour Market. In H. Office (Ed.). London: Home Office.

Eagly, A. H. (2013). *Sex differences in social behavior: A social-role interpretation*: Psychology Press.

England, P., & Browne, I. (1992). Trends in Women's Economic Status. *Sociological Perspectives, 35*(1), 17-51. doi: 10.2307/1389367

Evans, M., & Kelley, J. (1991). Prejudice, Discrimination, and the Labor Market: Attainments of Immigrants in Australia. *American Journal of sociology, 97*(3), 721-759. doi: 10.2307/2781782

Eversole, R. (2008). Development in Motion: What to Think about Migration? *Development in Practice, 18*(1), 94-99. doi: 10.2307/27751878

Fitzmaurice, G. M., & Laird, N. M. (1995). Regression models for a bivariate discrete and continuous outcome with clustering. *Journal of the American Statistical Association, 90*(431), 845-852.

Gelman, A., & Hill, J. (2009). *Data Analysis Using Regression and Multilevel / Hierarchical Models.* . Cambridge, New York, Melbourne, Cape Town, Singapore , Sao Paulo, Delhi: Cambridge University Press.

Gneezy, U., Niederle, M., & Rustichini, A. (2003). Performance in competitive environments: Gender differences. *QUARTERLY JOURNAL OF ECONOMICS-CAMBRIDGE MASSACHUSETTS-, 118*(3), 1049-1074.

Gow, L., & Middlemiss, S. (2011). Equal pay legislation and its impact on the gender pay gap. *International Journal of Discrimination and the Law, 11*(4), 164-186.

Guierrez, R. (2008). *Tricks of the trade: getting the most out of xtmixed.* Paper presented at the UK Stata Users Group Meetings.

Hansen, J., & Lofstrom, M. (2001). The dynamics of immigrant welfare and labor market behavior.

Heath, A., & Cheung, S. Y. (2006). *Ethnic penalties in the labour market: Employers and discrimination*: CDS.

Heath, A., & Cheung, S. Y. (Eds.). (2007). *Unequal Chances, Ethnic Minorities in Western Labour Markets*. New York: Oxford University Press.

Heckman, J. J. (1979). Sample selection bias as a specification error. *Econometrica: Journal of the Econometric Society*, 153-161.

Heckman, J. J., & Honore, B. E. (1990). The empirical content of the Roy model. *Econometrica: Journal of the Econometric Society*, 1121-1149.

Heckman, J. J., & Sedlacek, G. (1985). Heterogeneity, aggregation, and market wage functions: an empirical model of self-selection in the labor market. *The Journal of Political Economy*, 1077-1125.

Hox, J. (2010). *Multilevel analysis: Techniques and applications*: Routledge.

Jones, T. (1993). Britain's ethnic minorities An analysis of the Labour Force Survey.

Jowell, R., & Prescott-Clarke, P. (1970). Racial Discrimination in the British Labour Market. *Industrial and Labor Relations Review, 314*, 265-272.

Kilbourne, B., England, P., & Beron, K. (1994). Effects of individual, occupational, and industrial characteristics on earnings: Intersections of race and gender. *SOCIAL fORCES, 72*(4), 1149-1176.

Knies, G. (Ed.). (2014). *Understanding Society –UK Household Longitudinal Study: Wave 1-4, 2009-2013, User Manual.* Colchester University of Essex.

Kofman, E., & Raghuram, P. (2006). Gender and global labour migrations: incorporating skilled workers. *Antipode, 38*(2), 282-303.

Krueter, F., & Varliant.R. (2007). A Survey on Survey Statistics : What is done and can be done in Stata. *The Stata Journal, 7*, 1-21.

Kulow, M. D. (2013). BEYOND THE PAYCHECK FAIRNESS ACT: MANDATORY WAGE DISCLOSURE LAWS--A NECESSARY TOOL FOR CLOSING THE RESIDUAL GENDER WAGE GAP. *Harvard Journal on Legislation, 50*(2).

Lang, G. (2000). Native-Immigrant Wage Differentials in Germany. *Assimilation, Discrimination, or Human Capital*.

Layard, R., Barton, M., & Zabalza, A. (1980). Married Women's Participation and Hours. *Economica, 47*(185), 51-72. doi: 10.2307/2553167

Leong, F. (1996). *Career development and vocational behavior of racial and ethnic minorities*: Lawrence Erlbaum.

Leslie, D., Drinkwater, S., & O'Leary, N. (1998). Unemployment and earnings among Britain's ethnic minorities: some signs for optimism. *Journal of ethnic and migration studies, 24*(3), 489-506.

Lindley, J., & Lenton, P. (2006). The Overeducation of UK Immigrants: Evidence from the UK Labour Force Survey. In U. o. Sheffield (Ed.), *Department of Economics* (Vol. 2006001). Sheffield: Department of Economics University of Sheffield.

Lips, H. M. (2013). The gender pay gap: Challenging the rationalizations. Perceived equity, discrimination, and the limits of human capital models. *Sex Roles, 68*(3-4), 169-185.

Longhi, S., Chet, N., & Platt, L. (2010). Ethnicity and Pay Gaps. Colchester: University of Essex.

Lynn, P. (2009). [Sample design for Understanding Society. Understanding Society Working Paper series. Understanding-society/2009-01].

Lynn, P. (2011). Mantainining Cross-Sectional Representativeness in a Longitudinal General Population Survey (Understanding Society Working paper Series). Retrieved 05/10/2015, from Institute of Social Research and Economics, University of Essex

MacKinnon, J. G., & Magee, L. (1990). Transforming the dependent variable in regression models. *International Economic Review*, 315-339.

McKay, A., Campbell, J., Thomson, E., & Ross, S. (2013). Economic Recession and Recovery in the UK: What's Gender Got to do with it? *Feminist Economics, 19*(3), 108-123.

Modood, T., Berthoud, R., & Lakey, J. (1997). Ethnic minorities in Britain Diversity and disadvantage.

Modood, T., Berthoud, R., Lakey, J., Virdiee, S., & Beishon, S. (2000a). Ethnic Minorities in Britain: Diversity and disadvantage. London: Policy Study Institute.

Modood, T., Berthoud, R., Lakey, J., Virdiee, S., & Beishon, S. (2000b). *Ethnic Minorities in Britain: Diversity and Disadvantage*. London: Policy Studies Institute.

Okazaki, S., & Sue, S. (1998). Methodological issues in assessment research with ethnic minorities. *Readings in ethnic psychology*, 26-40.

Pevalin, D., & Robson, K. (2009). The Stata survival Manual. England: The Mcgrow. Hill companies.

Rabe-Hesketh, S., & Skrondal, A. (2012). *Multilevel and longitudinal modelling using Stata*: STATA press.

Ronald, I., & Conover, W. (1979). The use of the rank transform in regression. *Technometrics, 21*(4), 499-509.

Shields, M. A., & Price, S. W. (2002). The English Language Fluency and Occupational Success of Ethnic Minority Immigrant Men Living in English Metropolitan Areas. *Journal of Population Economics, 15*(1), 137-160. doi: 10.2307/20007803

Sloane, P., Battu, H., & Seaman, P. T. (1999). Overeducation, Undereducation and the British Labour Market. *Applied economics, 31*, 1437-1453.

Steenbergen, M. R., & Jones, B. S. (2002). Modeling multilevel data structures. *American Journal of Political Science*, 218-237.

Sturgis, P., Brunton-Smith, I., Read, S., & Allum, N. (2011). Does ethnic diversity erode trust? Putnam's 'hunkering down'thesis reconsidered. *British Journal of Political Science, 41*(01), 57-82.

Toma, S., & Vause, S. (2010). *Gender differences in the role of migrant networks in Congolese and Senegalese international migration.* Paper presented at the Communication présentée lors de l'African Migration Workshop, The contribution of african research to migration theory, Dakar.

Treiman, D. J., & Hartmann, H. I. (1981). *Women, work, and wages: Equal pay for jobs of equal value*: National Academies Press.

Tsang, M. C., & Levin, H. M. (1985). The economics of overeducation. *Economics of Education Review, 4*(2), 93-104.

West, B. T., Bergland, P., & Heeringa, G. S. (2008). A closer examination of subpopulation analysis of complex survey data. *Stata Journal, 8*(4), 520-531.

West, B. T., Berglund , P., & Heeringa, S., G. (2008). A closer examination of subpopulation analysis of complex-sample survey data. *Stata J, 8*(4), 520-531.

Wooldridge, J. (2003). Introductory Econometrics: A Modern Approach. New York: John Wiley and Sons, LTD.

Yeandle, S., Stiell, B., & Buckner, L. (2006). Ethnic minority women and access to the labour market. *Synthesis report GELLM series, 4*.

8.5 Sample questions on key variables analysed: UKHLS sample questionnaire self-completion questions sample (UKHLS, 2014)

In which UK **County** were you born?

If [UKBORN < 5] *Born in the UK*

If [PLBORNUK = 997] *Born in other county*

QFHIGH. ***Highest Qualification***

Source BHPS/LFS

Text

Can you tell me the **highest** educational or school qualification you have obtained?

Interviewer Instruction

PRIORITY FROM 1 = HIGHEST TO 15 = LOWEST

CODE ONE ONLY

F9 FOR HELP

Showcard TBC

Options

1 University Higher Degree (e.g. MSc, PhD)

2 First degree level qualification including foundation degrees, graduate membership

of a professional Institute, PGCE

3 Diploma in higher education

4 Teaching qualification (excluding PGCE)

5 Nursing or other medical qualification not yet mentioned

6 A Level

7 Welsh Baccalaureates

8 International Baccalaureates

9 AS Level

10 Higher Grade/Advanced Higher (Scotland)

11 Certificate of sixth year studies

12 GCSE/O Level

13 CSE

MAIN01. UKHLS - Main stage Wave 01

http://UKHLS.esgender.ac.uk/qsl/qsl.php?f=specifications/main/main01/main0.

41

SCHOOL. ***Never Went To/still At School***

How old were you when you left school?

Interviewer Instruction

DO NOT INCLUDE TECHNICAL COLLEGE

Options

1 Write in age

2 Never went to school

3 Still at school

FEEND. ***Further Education Leaving Age***

Source BHPS

Interviewer Instruction

WRITE IN AGE RESPONDENT LEFT COLLEGE/UNIVERSITY

Universe

if [SCHOOL = 1] *Left school*

if [FENOW = 1] *Left college or university*

ENGSPK. ***Difficulty Speaking Day To Day English***

Source UKHLS

Text

Do you have any difficulty speaking English to people for day to day activities such as shopping or taking the bus?

Options

1 Yes

2 No

Universe

If [EngLang = 2] *English is not first language*

How difficult do you find speaking English for day to day activities?

How difficult do you find reading formal letters or documents written in English?

Options

1 A little difficult

2 Fairly difficult

3 Very difficult

4 Cannot read English at all

OPRLG0NI. ***Religion Brought Up In: NI***

Source NISRA/CSU

Which religion were you brought up in?

Options

1 Catholic

2 Presbyterian

3 Church of Ireland

4 Methodist

5 Baptist
6 Free Presbyterian
7 Brethren
8 Protestant - not specified
9 Other Christian
10 Buddhist
11 Hindu
12 Jewish
13 Muslim
14 Sikh
96 No religion

9Congregational/United Reform/URC
10 Other Christian

SF1. ***General Health***
Source SF12
Text
In general, would you say your health is.
Interviewer Instruction
READ OUT
Options
1 Excellent
2 Very good
3 Good
4 Fair
5 Poor

SF3A. ***Health Limits Work***
Source SF12
Text
The following two questions ask you about your physical health and your daily activities.
During the **past 4 weeks**, how much of the time have you accomplished less than you would like **as a result of your physical health**?
Options
1 All of the time
2 Most of the time
3 Some of the time
4 A little of the time
5 None of the time

97 Any other religion

NIREL. ***Religion: NI***
Source Adapted from NI harmonised question
Text
What is your religion, even if you are not practising?

Which religion were you brought up in?
Options
11 Christian (no denomination specified)
12. Muslim/Islam
13 Hindu

MOVEAGE. ***Age Respondent Moved To UK***

Compute
Compute migrationhistory_w1.moveage = [age respondent moved to the UK]
Universe
if[(HHGRID.EMBoost = 1 HHGRID.GP Compare = 1 (HHGRID.LDA = 1 & (ETHNICITYANDNATIONALIDENTITY.RACEL > 4 & ETHNICITYANDNATIONALIDENTITY.RACEL < 98))] *EM boost or general population comparison sample or in low density EM area and any non-UK background*
if [INITIALCONDITIONS.UKBORN = 5] *Born outside the UK*

Number of Biological Children Ever Had/fathered
Source BHPS
Text
Can I just check how many biological children have you fathered/mothered?

1 No religion
2 Church of England/ Anglican
3 Roman Catholic
4 Church of Scotland
5 Free Church or Free Presbyterian Church of Scotland
6 Episcopalian
7 Methodist
Baptist

14 Jewish
15 Sikh
16 Buddhist
97 Other

PAPER 3: A LONGITUDINAL ANALYSIS OF OCCUPATIONAL TRANSITIONS AND WAGE TRAJECTORIES: DRAWING INSIGHTS FROM IMMIGRANT (OLD AND NEW) AND UK–BORN WHITE IN THE UK LABOUR MARKET

INTRODUCTION

Drive: Literature based on Labour Force Survey suggested that in the year 2000, of the 4.5 million people living in the UK, 9% were born overseas— "many of these individuals of foreign origin work and contribute to economic prosperity and wellbeing", i.e., page12, (Dustmann et al., 2003). My own work based on access (or lack of access) to the professional class and pay asymmetry, as well as the literature reviewed in the introductory chapter, indicate that the labour market performance of immigrants is far from being homogeneous. According to Dustmann et al. (2003, p. 10) it is important "[t]o understand how labour market performance of immigrants differs from UK –born, and from each other, how these differences relate to observed characteristics, and how they change over time is an important pre-requisite for migration policy." In this study, I use longitudinal data to analyse comparatively the occupational status transitions of old and new immigrants and earnings trajectories as follows.

Whilst differences in culture, demographic structure, education and skills of the foreign born individuals may have benefited few in certain labour market segments and penalised many in other sectors, scant studies have paid attention to the changing demographic, economic and policy environments, in particular facing 'old' and 'new' immigrants (Demireva, 2011). Dustmann et al. (2003, p. 68) recommend that "[m]ore and better data, which allows to link language ability to outcomes, would be helpful to quantify more precisely the degree to which disadvantages of some groups relate to language." This paper responds to Dustmann et al. (2003)'s recommendation by using a more asymptotic dataset (UKHLS four sweeps) and clearly distinguishing the observable and non-observable characteristics in terms of culture, demographic structure, education and skills of the foreign born, which represents a different analytical approach compared to Dustmann et al. (2003)' s study and many others reviewed in the introductory chapter. Whilst labour market performance of immigrant populations have been subject of intensive research in the United States (US), Australia, Canada and also in some European countries, comparatively little is known about the relative and absolute occupational status and earning transitions of old and new immigrants in the UK labour market. This paper will attempt to contribute to fill some of these gaps.

Whilst statistical models for panel (repeated observations) data analyses of both men and women have rapidly gained momentum in the field of methodological inquiry amongst social and behavioural scientists (Andreß et al., 2013; Green., 1999; Kambourov & Manovskii, 2008, 2009; Myers & Cranford, 1998; Parrado, Caner, & Wolff, 2007; Pedace, 2000; Porter, 1968), their application to the study of socio-economic integration of immigrants in the UK remains scant and gender biased. To illustrate this assertion, I draw upon two classical examples from the literature, which investigate different aspects of the UK labour market concentrating on men immigrants only. Psacharopoulos (1977, p. 321), using individual data from the 1972 General Household Survey, on 6,873 male employees, (this researcher used a path model fitted on the following key variables: father's occupation, respondent's occupation, education, ability and earnings), concluded that "personal characteristics explain about one-third on the variance of earnings in the UK." Second, using the same dataset (1972 General Household Survey), Barry (1980, p. 81) with a larger sample size —i.e., 10,000 households comprised of men, white and non-white (age 25 to 64)—who were employees in their main occupations, had non-zero earnings, and worked at least one week in the 52 weeks before the interview, deduced that " the annual earnings of foreign born men are four per cent lower than that of native-born white men, when measured as a logarithmic difference". Strikingly none of the classical studies (and many contemporary studies already reviewed in the introductory chapter of the thesis) adjust for survey complexity design. Why is this case? One of the main reasons seems associated with the fact that manipulation of weighted panel studies of earnings using statistical software (especially Stata) is not user friendly. Given such difficulties, use of the most recent Stata suit commands based on XT, (for example *xttrans* and *xtreg*) are not possible. Instead, I use a balanced panel technique accessible with *xttrans* command (i.e., by specifying an 'if' condition qualifying a balanced panel) as well as using *xtregre2* instead of the conventional *xtreg.*

Additionally, the lack of similar studies using this methodology and data remains a huge lacunae – this is largely due to problems such as — (i) lack of suitable techniques to handle varying weights of responses across waves – in one particular study it was noted that few specialists have addressed what it means for weights to vary, as well as the associated problems with the implementation of varying weights (differ according to meaning) (Hardin 1997)—(a) population invariant, but attrition/ nonresponse is not and (b) sample remains whole, but, the underlying population changes, i.e., –both (a) and (b) are complicated issues to manipulate statistically, the

situation worsens when new members are added in the survey to offset attrition/nonresponse effects (a). Conversely, for practical and comprehensive guidance on how to deal with (a) in particular, see Cox (2002, pp. 86-102).

Concomitantly, studying earning transitions using an unbalanced panel exacerbates not only problems associated with one-off low and high pay episodes making it difficult to ascertain whether it is the same people stuck in low or high pay, but, also challenges posed by combinations of unit nonresponse attributes (mentioned in the data and methods section) (for an example see; Gelman & Hill, 2009, pp. 536-537). By using a weighted strict balanced panel data on earnings, this paper adjusts for such issues effectively, hence, the strict balanced model estimates are more informative and reflective on understanding transitions of groups in question—respondents in the base wave (one) who flow in and out of subsequent waves (2 to 4) are eliminated.

The remainder of the paper is structured as follows. The next section specifies the research focus, i.e., outlines the research hypothesis being tested. Section 3 offers an overview of survey design weighted descriptive statistics. Section 4 presents descriptive stats, followed by section 5 reporting survey design adjusted empirical results, and last but not least, section 6 includes the discussion of the findings and presents my final remarks.

2 ANALYSIS FOCUS: RESEARCH QUESTION AND HYPOTHESIS

I would like to emphasize that this paper uses a strict balanced panel of four sweeps of UKHLS, this data is used specifically to answer the research question *whether 'old' and 'new' immigrants' earnings/occupations have improved over time (T) relative to those of UK born White's in the UK labour market*. Before turning to the details of the modelling approach, I formulate here the null and alternative hypotheses that will be tested:

(i) Old and new immigrants' earnings/occupations have not improved over time relative to those of UK born White's in the UK labour market (H0).

(ii) Old and new immigrants' earnings/ occupations have improved over time T relative to those of UK born White' in the UK labour market (Ha),
(where T =four waves of UKHLS data).

Put differently, the research question and hypotheses have been advanced to structure and define what is being tested in this paper: whether immigrants'

earnings/occupations have improved or improving relative to those of the UK born White. The literature reviewed in the introductory chapter intersect on a common view that, upon arrival, many immigrants experience labour market penalties, an observation which my results, based on access (or lack of access) to the professional class and pay asymmetry, have confirmed. Now, my focus and approach will concentrate on the comparative study of old and new immigrants' occupations/ earnings relative to UK born White over four sweeps of the UKHLS data (panel study), which imply that I am now primarily focussing on change/transition of earnings/occupations—hence, I believe that analysing repeated observations over a period of time is very instructive in the context of my research objectives. For such an empirical goal to be attained, in this paper, I use a strict balanced panel of four sweeps of the UKHLS. This is the most appropriate approach, because in a longitudinal/panel study, the objective is to look at repeated pairs of observations over a period of time (T) (Knies, 2014; Torres-Reyna, 2010). Since my research focus is on immigrants' assimilation transitions in terms of earnings/occupation, this paper uses a strict balanced panel (focusing only respondents that were interviewed in wave 1 through wave 4 of the UKHLS data). The rationale behind this approach is to capture the full potential attributes of a longitudinal study, of which the analytic sample is based on only those panel members present in the four sweeps of the UKHLS, however, one has to bear in mind the cost of losing observations.

Concurrently, the analytic units are restricted to those in working age (ranging between 16 and 67) for both men and women, who were full/part-time employees and with non-zero usual gross monthly wages, using four sweeps of UKHLS data (T=4). More importantly, self-employees are excluded because their wages are prone to measurement error; also working hours are more likely to be inconsistent (Barry, 1980; Brynin & Guveli, 2011; Psacharopoulos, 1977).

Additionally, on what concerns the income variable, outliers were identified using the graph box rule and subsequently excluded—i.e., wages outside the 1.5 box length of the upper box edge and those not within the 1.5 box lengths of the lower box edge are excluded. The reason behind this option relates to the fact that the outlier observations could potentially pull the mean of earnings either way (Allum & Eroglu-Hawksworth, 2011) – for more details, see dependent variable section in paper two, Figure 2.1, page 93. Some studies employ other techniques such as zero coding of negative earnings and top coding of earning above a given threshold

value—i.e., all respondents with earnings higher than a given threshold are given the threshold earnings (Gelman & Hill, 2009).

3 EMPIRICAL ANALYSES OF OCCUPATION TRANSITIONS AND EARNING TRAJECTORIES USING A BALANCED PANEL DATA APPROACH

In the preceding two papers I estimated access (or lack of access) to the professional class and pay asymmetry respectively using UKHLS wave 1 data. In this paper, I extend the scope of the analysis by using four sweeps of the UKHLS data, collected between 2009 to 2014 (Knies, 2014). In the preceding two papers I analysed access (or lack of access) to the professional class and pay asymmetry respectively using UKHLS wave 1 data, now I extend the scope of the analysis by using four sweeps of UKHLS data, collected between 2009 to 2014 (Knies, 2014). As outlined in the preceding section, the analysis starts off by calculating percentage change of country of origin groups in terms of occupational status and earnings and, subsequently, presenting a global analysis model on log wages based on the comparative study of old and new immigrants relative to the UK born White.' Both analyses, from a methodological perspective, require strict balanced repeated observations (panels) (Andreß et al., 2013).

The first stage of the analysis is mainly descriptive, and the focus is on occupational status transitions comparing old immigrants, new immigrants and the UK born White, and overall transitions for country of origin groups by gender (strict balanced panel approach adopted) (Andreß et al., 2013).

The occupational status transitions are based on the variable PROF (dependent variable used in paper one)—coded 1 for a deskilling occupational status and 0 for a professional occupational status. I should also mention that models for categorical variables are less apparent, because it makes no sense to compute differences based on a categorical variable –several options however are available in the literature, one of them is adopted in this paper and incorporates "previous value of Y ($y_{i,\ t-1}$) as an independent variable in a model in levels" (Andreß et al., 2013, p. 91). In statistical lingo this implies that, the effects of X, Z, and T can be estimated, controlling for the former status (ibid). In this context I hypothesize that apart from random fluctuations –all wave transition matrices are similar and such an assumption can be modelled in a logistic configuration as follows:

$$\Pr(y_{it}=q) = \frac{\exp(_{Exp(B0+B1\ yi,t-1)}}{1+\exp(_{Exp(B0+B1\ yi,t-1)}} \quad \text{(ibid).}$$

Basically the given transition model states that the probability of being observed in state y_{it} =q depends only on the state of being observed in the previous wave (t-1), irrespective of whether q is observed in wave = 1, wave =2, wave = 3 or wave =4 (ibid). There is also a slightly complicated assumption which could be modelled by interacting $y_{i,\ t-1}$ with a dummy for each Wave ; however, for this paper I stick with the first one, otherwise for more nuanced discussion of other alternatives see (Andreß et al., 2013). According to Bryan (2015) after *tsseting/xtsetting* the data, one can easily create lagged variables and then tabulate the current value against the lagged value to estimate transitions (is preferred as survey weights can be incorporated using svy). Also a programme in Stata called *xttrans* can be used directly on the categorical variable and similar results are obtained, however in this context it is harder to incorporate survey weights (Bryan, 2015). In what follows I shed light on the empirical analysis of log wage using a strict balanced panel approach. Note that in this paper I will only refer to two panel data models: Fixed- effects (FE) and Random-effects (RE) models.

According to Andreß et al. (2013), a panel data analysis is invoked by organising data into cube structure comprising three dimensions: (i) units $_i$=1,…, n,; (ii) measurements (panel waves) t=1,…,T, and (iii) variables *v=1,..., V* (some time-varying, some are time constant). Considering the same literature, a panel regression model in levels can be conceived simply as an extension of an OLS model for cross-sectional data, through which an expected value of a continuous dependent variable Y on Time T and a set of independent variables, takes two forms, i.e., either a time-varying ***x*** or time-constant ***z***. Therefore, a generic panel model incorporating a time dimension is organised as follows:

$$y_{it} = \beta_{0(t)} + \beta_1 x_{1it} + ...+\beta_k x_{kit} + e_{it} \ldots + \gamma_1 z_{1i} + \ldots + \gamma_j z_{ji} + u_i, t = 1, ., T) \quad (1) \quad \text{(ibid).}$$

where subscripts *i* refer to *i*=1,…n units, which have been observed at t_1,…T equidistant points in time, y_{it} designate the value of the dependent variable Y for respondents i in waves (t): t_1 t_2 t_3 and t_4; its expected value is modelled as a linear function of j time constant (z_{1i} -z_{ji}) and *k* time –varying independent variables (x_{1it} – x_{kit}), β1 – βk denote the corresponding regression coefficients. The term $\beta_{0(t)}$ captures the overall level of the dependent variable, since its level is time specific, it can be a function of time to control for possible time trends, however, if there is no

time trend it reduces to the familiar regression constant β0 (ibid). Moreover, I include year of interview in the panel model to account for aggregate changes over the four sweeps of UKHLS data (waves overlap) (Knies, 2014). It also enables the researcher to assess whether the unconditional error variance has changed over time, and this is interacted with country of origin groups' partial effects change over time, i.e. to capture changes in group's wages caused by observed covariates (Mitchell, 2012; Jeffrey Wooldridge, 2010).

On what concerns $e_{it} = \beta_k + {}_1x_k +$, *it* + $\beta_k + m x_{k+} m$, *it* $+ v_{it}$, this expression stands for the *m* unknown time- varying explanatory variables plus all random error (v_{it}) that affects the dependent variable (including measurement error) (ibid). u_i is the error pertaining to the unit *i*, which refers to the unobserved heterogeneity—it captures all variation at the unit level that is not controlled for by the independent variables in the model, which can be expressed as follows:

$$u_i = \gamma_{j+1} + z_{j+1,i} + \ldots + \gamma_{j+1} + l z_{j+l,i} \quad (2)$$

(ibid), summarizes the effect of the l unknown time constant explanatory variables (ibid). If the assumption is that equation (2) is functional, unobserved effects may also be defined in terms of *1*x*L (L > K)* vector of instruments, normally designated as z_{it} –deemed to be strictly exogenous (see Semykina & Wooldridge, 2010, p. 376).

In the relevant methodological literature, the discussion of whether u_i must be treated as random-effects (RE) or a Fixed Effects (FE) seems prevalent. According to Torres-Reyna (2010, p. 9) one can use FE if the primary motivation is to analyse the "impact of variables that vary over time". Two assumptions ascribed to FE models include:

(i) a feature within the individual/group may impact or bias the predictor or the given outcome variable – the researcher needs to control for this—hence, using a FE specified model nullifies the effect of time invariant characteristics on the predictor (thus, the results from the model correspond to the predictor's net effects) (ibid);

(ii) time invariant characteristics are unique to the individual/group and should not be correlated with other individuals/groups (ibid). Therefore, as a rule of thumb, if the error terms are correlated, a FE model is not ideal since inferences may be biased and, thus, the researcher needs to model that relationship using RE (the *Hausman* test is applied) (ibid). According to Hausman (1978, p. 1261), "the so-called fixed effects model treats u_i as a fixed but unknown constant across individuals". The

variation in the dependent variable must be due to influences other than the fixed characteristics as expressed in equation (1) - a true estimator that can be expressed as follows:

$Y_{it} = X_{it}\beta 1 + \alpha_i + \mu_{it}$ (3) (Hausman, 1978; Torres-Reyna, 2010)

where αi (i=1….n) is the unknown intercept for each entity (n entity–specific intercepts), and, μit is the error term (additional components defined as in equation (1).

The alternative specification, which is adopted in this paper is the 'random effects' (RE) approach or 'variance components model' (VCM), (Hausman, 1978, p. 1261). According to Baltagi (2001, p. 17) "[t]here are too many parameters in the fixed effects model and the loss of degrees of freedom can be avoided if the u_i can be assumed random". In terms of the rationale behind RE, unlike in the FE model, the variation across entities is assumed to be random and uncorrelated with the predictors, or independent variables (Torres-Reyna, 2010). In the same vein, Wooldridge (2010, pp.285-286) sustains that

> [i]n the traditional approach to panel data models, u_i is called a 'random effect' when it is treated as a random variable and a 'fixed effect' when it is treated as a fixed parameter for each cross section observation $_i$….the key issue is whether or not it is correlated with the observed explanatory variables x_{it}, t=1, 2,…T_i. …In modern econometric parlance, a random effects framework is synonymous with zero correlation between observed explanatory variables and the unobserved effect: Cov (x_{it},u_i) = 0, t = 1, 2,…,T_i.

Therefore, an advantage of RE approach is that one can include time invariant variables such as gender, country of origin global group, which in the FE model would be absorbed by the intercept (Torres-Reyna, 2010). The RE model is specified as follows:

$Y_{it} = X_{it}\ \beta_1 + \alpha_i + \mu_{it}$ (4) (ibid)

The advantage of the RE model is that it allows the researcher to generalize the results beyond the sample used in the model (ibid).

The main challenge in panel modelling is to ascertain whether the group specific effects μ_i are correlated with regressors (Jeffrey Wooldridge, 2012). To test whether the FE- or RE-estimates are desired, a *Hausman* specification test (basically an omitted variable diagnostic test) was implemented in *Stata 14* using the syntax *Hausman* on FE- and RE-estimates (Hausman, 1978; StataCorp, 2014). According

to Hausman (1978, p. 1263), under the random effects specification, the researcher gets an asymptotically efficient estimator while the fixed effects estimator is unbiased and inconsistent but not efficient[49]. The specification issue is whether the conditional mean of the μ_i can be regarded as independent of the X_{it}[50], hence, significant values of a *Hausman* specification test would imply that a unit heterogeneity in the random effects model has a non-zero correlation with the observed covariates x_{it} and z_i and the parameter estimates for the random effects model are biased due to un-estimated impact of excluded variables not accounted for in the estimated model(s) (for detailed description, syntax and worked examples of the hausman test see StataCorp, 2014, pp. 768-774). Also, a test for *cross-sectional dependence (CD)*[51] in FE and RE (see for example, Pesaran (2004) (Pesaran, Ullah, and Yamagata (2008)52 is desirable when using an unlimited Stata MP version, using a new command: *xtcsd*[53] . However, a conspicuous limitation of FE models is the fact that time-invariant variables are dropped off and their coefficients are not estimated, hence, since I am interested in the effects of time-invariant variables, only RE models specified using the strict balanced panel data (four sweeps of UKHLS).

One advantage of fitting a RE model with strict balanced panel data is that it allows one to specify the within-group structure – i.e., within-subject factor in which each subject receives several or all levels of treatment (ibid). In that context, the RE models specified for analysing 'old' and 'new' immigrants' earning transitions relative to the UK born white's, are conducted in Stata MP 14 version, using the matrix syntax: *Y[I,t] =X[I,t]*b +u[i] +v[I,t] if nwaves == 4*. Some of the models

49 A potentially important problem for the FE estimator is its sensitivity to errors in variables, hence the amount of inconsistency would be greater for FE models if errors in variables are present (Hausman, 1978).

50 See foot note 28.

51 Cross-sectional dependence in the errors arises because of the presence of common shocks and unobserved components that ultimately become part of the error term such as spatial dependence, and idiosyncratic pairwise dependence in the disturbances with no particular pattern of common components or spatial dependence

52 A test is prudent in cases where T is small as N ∞, especially after estimating RE and FE models with short longitudinal time span, as in my case, see http://www.stata-journal.com/sjpdf.html?articlenum=st0113 (p. 484), accessed 12/03/2013.

53 The command is suitable for cases where T is small as N → ∞, however, it complements the existing Breusch–Pagan Langrange Multiplier (LM) test written by Christopher F. Baum, xttest2, which is applicable for small N as T → ∞, (for explicit explanation of CD and other related tests see http://www.stata-journal.com/sjpdf.html?articlenum=st0113, accessed 10/03/2014).

were specified using longitudinal weights with the *Stata suite command xtregre2*[54] , as well as using the *Stata syntax, xtreg* with the option, if *nwaves == 4* (ibid).

However, before moving to the next section, there are technical terms that require clarification in order to facilitate the reading and interpretation of the descriptive statistics and empirical results in the subsequent sections, these include: group mean, overall mean, between variance, within variation and intraclass (rho) (Guierrez, 2008; Torres-Reyna, 2010).

Group Mean ($\bar{x}i$) $= \frac{1}{T}\sum_t x_{it}$ (whole sample average) ;

Overall Mean = $\bar{x} = \frac{1}{NT}\sum_i \sum_t (x_{it} - \bar{x})^2$ (is the sum over all individuals and years, of the square difference between each observation of x and the mean);

Between Variance $S_B^2 = \frac{1}{N-1}\sum_i \sum_t (x_{it} - \bar{x})^2$ (is the sum of squares of differences between individual means and the whole sample mean);

Within Variance $=\frac{1}{NT-1}\sum_i \sum_t (x_{it} - \bar{x}_i)^2 = \frac{1}{NT-1}\sum_i \sum_t (x_{it} - \bar{x}_i + \bar{x})^2$ (sum of squares of each individual's observation from its mean)

Rho (ρ) =cor (Y_{ij}, $Y_{ij`}$) = $\frac{\sigma_\alpha^2}{\sigma_\alpha^2+\sigma_e^2}$ (correlation coefficient- correlation between two observations in the same group) where j subscript designates group. The term σ_α^2 represents the variation across groups (between groups variance, even if one has more than two) and the term σ_e^2 designates variation within group (ibid). Therefore any model with variance of observations partitioned into two components is called a variance components model (ibid).

54 xtregre2 estimates a random effects model with weights, however, it can only accept aweights and alternative variance estimators are not supported , net describe xtregre2, from(http://fmwww.bc.edu/RePEc/bocode/x), accessed 14/10/2015 .

4: DESCRIPTIVE STATISTICS: OCCUPATION AND EARNING TRANSITIONS

This section starts by offering an overview of the four sweeps of the UKHLS, starting with descriptive statistics of selected variables presented in Table3 1. This presentation provides the background information for the subsequent discussion of the results of the models. In statistical lingo, it is a necessary condition of any explanatory variable to show some variation, otherwise, constants are useless (Andreß et al., 2013).

Table3 1: Four Sweeps of UKHLS before and after balancing

	Unbalanced Panel			*Balanced Panel*		
Wave	Freq.	Percent	Cum.	Freq.	Percent	Cum.
1	50,994	24.57	24.57	30,594	25.00	25.00
2	57,136	27.53	52.10	30,594	25.00	50.00
3	52,256	25.18	77.28	30,594	25.00	75.00
4	47,157	22.72	100.00	30,594	25.00	100.00
Total	207,543	100.00		122,376	100.00	

Source: Own Computations based on UKHLS (four sweeps)

Table3 2: Descriptive Statistics of Selected Variables (Balanced Panel)

Variable		Mean Std. Dev.	Min	Max	Observations
Pidp	overall	8.53e+08 4.67e+08	6.80e+07	1.63e+09	N = 122376
	between	4.67e+08	6.80e+07	1.63e+09	n = 30594
	within	0	8.53e+08	8.53e+08	T = 4
Hidp	overall	8.57e+08 4.67e+08	6.80e+07	1.64e+09	N = 118596
	between	4.67e+08	6.80e+07	1.64e+09	n = 30594
	within	1684971	8.51e+08	8.64e+08	T-bar = 3.87645
Log Wage	overall	7.334057 .7117622	5.501258	9.193603	N = 53373
	between	.7137642	5.501258	9.185022	n = 16880
	within	.2169086	5.31885	9.626837	T-bar = 3.16191
Professional status	overall	.1035974 .3047398	0	1	N = 67521
	between	.3027459	0	1	n = 20173
	within	.1012364	-.6464026	.8535974	T-bar = 3.3471
Global Group	overall	.0730041 .3460513	0	2	N = 118596
	between	.2061878	0	2	n = 30594
	within	.282917	-1.426996	1.573004	T-bar = 3.87645
Origin Country	overall	1.356985 1.855793	1	14	N = 118596
	between	1.082707	1	14	n = 30594
Education Years	overall	11.24626 1.272187	5	15	N = 33071
	between	1.265878	5	15	n = 29947
	within	.2263287	6.746258	15.74626	T-bar = 1.10432
Log of Weekly	overall	3.38924 .4979841	0	4.574711	N = 58349
hours	between	.498677	0	4.574711	n = 17820
	within	.2066884	.5123991	5.528423	T-bar = 3.27435
Years Since Migration	overall	22.2752 16.90206	0	97	N = 5516
	between	17.076	0	97	n = 4815

	within	1.32016	-7.058134	39.94187	T-bar = 1.14559
Years Since Migration	overall	781.8122	0	9409	N = 5516
		995.4691			
Squared	between	1012.971	0	9409	n = 4815
	within	83.64044	-1030.688	2594.312	T-bar = 1.14559
Source of Qualifications	overall	.9874125	0	1	N = 115670
		.1114863			
dummy	between	.0669141	0	1	n = 30582
	within	.0915515	.2374125	1.737412	T-bar = 3.78229
English language	overall	.9759604	0	1	N = 117556
		.1531728			
	between	.0822788	.5	1	n = 30566
	within	.131811	.2259604	1.47596	T-bar = 3.84597
Sex	overall	.5551874	0	1	N = 118596
		.4969471			
	between	.4968773	0	1	n = 30594
	within	.0146395	-.1948126	1.305187	T-bar = 3.87645
Employment	overall	.8623074	0	1	N = 66525
		.3445796			
	between	.3169343	0	1	n = 19882
	within	.1394242	.1123074	1.612307	T-bar = 3.34599
Marital Status	overall	1.141535	0	4	N = 114085
		1.107449			
	between	1.06959	0	4	n = 30594
	within	.25272	-1.858465	4.141535	T-bar = 3.729
Year of interview	overall	2011.058	2009	2014	N = 118594
		1.265849			
dummies	between	.5375204	2010.333	2012.667	n = 30594
	within	1.14655	2008.392	2013.392	T-bar = 3.87638
Work force experience	overall	26.25711	0	54	N = 28665
		14.00658			
	between	13.94556	0	54	n = 25823
	within	.4325727	18.75711	33.75711	T-bar = 1.11006
Work force experience^2	overall	885.6132	0	2916	N = 28665
		755.6951			
	between	760.0388	0	2916	n = 25823
	within	23.20252	263.1132	1508.113	T-bar = 1.11006
Health condition dummies	overall	2.278442	0	4	N = 118531
		1.110188			
	between	.8407444	0	4	n = 30594
	within	.7260287	-.7215581	5.278442	T-bar = 3.87432
Wave	overall	2.5	1	4	N = 122376
		1.118039			
	between	0	2.5	2.5	n = 30594
	within	1.118039	1	4	T = 4
Years of Interviews	overall	2011.058	2009	2014	N=118594
		1.265849			
	between		2010	2013	n = 30594
		.5375204			
	within		2008	2013	T-bar = 3.87638
		1.14655			

Note: the negative value in the minimum is not a mistake, it just shows a higher prevalence value when subtracted from the within mean variation.
Source: Own computations based on UKHLS waves1-4

Table3 2 shows summary statistics of the core variables used in the forthcoming empirical analysis decomposed in between variation and within variation. The overall and within are calculated over 30594 repeated observations across the four waves of UKHLS (based on pidp or wave totals). On what concerns the professional status variable, the between variation is calculated over 20173 person years and the average number of waves the persons were observed in the professional status data is 3. A very important point to retain from the Table3 2 is that when one imposes

longitudinal weights or the balanced panel condition, for all variables with T- bar less than 4 Stata will report no observations (contrarily, when it is an unbalanced panel the T-bar rule does not apply). Turning now to the variable log wage, the overall and within variation is calculated over 53373 and the between is calculated over 16880 and the average number of years a person was observed in the earnings data is 3. The final point to make here is that few variables are time-invariant by nature (Andreß et al., 2013). In the same context, some variables may be treated as time-constant, either because variations are so occasional that the corresponding variable is more or less a steady characteristic, or because one is lacking the necessary longitudinal to measure the changes overtime (ibid).

5 Empirical Results

The modelling strategy followed in this paper is slightly different from the previous papers. It must be stressed that this paper makes very strong assumptions that the processes of interests, i.e., occupational status transitions and earning trajectories are observed from the beginning of wave 1 through wave 4 of UKHLS (strict balanced panel), a case illustrated using Table 3 1 in Appendix A.

Moreover, the modelling strategy adopted is the layering approach (Berthoud, 2000). The models tested are more parsimonious, including less predictors, however, I present the results for the full model in the Appendix Section A (including country of origin group dummies). The country of origin dummies were dropped and only the global group consisting of 3 level dummies for UK born White and all immigrants were included, designated as follows: (1) All UK born White (men and women); (2) old immigrants (both men and women) and (3) new immigrants (men and women), along with the classical control variables (demographic; human capital; socio-economic), also used to explain variations on log wage over 4 sweeps of UKHLS.

Table3 3 Key Result Occupational Transitions: of Global Groups: Old and New Immigrants and the UK White Born

Global Group	Wave 1 (t-1)	Wave 2 (t-1)			Wave 3 (t-1)				Wave 4 (t-1)			
UK born White	No observations		*Current occupational status*			Current Occupational status				*Current occupational status*		
		Lagged Occupation status	Professional	Deskilling	Total	Lagged Occupation status	Professional	Deskilling	Total	*Lagged Occupational status*	Professional	Deskilling	Total
		Professional	99	1	100	Professional	99	1	100	Professional	99	1	100
		Deskilling	11	89	100	Deskilling	12	88	100	Deskilling	13	87	100
		Total	90	10	100	Total	90	10	100	Total	90	10	100
Old Immigrants	No observations	*Lagged Occupational status*	Professional	Deskilling	Total	*Lagged Occupational status*	Professional	Deskilling	Total	*Lagged* occupation	Professional	Deskilling	Total
		Professional	97.94	2.06	100	Professional	99	1	100	Professional	100	100	100
		Deskilling	12.50	87.50	100	Deskilling	11	89	100	Deskilling	-	-	-
		Total	91.43	8.57	100	Total	90	10	100	Total	100	100	100
New Immigrants	No observations	*Lagged Occupational status*	Professional	Deskilling	Total		Professional	Deskilling	Total	lagged occupation	Professional	Deskilling	Total
		Professional	93.25	6.75	100	Professional	94.03	5.97	100	Professional	100	0.00	100
		Deskilling	31.43	68.57	100	Deskilling	27.91	72.09	100	Deskilling	25	75	100
		Total	82.32	17.68	100	Total	77.97	22.03	100	Total	82.35	17.65	100

Source: Own Computations Based on UKHLS (Four Sweeps)

Table3 4: Occupational Overall Transitions of Country Groups by Gender (Weighted)

Country of Origin	Men overall transitions based on a Strict balanced panel *Professional status by row Frequency & %*	*Deskilling status by row Frequency & %*	*Total by row Frequency & %*	Women overall transitions based on a Strict balanced panel *Professional status by row Frequency & %*	*Deskilling status by row Frequency & %*	*Total by row Frequency& %*
UK born	27,469	3,324	30,793	30,483	3,233	33,716
White	89.21	10.79	100	90.41	9.59	100
EU15	75	11	86	84	9	93
	87.21	12.79	100	90.32	9.68	100
Old	46	3	49	72	1	73
Commonwealth	93.88	6.12	100	98.63	1.37	100
Indian	213	38	251	112	30	142
	84.86	15.14	100	78.87	21.13	100
Pakistani	175	28	203	45	9	54
	86.21	13.79	100	83.33	16.67	100
Bangladeshi	123	21	144	35	2	37
	85.42	14.58	100	94.59	5.41	100
African	178	39	217	176	18	194
	82.03	17.97	100	90.72	9.28	100
Caribbean	29	9	38	45	8	53
	76.32	23.68	100	84.91	15.09	100
Middle Eastern	24	4	28	13	2	15
	85.71	14.29	100	86.67	13.33	100
Chinese Hong	29	3	32	32	4	36
Kong	90.63	9.38	100	88.89	11.11	100
Sri Lankan	48	9	57	35	4	39
	84.21	15.79	100	89.74	10.26	100
Eastern	48	19	67	54	13	67
European	71.64	28.36	100	80.60	19.40	100
Irish	35	4	39	63	3	66
	89.74	10.26	100	95.45	4.55	100
Other	381	73	454	404	74	478
	83.92	16.08	100	84.52	15.48	100
Total	28,873	3,585	32,458	31,653	3,410	35,063
	88.95	11.05	100.00	90.27	9.73	100.00

Source: Own Computations based on UKHLS (four sweeps)

Table3 3 provides descriptive information on occupational transitions for UK born White, old and new immigrants. Overall, there seems to be a relative stability in terms of labour market integration for all the groups included in the table. In line with our previous papers, new immigrants seem to be the most penalized in terms of job market integration, having the highest proportion of 'negative' transitions into deskilling occupations. This also means instability for those who manage to find a better job - in time; they might be forced to return to deskilling jobs. Old immigrants seem to fare better in this regard, but are not immune to change from a non-deskilling occupation to routine/ manual jobs. The figures seem to suggest that 'upwards' labour market mobility is achievable, however this is true potentially only for a relatively small number of individuals.

Table3 4 shows the overall occupational transitions in terms of professional and deskilling distribution of country of origin by gender. On what concerns women, it is noticeable that only one of the members of the Old Commonwealth group (women) has a deskilling occupational status job. Indian men and women are distributed across both professional and routine jobs—this shows the diversity of assimilation paths in this group. When looking at the two tables, we see that there is a huge diversity across and among both men and women groups. It should be noted that, in some cases, individuals might not be included in either of the categories because they are not integrated in the labour market (either voluntarily or involuntarily). Another important note is that the statistics are based on a strict balanced panel data (4 sweeps).

Table3 5 Key Empirical Results on Log wage overtime Comparing 'Old' and 'New' immigrants to UK born White

Variables	Global Group *Men & Women Unbalanced Panel (Control Model)*	Global Group *Men & Women Balanced Panel (No Weights)*	Global Group *Men & Women Balanced Panel (With Weights)*
Global Group Effects (UK Born White (Is Ref)			
Old Immigrants	0.271***	0.278***	0.286***
	(0.0263)	(0.0340)	(0.0440)
'New' Immigrants	0.220***	0.225***	0.212***
	(0.0314)	(0.0442)	(0.0540)
Human Capital Effects			
Education Years	0.146***	0.155***	0.161***
	(0.00384)	(0.00496)	(0.00552)
UK Based Qualifications	0.216***	0.204***	0.176***
(==1)	(0.0287)	(0.0413)	(0.0506)
English Language	0.213***	0.188***	0.190***
Proficiency (==1)	(0.0278)	(0.0397)	(0.0497)
Workforce Experience	0.0542***	-	-
	(0.00143)	-	-
Workforce Experience^2	-0.000968***	-	-
	(2.73e-05)	-	-
Gender Effects			
Being Women (==1)	-0.437***	-0.462***	-0.470***
	(0.00820)	(0.0110)	(0.0119)
Economic Activity Effects			
Employed Full /Part Time	0.168***	0.230***	0.264***
Active (Employed)==1	(0.0469)	(0.0660)	(0.0733)
Marital Status Effects (Widowed Is Reference)			
Single/Never (=1)	0.0406***	0.169***	0.210***
	(0.0108)	(0.0124)	(0.0128)
Married==2	0.152**	0.319***	0.334***
	(0.0767)	(0.0896)	(0.0958)
Civil/Former Civil	0.0175	0.175***	0.207***
Partner ==3	(0.0169)	(0.0202)	(0.0227)
Divorced==4	-0.0172	0.0310	0.0688
	(0.0402)	(0.0467)	(0.0532)
Year Of Interview Effects (2009 Is Reference)			

2010	-0.00349	-	-
	(0.00861)	-	-
2011	0.0548***	-	-
	(0.0155)	-	-
2012	0.0319	-	-
	(0.0247)	-	-
2013	0.0733**	-	-
	(0.0355)	-	-
2014	-0.0235	-	-
	(0.0970)	-	-
Constant	4.683***	5.089***	4.973***
	(0.0770)	(0.103)	(0.117)
N	22,220	13,141	10,870
Number Of Groups	22215	13139	10869
Wald Test (Chi2)	6472	3042	2745
Degrees Of Freedom)	18	11	11
R2 -Overall	0.226	0.188	0.202
R2- Between	0.226	0.188	0.188
R2- Within	0.240	.	0
Rho (ρ)	0.983	0.770	0.480
Random Effects			
v_{it} (Sigma-*see equation 1*)	0.604	0.623	0.623
SD of Residuals (Sigma_e)	0.0793	0.299	0.449
Unobserved heterogeneity (Sigma_u)	0.598	0.547	0.431

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Own Estimations Based on UKHLS (Four Sweeps)

The findings are in line with the assimilation hypothesis: the longer the immigrants live and work in the host society, the more likely they are to reach parity with UK born White or even surpass them. The results seem to support this postulate - old immigrants' b is .286 and 'new' immigrants' b is .212, both are statistically significant.

It is also important to point out that in this paper all observations correspond to group member years (observations overtime, 4 UKHLS sweeps). Another important aspect regarding modelling choices concerns the grouping of men and women, as here I am interested in the composite effects of the whole sample of economically active individuals (full / part-time employed) on earnings and occupations. Regarding the women selection issues in the labour market, none of the sample members have Zero earnings and zero working hours. A full description of the variables in my tests is provided in the data and methods section.

6. Discussion of results

In this paper, it is clear that the patterns of results presented before (paper 1 and 2 - cross sectional analyses) persist with the random effects GLS regression and the additional time component included in the analyses of earnings and occupations overtime. On what concerns my findings, I would like to highlight four key aspects as follows.

1 The effect of duration of stay on the UK.

The outcome for old immigrants is in line with previous results and the literature. This group seems well established in terms of labour market integration and even out-performing the UK born White. I believe this result provides empirical evidence to support some of the assumptions of the assimilation hypothesis (Alba & Nee, 2003; Borjas, 1995; Brubaker, 2001; Dustmann, 1996, 2000), in the sense that with more years in the UK, these immigrants have 28% increase in their average earnings compared to UK born White (Ceteris paribus).

2 The findings for 'new' immigrants also appear to be encouraging

Concomitantly, the findings for 'new' immigrants follow a similar trend to those of old immigrants, but, not to the same degree. 'New' immigrants have potentially different integration strategies – these individual strategies are also affected by the specific policies targeted at the 'new' immigrants. However, an important factor that still might have an impact on the labour market outcomes concerns different occupational networks (enclaves). A fundamental task for future research will be to integrate both qualitative and quantitative measures of socio-economic integration and labour market performance for both old and 'new' immigrants as these groups are very diverse and keep changing and adapting to an ever changing labour market. A more effective decision-making and policies aimed at creating a more inclusive and egalitarian society need to rely on more detailed information about immigrants and their experiences at arrival and during their stay.

3 Groups included in the analysis are far from being homogeneous

Based on the weighted random effects model, it is clear that there is a large amount of variance accounted for in the model (rho = 48%). Since the dependent variable is Log wage, the positive coefficients for immigrant groups in the models allow me to infer that besides the predictors included in the models, structural factors such as the duality of the

labour market and the policies, namely the high skilled immigration scheme policy, tier entry system and worker registration schemes (Clarke & Salt, 2003, 2004; Demireva, 2011; Drinkwater et al., 2009) may have a bearing in the initial integration in the labour market. Additionally, the socio-economic and political environments are very dynamic, making the labour market opportunities more precarious, *en pair* with economic restructuring processes which leave immigrants in a potentially more vulnerable labour market position. An additional note concerns the differences in terms of earnings for men and women. When controlling for education, source of qualifications, language, demographic characteristics and workforce experience, women seem to be in a more disadvantaged position.

4 Results for full and parsimonious models

In table 3.8 I present the results for the full model, which incorporate country of origin groups and in, the parsimonious model these are aggregated into 'old' and 'new' immigrants' categories. The decision to include the estimates for both modelling approaches relates to the objective of ensuring continuity and the comparability with previous studies.

7. CONCLUSION

This paper contributes to the ongoing discussion on occupation deskilling and pays asymmetry in the UK labour market, using strict balanced panel data - 4 sweeps of the UKHLS. These data allowed me to explore transitions (annual/ over the four sweeps) in the process of immigrants' socio economic integration in the UK labour market. This approach is innovative in this field, as other studies have used only used cross-sectional data (which does not allow for conclusions on the process of integration of the immigrants as these studies only take a snapshot in time). The few researchers that have published studies on this topic have tended to focus on only observable characteristics or restrict their analysis to males.

The research agenda in this field did not engage yet with panel data to explore the integration processes of immigrants - this remains one of the future potential areas of improvement on this field. One other relevant dimension concerns the modelling of variation across groups and time. From this paper it is clear that there is an in depth understanding of repeated observations overtime that should be accounted for (panel data).

In this paper, I have focused on occupational status transitions and earning trajectories comparing old and 'new' immigrants, relative to the UK born White. The evidence suggests that old immigrants reached higher levels of socio economic integration overtime (to the point of surpassing the average earnings of UK born White). The time dimension in this study is very relevant in terms of exploring individuals' transitions and trajectories.

As mentioned before, the labour market performance of immigrants differs from that of UK born White in several important ways. The education and experience of immigrants are subject to different 'rewards' to those of natives, and immigrants will usually end up in jobs that are a poor match for their education.

8.1 Appendix section A: Additional Results

Table3 6: Overall Transitions across Four Sweeps of UKHLS (Full Survey Complex Weights applied)

	Women			***Men***		
Country of Origin	Professional %	Deskilling %	Total %	Professional %	Deskilling %	Total %
UK born White	88.6	11.4	100	87.9	12.1	100
EU 15	91	9	100	84.1	15.9	100
Old Commonwealth	100	0	100	92.1	7.9	100
Indian	81.5	18.5	100	85.7	14.3	100
Pakistani	87.7	12.3	100	83.8	16.2	100
Bangladeshi	93.4	6.6	100	88.5	11.5	100
African	89.9	10.1	100	80.8	19.2	100
Caribbean	81.6	18.4	100	74.4	25.6	100
Middle Eastern	81.4	18.6	100	85.6	14.4	100
1Chines/Hong Kong	86.4	13.6	100	83.9	16.1	100
Sri Lankan	95.7	4.3	100	89.6	10.4	100
Eastern European	73.5	26.5	100	75.1	24.9	100
Irish	95.5	4.5	100	86.5	13.5	100
Other	78.1	21.9	100	79.3	20.7	100
Total	88.5	11.5	100	87.7	12.3	100
Key: row proportion Pearson: Uncorrected chi2(13) = 299.4357 Design-based F(10.15, 43900.72)=6.7517 P = 0.0000 Note: Strata with single sampling unit centred at overall mean. Note: 23 strata omitted because they contain no subpopulation members.				Key: row proportion Pearson: Uncorrected chi2(13) = 220.7056 Design-based F(10.75, 48896.13)= 3.2534 P = 0.0002 Note: Strata with single sampling unit centred at overall mean. Note: 12 strata omitted because they contain no subpopulation members.		

Source: Own estimations based on UKHLS (four sweeps)

Table3 7 Key Results: Full Panel Analytic Results on Log Wage for All Groups (Men and Women)

Variables	Global Group *Men & Women Unbalanced Panel (Control Model)*	Global Group *Men & Women Balanced Panel (No Weights)*	Global Group *Men & Women Balanced Panel (With Weights)*	Global Group *Men & Women Unbalanced Panel (Control Model)*	Global Group *Men & Women Balanced Panel (No Weights)*	Global Group *Men & Women Balanced Panel (With Weights)*
Global Group Effects (UK Born White (Is Ref)						
Old Immigrants	0.271***	0.278***	0.286***	-	-	-
	(0.0263)	(0.0340)	(0.0440)	-	-	-
'New' Immigrants	0.220***	0.225***	0.212***	-	-	-
	(0.0314)	(0.0442)	(0.0540)	-	-	-
Origin Country effects UK born White (ref group)						
EU15	-	-	-	0.471***	0.487***	0.464***
	-	-	-	(0.0555)	(0.0765)	(0.0798)
Old Commonwealth	-	-	-	0.379***	0.326***	0.395***
	-	-	-	(0.0570)	(0.0801)	(0.0784)
Indian	-	-	-	0.366***	0.367***	0.279***
	-	-	-	(0.0424)	(0.0599)	(0.0775)
Pakistani	-	-	-	-0.0464	0.0562	-0.00180
	-	-	-	(0.0572)	(0.0836)	(0.121)
Bangladeshi	-	-	-	-0.200***	-0.328***	-0.386**
	-	-	-	(0.0618)	(0.0921)	(0.169)
African	-	-	-	0.214***	0.200***	0.144**
	-	-	-	(0.0365)	(0.0509)	(0.0664)
Caribbean	-	-	-	0.147	0.281**	0.273
	-	-	-	(0.0894)	(0.114)	(0.220)
Middle eastern	-	-	-	0.325***	0.241	0.0827
	-	-	-	(0.114)	(0.175)	(0.232)
Chinese/ Hong Kong	-	-	-	0.175**	0.175	0.188
	-	-	-	(0.0836)	(0.111)	(0.155)
Sri Lankan	-	-	-	0.130*	0.0958	0.138
	-	-	-	(0.0784)	(0.106)	(0.148)
Eastern European	-	-	-	0.193***	0.129	-0.0243
	-	-	-	(0.0640)	(0.0927)	(0.0934)
Irish	-	-	-	0.405***	0.438***	0.417***
	-	-	-	(0.0702)	(0.0958)	(0.108)
Other	-	-	-	0.234***	0.260***	0.163***
	-	-	-	(0.0326)	(0.0440)	(0.0581)

Table 3 7 continued						
Human Capital Effects	-	-	-			
Education Years	0.146***	0.155***	0.161***	0.144***	0.155***	0.162***
	(0.00384)	(0.00496)	(0.00552)	(0.00387)	(0.00499)	(0.00555)
UK Based Qualifications	0.216***	0.204***	0.176***	0.260***	0.241***	0.183***
(==1)	(0.0287)	(0.0413)	(0.0506)	(0.0268)	(0.0385)	(0.0476)
English Language	0.213***	0.188***	0.190***	0.171***	0.154***	0.136**
Proficiency (==1)	(0.0278)	(0.0397)	(0.0497)	(0.0311)	(0.0435)	(0.0582)
Workforce Experience	0.0542***	-	-	0.0543***	-	
	(0.00143)	-	-	(0.00143)	-	
Workforce Experience^2	-0.000968***	-	-	-0.000971***	-	
	(2.73e-05)	-	-	(2.72e-05)	-	
Gender Effects						
Being Women (==1)	-0.437***	-0.462***	-0.470***	-0.441***	-0.466***	-0.473***
	(0.00820)	(0.0110)	(0.0119)	(0.00820)	(0.0110)	(0.0119)
Economic Activity Effects						
Employed Full /Part Time	0.168***	0.230***	0.264***	0.165***	0.226***	0.262***
Active (Employed)==1	(0.0469)	(0.0660)	(0.0733)	(0.0467)	(0.0658)	(0.0732)
Marital Status Effects (Widowed Is Reference)						
Single/Never (=1)	0.0406***	0.169***	0.210***	0.0450***	0.172***	0.214***
	(0.0108)	(0.0124)	(0.0128)	(0.0108)	(0.0124)	(0.0128)
Married==2	0.152**	0.319***	0.334***	0.150*	0.316***	0.333***
	(0.0767)	(0.0896)	(0.0958)	(0.0765)	(0.0894)	(0.0957)
Civil/Former Civil	0.0175	0.175***	0.207***	0.0202	0.176***	0.209***
Partner ==3	(0.0169)	(0.0202)	(0.0227)	(0.0169)	(0.0201)	(0.0227)
Divorced==4	-0.0172	0.0310	0.0688	-0.0133	0.0304	0.0729
	(0.0402)	(0.0467)	(0.0532)	(0.0401)	(0.0466)	(0.0531)
Year Of Interview Effects (2009 Is Reference)				-0.00173	-	-
2010	-0.00349	-	-	(0.00859)	-	-
	(0.00861)	-	-	0.0582***	-	-
2011	0.0548***	-	-	(0.0154)	-	-
	(0.0155)	-	-	0.0334	-	-
2012	0.0319	-	-	(0.0246)	-	-
	(0.0247)	-	-	0.0746**	-	-
2013	0.0733**	-	-	(0.0354)	-	-
	(0.0355)	-	-	-0.0227	-	-
2014	-0.0235	-	-	(0.0967)	-	-
	(0.0970)	-	-	-0.00173	-	-
Constant	4.683***	5.089***	4.973***	4.697***	5.096***	5.012***
	(0.0770)	(0.103)	(0.117)	(0.0761)	(0.102)	(0.117)
N	22,220	13,141	10,870	22,220	13,141	10,870
Number Of Groups	22215	13139	10869	22,215	13,139	10,869
Wald Test (Chi2)	6472	3042	2745	6650	3136	2807
Degrees Of Freedom)	18	11	11	29	22	22

Table 3 7 continued

R2 -Overall	0.226	0.188	0.202	0.231	0.193	0.206
R2- Between	0.226	0.188	0.188	0.231	0.193	0.191
R2- Within	0.240	.	0	0.254	.	0
Rho (ρ)	0.983	0.770	0.480	0.983	0.769	0.478
Random Effects						
v_{it} (Sigma)	0.604	0.623	0.623	0.602	0.622	0.621
SD of Residuals (Sigma_e)	0.0793	0.299	0.449	0.0793	0.299	0.449
Unobserved Heterogeneity (Sigma_u)	0.598	0.547	0.431	0.597	0.545	0.430

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1 Source: Own Estimations Based on UKHLS (four sweeps)

Table3 8: Diagnostics for Panel Effect, on the Balanced Panel Model:

xttest0
Breusch and Pagan Lagrangian multiplier test for random effects
Logwage [pidp, t] = Xb + u [pidp] + e [pidp, t]

Estimated results:

	Var	sd = sqrt(Var)
Logwage	.4782245	.6915378
e	.0893115	.2988503
u	.2992042	.5469957

Test: Var(u) = 0
chibar2(01) = 6.12
Prob > chibar2 = 0.0067

Source: Own computations based on UKHLS data (four sweeps)

Clearly, the null hypothesis of no panel effect is rejected in favour of RE.

8. CONCLUSIONS

My thesis consists of three papers focusing on socio-economic integration processes of 'old' and 'new' immigrants from both western and non-western countries of origin' working and living in the UK. Three key topics were addressed namely: access (or lack of access) to the professional class; occupational and pay asymmetries as well as occupational status transitions and earnings trajectories using both cross sectional and longitudinal studies based on UKHLS data (2009-2014). Concerning access (or lack of access) to the professional class, the empirical results show that immigrants face labour market penalties, which occurs when highly skilled individuals are integrated in occupations that require none or few of their skills. In sum, the labour market performance of immigrants is certainly different from the UK white born in several aspects, meaning also different 'rewards' and integration prospects.

Main Findings

Paper One

The tentative answer to my research question is that access (or lack of access) to the professional class for men and women country of origin groups is dissimilar to that of UK White (men and women). The dissimilarity emerges from the fact that not all immigrant groups are occupationally disadvantaged in comparison to the UK White (men and women). Within this context, I rejected the null hypothesis in favour of the

alternative hypothesis, which emphasizes access (or lack of access) to the professional class differences in the UK labour market.

In this paper, I evaluate the access (or lack of access) to the professional class of country of origin groups working in the UK labour market, based on UKHLS wave 1 data using simple probit and Heckprobit regressions for men and women respectively. One of my findings is that immigrants (men and women) are far from demonstrating a standardised occupational performance relative to the UK born White (men and women) – the same applies to when contrasted against each other. Moreover, positive lack of access to the professional class outcomes are more likely for Caribbean, Pakistani, Bangladeshi and 'Other' immigrant groups and lowest for Old Commonwealth men immigrants. I believe my findings are robust given the rigorous methods and robustness checks applied to both my descriptive stats and empirics. In particular, I would like to emphasize my options on what concerns the comments/ remarks previously received on this paper.

The empirical results in the first paper suggest that the UK labour market creates opportunities for few, in particular, highly skilled personnel (both immigrants and UK–born White with sought after skills such as ITCE yet at the same time, entrapping many others, in particular migrants and not UK–born White with unsought after skills into labour intensive sectors without advancement opportunities). Therefore the polarisation of skills in the UK labour market need to be interpreted within the broader contexts of globalisation and major changes in foreign labour force, certainly accentuated by neo-liberal economic restructuring in the UK economy today (and potentially in the future). Within this context, the lack of access to the professional class of low(er) skilled immigrants relative to the UK–born White in the UK labour market may not be surprising *per se*, but does suggest an interplay of structural forces shaping both up- and down- ward socio-economic integration trends ingrained and patterned through the axes of neo-liberal economic restructuring mechanisms. Moreover, it may also indicate that the UK labour market, like the US labour market, embodies an hour glass[55] economic structure, in which many immigrants are trapped as a result.

While the evidence in the literature and descriptive stats suggest that many highly educated foreign immigrants have settled in the UK labour market from all over the

[55] (Douglas & Hirst, 1998; Perlmann & Waldinger, 1997)

world, it appears that many such typical immigrants have their enthusiasm(s) and educational aspiration(s) thwarted in terms of obtaining a high profile job and are therefore experiencing disproportionate access (or lack of access) to the professional class as a result.

Therefore, access (or lack of access) to the professional class, evident in the UK labour market, may be attributed to a highly selective neoliberal system rather than discrimination suggested in some literature reviewed. This seems a logical conclusion, given the fact, that the UK labour market has a sizeable proportion of 'brain exchange' opportunities, mainly in the skill intensive ITCE sectors (Rollason, 2002), leaving many with unlooked-for skills entrapped in deskilling occupations. Furthermore, the attempts concerning the creation and establishment of a knowledge-based niche in the global economy, certainly have a bearing on diverse socio-economic integration trajectories of diverse international immigrants' human capitals (Ewers, 2007). The drive for restructuring of the UK economy, in order for this to become one of the largest world knowledge bases ensures that human resources devoted to science and technology are epitomised in the process. Hence, inducing a polarizing effect on human capital selection and non-selection, where the former selects skills oriented to science and technology required in skill-intensive sectors of the UK economy and the latter exacerbating lack of access to the professional class, mainly those with humanities-related backgrounds only find employment opportunities in labour intensive sectors. However, access (or lack of access) to the professional class has been shown to be varied in both depth and intensity across immigrant groups relative to the UK–born White.

The selection and distribution of human capital (country specificities as well as country specific human capital characteristics) play a vital role in determining the labour market integration of immigrants. To summarize, the pattern and distribution of human capital across immigrants and the UK–born White, as well as between western and non-western immigrants, is very diverse and uneven. The empirical results suggest that immigrants are more susceptible to lack of access to the professional class regardless of presenting higher average scores of formal education years compared to the UK–born White. There are however some exceptions, given the fact that some Indian and African migrants seem to be achieving high-profile jobs in the UK labour market.

Consequently, the prevailing occupational labour market gaps between and across immigrant groups and UK–born White remain complex, given the dynamic nature of the socio-economic and policy environment. However, in order to understand how the UK labour market has become inclined to privilege ITCE skilled immigrants and less attracted to humanities-based skilled immigrants, one would need to explore a more heuristic analytic approach[56], which does not only look at the UK labour market or just skilled immigrant influxes into the UK labour market, but, structural mechanisms in neoliberal markets in the 21st century. This is relevant because the UK economy is nested in global economies (Ewers, 2007), hence, the UK Labour market is embedded in global multilevel structural and institutional configurations (Hill & Fujita, 2003, p. 207). In this regard, advocates for neo-liberal economic structural adjustments and human capital theorists have much to contribute in terms of attributes affecting human capital development and its sustainability in dynamic global economies, in which educational skills and recruitment into occupations and promotions thereafter continue to be selective, precarious and unsustainable, since technological advancements and innovations continue unabated in such economies. Nevertheless, international migration and socio-economic integration theories (Morawska, 2007; Portes & Rumbaut, 1996, 2001; Portes & Zhou, 1993; Zhou & Lee, 2008) have been shown in *Paper One* to be important in understanding access (or lack of access) to the professional class in the UK labour market. Certainly, this is an expanding field of inquiry, which is by no means simplistic on what concerns assumptions on the occupational status existing between many immigrants and UK–born White.

Paper One has therefore empirically shown that access (or lack of access) to the professional class is uneven between and across migrants and the UK–born White, as well as between and across immigrant groups themselves, on what regards access (or lack of access) to the professional class. Therefore, both more flexible entry rules as well as labour market austere policies can force job-seeking immigrants to stoop low and compete for unskilled jobs in the labour intensive sectors, thus potentially exacerbating lack of access to the professional class. It is clear that access (or lack of access) to the professional class challenges the conventional view that perceives

56 Such an approach should also take cognisance of both non-random (im)migration and non-random out-migration as well as checking whether the two given migration forms are temporary or permanent, i.e. if migrations are temporary rather than permanent, migrants will also be influenced by the future economic situations in the given host labour market, see for an example (Dustmann, 2000)

education as both a labour market entry 'filter', through which meritocracy must be esteemed and defended (Arrow, 1973).

Paper Two

This paper evidenced a hierarchical nature of pay asymmetry within and across occupations and country of origin groups. The results in this paper clearly shows when considering immigrants separately, the pay figure for 'professionals is 46% more compared to corporate managers for all 'new' immigrants men (*ceteris paribus*). This result is not surprising as many 'new' immigrants men and women are highly skilled (Dustmann et al., 2003) and came to the UK through immigration schemes/ acts (for an example Immigration and National Act 2006) motivated by labour market shortages in specific sectors such as hospitality, food processing, National Health Service, Worker Registration Schemes (A8 countries-excluding Cyprus and Malta) (Drinkwater et al., 2009) and the increasing quest for highly qualified personnel in the skill intensive sectors of the UK economy (Highly Skilled Immigration Scheme) (Casciani, 2002; Demireva, 2011). Outside the UK, this finding is in line with Hansen and Lofstrom (2001)'s findings pinpointing that highly skilled immigrants suffer little wage disdvantage.

Across men/country of origin groups it is visible that EU15 immigrants (men/women) receive higher wages relative to the UK born White (men/women) and the Eastern European men Also consistent with field literature pay asymmetry was evidenced to differ across Indian, Parkistani, Bangladeshi, Sri lankan (men) and 'Other' groups, appearing to be more disadvantaged compared to the UK born White. Evidence also point to the fact that, Sri Lankan, Irish and EU15 women were even faring better compared to UK born white women in terms of pay than it is for Eastern European compred to the reference group.

Paper Three

In terms of occupational status transitions, the evidence presented in the thesis shows that, in general, there seems to be a relative stability of immigrants' labour market integration concerning all the groups included in this thesis. In line with the cross sectional studies (see paper one and paper two conclusions), 'new' immigrants seem to be the most penalized in terms of job market integration, having the highest proportion of 'negative' transitions into deskilling occupations. This also implies

instability for those who manage to find a better job - in time; they might be forced to return to deskilling jobs. Old immigrants seem to fare better in this regard, but are not immune to change from a non-deskilling occupation to routine/ manual jobs. The empirical evidence suggests that while 'upwards' labour market mobility is achievable in the UK labour market, however this is true potentially only for a relatively small number of immigrants.

1 The effect of duration of stay on the UK.

The outcome for old immigrants is in line with previous results and the literature. This group seems well established in terms of labour market integration and even out-performing the UK born White. I believe this result provides empirical evidence to support some of the assumptions of the assimilation hypothesis (Alba & Nee, 2003; Borjas, 1995; Brubaker, 2001; Dustmann, 1996, 2000), in the sense that with more years in the UK, these immigrants have 28% increase in their average earnings compared to UK born White (Ceteris paribus).

2 The findings for 'new' immigrants also appear to be encouraging

Concomitantly, the findings for 'new' immigrants follow a similar trend to those of old immigrants, but, not to the same degree. 'New' immigrants have potentially different integration strategies – these individual strategies are also affected by the specific policies targeted at the 'new' immigrants. However, an important factor that still might have an impact on the labour market outcomes concerns different occupational networks (enclaves). A fundamental task for future research will be to integrate both qualitative and quantitative measures of socio-economic integration and labour market performance for both old and 'new' immigrants as these groups are very diverse and keep changing and adapting to an ever changing labour market. A more effective decision-making and policies aimed at creating a more inclusive and egalitarian society need to rely on more detailed information about immigrants and their experiences at arrival and during their stay.

3 Groups included in the analysis are far from being homogeneous

Based on the weighted random effects model, it is clear that there is a large amount of variance accounted for in the model (rho = 48%). Since the dependent variable is Log wage, the positive coefficients for immigrant groups in the models allow me to infer that besides the predictors included in the models, structural factors such as the duality of the labour market and the policies, namely the high skilled immigration scheme (Bhaghwati & Hanson, 2009; Casciani, 2002; Gera & Songsakul, 2007;

Hainmueller & Hiscox, 2010; Kofman & Raghuram, 2006; Mahroum, 2000; John Salt, Findlay, & Appleyard, 1989) may have a bearing in the initial integration in the labour market. Additionally, the socio-economic and political environments are very dynamic, making the labour market opportunities more precarious, *en pair* with economic restructuring processes which leave immigrants in a potentially vulnerable labour market position.

Implications for policy

The findings and discussion presented here are a preliminary contribution that does not resolve several questions advanced in previous papers, as further theoretical and empirical contributions are required. In what follows, I turn to the implications for policy.

Despite the potential of the UKHLS wave 1 data, it should be noted that these data is not sufficient to predict the distribution of the immigrants across the UK labour market. However, my results concerning the human capital integration may tentatively point to two conclusions for policy and research. First, there is a need to explore policies and practices that facilitate the employment of foreign human capital. If immigrants' human capitals have to be fully incorporated into the UK labour force, fair and consistent accreditation of immigrants' education and work experience need to start as soon as possible after the entry into the UK labour market. Second, integration networks need to be readily available to them; otherwise, many skilled immigrants will likely remain 'ostracised' (on grounds of 'new comer', 'new visible immigrant status').

The findings of the second paper have a number of important implications both for the present and future of equal pay legislation within and between occupations in the labour market and beyond. However, these findings, need to be weighed against the large number of studies mentioned in the foregoing discussions and for the UK, in particular, with annual earnings' reviews of male and female full- and part-time employees (see, for example, Bovill (2013)). As Lips (2013)'s study suggests, this would mean focusing more on the intersection between gender-normative and country of origin-societal expectations, organizational contextual factors and firm-specific decision-making frameworks. In terms of policy recommendations, the Paper Two study suggests that existing UK equal pay legislation and equal employment opportunities' policies should be differentially appraised for the

seemingly disadvantaged male and female employees from Pakistan and Bangladesh. Concentrating solely on descriptive statistics, policy redrafting of existing legislation regarding women, who are employed as civil servants and/or in low-grade positions, is also proposed as crucial in the context of the UK labour market.

The results of the third paper hold several important policy implications. One of the policy implications of this paper is that initial occupational status and earnings - do not necessarily reflect subsequent occupation and earnings. However, I suggest that policies and practices targeted at promoting socio-economic integration of immigrants' should facilitate skill recognition; credential and pre-migration human capital recognition should take into account the diverse nature of immigrants in the UK labour market. This would also imply that fair and consistent accreditation of immigrants' qualifications and integration policies need to start as early as possible after entry into the UK labour market (a point intentionally re-iterated here).

Political parties in the UK need to create the environment necessary for the acceptance of diversity on which socio-economic integration policies should be anchored. To expedite this virtuous intention, settlement packages of immigrants' human capitals, skills and experiences must be identified for all 'new' immigrants, tailored to individual needs (these could include job retraining opportunities, accessing labour market networks and information on trade unions, just to mention a few).

Implications for theory

At the end of every study, it is important that researchers take time to reflect on the work done and its contributions to the research in the field. Empirically, the first paper contributes to the comparative study of access (or lack of access) to the professional class associated with the lack of recognition of many immigrants' relevant qualifications and work experiences in the UK labour market. I acknowledge the limitations that quantitative methodologies hold, in particular the quality of the data and the associated restrictions in terms of the test of hypotheses. For this reason I acknowledge the need to combine qualitative case studies with quantitative analysis. Given immigrants' vulnerability to lack of access to the professional class, carrying face to face interviews with samples of each immigrant group members would certainly add important information that would allow the researcher to capture

measurement peculiarities, operating constraints and cultural traditions that would otherwise not be captured by quantitative research (Kennedy, 2002).

In theoretical terms, my argument is that the social sciences still have much more to offer to the development of access (or lack of access) to the professional class research. The role of institutions, governments and societies need to be incorporated in the study. In this sense, I claim that empirical sociology has several contributions to make in the understanding of access (or lack of access) to the professional class as a labour market oriented social outcome. Therefore, in terms of my contributions to this field, I believe that my findings are important to broaden the knowledge of access (or lack of access) to the professional class phenomenon. Moreover, these need to be understood in the light of decades of social theory in structures, institutions, areas of organisation and social behaviour. Therefore, there is a need to continue monitoring the distribution of educational qualifications across immigrants (relative to UK–born White), with emphasis on the current costs of educational endeavours alongside neoliberal global labour market demands. Future work, depending on the availability of structural data, should also focus on structural, institutional and organizational mechanisms sponsoring access (or lack of access) to the professional class in the UK labour market and beyond.

In tandem with a summary of the results and policy recommendations presented above, studies that examine different company policies covering, for example, multiple segmented assimilation career paths, provision for work-life balance measures and access to occupational mentoring schemes across diverse immigrant groups resulting in pay differentials at the workplace, are for a long time overdue. Since the distribution of female and male employees across occupations is disproportionate (based on descriptive statistics and reviewed empirical literature) the results of this study add incremental evidence: the levels of seniority within occupations and earnings are still uneven concerning male and female employees, regardless of country of origin. In this context, it is therefore proposed that future detailed empirical studies that provide a fine-grained approach to pay asymmetry within firms or organizations, as well as dynamic statistical approaches (dynamic structural modelling), are increasingly needed. Such approaches to research would in essence dispel the assumption that, *ex ante,* all employees, regardless of their country of origin, are equally committed to the integration in the labour force; hence, ‘new’ research designs, presumably based on two-level equation methodology, are

recommended (for example in Rabe-Hesketh, Skrondal, and Pickles (2004, pp. 169-188).

Additionally, developments of assimilation theories on socio-economic integration are necessary and I think a fruitful approach should connect diverse perspectives from political economy to human rights and sociology. The way culturally diverse immigrants react, adapt and respond to neoliberal labour market demands is not sufficiently explored analytically within the UK labour market and beyond. The third paper provides a brief analysis of the unevenness of immigrants' occupational status transitions and pay trajectories for country of origin groups, noting also gender differences within and across groups. In order to expand the empirical analysis of the earnings trajectories, a comparative analysis of gendered socio-economic assimilation trajectories of migrants' earnings relative to UK–born White in the UK labour market should be considered and developed. Morawska (2009, p. 244,p.244) posits that taking a gender centred approach should take priority in conferring

> [a]ttention to the gendered nature of social phenomena [which] does not only mean [carrying]investigations of the sociodemographic profiles of male and female migrants in the countries/locations where they settle , and of economic, political, and cultural contexts shaping men's and women's gender-specific orientations and activities."

Concerning the UKHLS data, it would be ideal to complement these data with administrative data using a retrospective approach—an approach currently used in the Canada on the Longitudinal Immigration Data Base (IMDB)—such task is relatively cheap and cost effective (Black, Fielding, King, Skeldon, & Tiemoko, 2003). However, it would require innovative ways to approach the data linkage in order to capture important details (IMDB, for an example does not distinguish part time and full time jobs). The implications for future developments of the UKHLS are also associated with the incorporation of administrative records of 'new' immigrants— this will contribute to the aim of making the UKHLS data representative of all 'new' immigrants (ibid). In line with the Ethnic Boost sample approach, such initiative would need to be extended to what I would call a New Immigrants Boost Cohort Approach (NIBCA)—i.e., generating a longitudinal panel of immigrants based on the existing panel surveys, oversampling immigrants groups, by year of entry into the UK and country of origin. This would help ensure a large enough sample of immigrants in UKHLS, opening 'new' possibilities for panel analysis. In my perspective, such an approach would provide a highly valuable

source for the UK authorities and other stakeholders interested in the current changing socio-economic climate, as well as relevant insights on immigrants' integration process, which could potentially help dispel public stereotypes of the immigrants' 'burden' in the UK and beyond (ibid). In fact, this lack of data hinders research and policy development to a great extent. More importantly to reduce the problem of attrition in the UKHLS, administrative data could be coupled with the current dataset— if the contact details of the immigrants at the wave entry period are available, it could potentially be possible to conduct more interviews and link these data with the data currently available.

In my perspective, the issues raised and discussed in this thesis represent significant challenges that should be addressed in future research. They can also be seen as incentives to persuade scholars and policy makers of the importance of understanding the mechanisms influencing the processes of immigrant socio-economic integration.

9. REFERENCES

Alba, R., & Nee, V. (2003). Remaking the American Mainstream: Assimilation and contemporary immigration. Cambridge: Harvard University Press.

Allum, N., & Eroglu-Hawksworth, S. (Producer). (2011, 27/06/2011). Quantitative Analysis: Univariate to Multivariate (SC504). *Outline of Lectures and Readings*. [Course Module Material]

Andreß, H.-J., Golsch, K., & Schmidt, A. W. (2013). *Applied panel data analysis for economic and social surveys*: Springer Science & Business Media.

Arrow, K. J. (1973). Higher education as a filter. *Journal of public economics, 2*(3), 193-216.

Baltagi, B. (2001). *Econometric Analysis of Panel Data*: John Wiley and sons.

Barry, C. (1980). The Earnings of White and Coloured Male Immigrants in Britain. *Economica, 47*, 81-87.

Berthoud, R. (2000). Ethnic Employment penalties in Britain. *Journal of ethnic and migration studies, 26*(3), 389-416.

Bhaghwati, J., & Hanson, G. (Eds.). (2009). *Skilled Immigration Today; Prospects, Problems and Policies*. Columbia and Oxford: Oxford University Press.

Black, R., Fielding, T., King, R., Skeldon, R., & Tiemoko, R. (2003). Longitudinal Studies: An insight into current studies and the social and economic outcomes for migrants.

Borjas, G. (1995). Assimilation and changes in cohort quality revisited: what happened to immigrant earnings in the 1980s? *Journal of Labor Economics, 13*(2), 201-245.

Bovill, D. (2013). *Patterns of Pay: Results from the Annual Survey of Hours and Earnings, 1997 to 2012*. London: Office for National Statistics.

Brubaker, R. (2001). The return of Assimilation? Changing Perspectives on Immigration and its sequels in France, Germany and United States. *Ethnic and Racial Studies, 24*(4), 531-548.

Bryan, M. (2015). *Panel Data Analysis of Microdata : Analysis & Collection*. University of Essex. Essex Summer School in Social Sciences Data.

Brynin, M., & Guveli, A. (2011). *Understanding the Ethnicity Pay Gap in Britain*. Retrieved from Colchester:

Cappellari, L., & Jenkins, S. (2004). *Modelling Low Pay Transition Probabilities , Accounting For panel Attrition, Non Response, And Initial Conditions*. ISER Working Paper, (2004-08). Institute for Social and Economic Research.

Casciani, D. (2002, 21 November 2011). Immigration: Fact or hype?

, BBC News. *BBC News Online Community Affairs*.

Clarke, J., & Salt, J. (2003). *ONS: Labour Market trends November 2003 - Work Permits and foreign labour in the*

UK: a statistical review. London: Migration Research Unit, UCL.

Clarke, J., & Salt, J. (2004). *A Point System For Work Permits, Hansard, column 88w*. London: UCL and Hansard.

Cox, N. J. (2002). Speaking Stata: How to move step by step. *Stata J, 2*, 86-102.

Demireva, N. (2011). New migrants in the UK: employment patterns and occupational attainment. *Journal of ethnic and migration studies, 37*(4), 637-655.

Douglas, M., & Hirst, D. (1998). From escalator to hourglass: Changes in the US occupational wage structure 1949–1989. *Social Science Research, 27*(1), 51-71.

Drinkwater, S., Eade, J., & Garapich, M. (2009). Poles apart? EU enlargement and the labour market outcomes of immigrants in the United Kingdom. *International Migration, 47*(1), 161-190.

Dustmann, C. (1996). The social assimilation of immigrants. *Journal of Population Economics, 9*(1), 37-54.

Dustmann, C. (2000). Temporary Migration and economic assimilation. *Swedish Economic Policy Review, 7*, 213-244.

Dustmann, C., Fabbri, F., Preston, I., & Wadsworth, J. (2003). *Labour Market Performance of Immigrants in the UK labour Market*. Retrieved from London:

Ewers, M. C. (2007). Migrants, markets and multinationals: competition among world cities for the highly skilled. *Geo Journal, 68*(2/3), 119-130. doi:10.2307/41148149

Gelman, A., & Hill, J. (2009). *Data Analysis Using Regression and Multilevel / Hierarchical Models.* . Cambridge, New York, Melbourne, Cape Town, Singapore , Sao Paulo, Delhi: Cambridge University Press.

Gera, S., & Songsakul, T. (2007). Benchmarking Canada's Performance in the Global Competition for Mobile Talent. *Canadian Public Policy / Analyse de Politiques, 33*(1), 63-84. doi:10.2307/30032513

Green., D. (1999). "Immigrant Occupational Attainment: Assimilation and Mobility over Time". *Labour Economics, 17*(1), 49-79.

Guierrez, R. (2008). *Tricks of the trade: getting the most out of xtmixed.* Paper presented at the UK Stata Users Group Meetings.

Hainmueller, J., & Hiscox, M. J. (2010). Attitudes toward Highly Skilled and Low-skilled Immigration: Evidence from a Survey Experiment. *The American Political Science Review, 104*(1), 61-84. doi:10.2307/27798540

Hansen, J., & Lofstrom, M. (2001). The dynamics of immigrant welfare and labor market behavior.

Hardin , J. (1997). Weighted estimation and xtgee. *StataCorp*.

Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica: Journal of the Econometric Society*, 1251-1271.

Hill, R. C., & Fujita, K. (2003). The nested city: introduction. *Urban Studies, 40*(2), 207-217.

Kambourov, G., & Manovskii, I. (2008). Rising Occupational and Industry mobility in the United States: 1968-97. *International Economic Review, 49*(1), 41-79.

Kambourov, G., & Manovskii, I. (2009). Occupational Mobility and Wage Inequality. *Review of Economic Studies, 76*(2), 731-759.

Kennedy, P. E. (2002). Sinning in the basement: What are the rules? The ten commandments of applied econometrics. *Journal of Economic Surveys, 16*(4), 569-589.

Knies, G. (Ed.) (2014). *Understanding Society –UK Household Longitudinal Study: Wave 1-4, 2009-2013, User Manual*. Colchester University of Essex.

Kofman, E., & Raghuram, P. (2006). Gender and global labour migrations: incorporating skilled workers. *Antipode, 38*(2), 282-303.

Liang, K.-Y., & Zeger, S. L. (1986). Longitudinal data analysis using generalized linear models. *Biometrika, 73*(1), 13-22.

Lips, H. M. (2013). The gender pay gap: Challenging the rationalizations. Perceived equity, discrimination, and the limits of human capital models. *Sex Roles, 68*(3-4), 169-185.

Lynn, P., & Kaminska, O. (2010). *Weighting Strategy for Understanding Society*. Working Paper Series, (2010-05). Institute for social and Economic Research

Mahroum, S. (2000). Highly skilled globetrotters: mapping the international migration of human capital. *R&D Management, 30*(1), 23-32.

Mitchell, M. N. (2012). Interpreting and visualizing regression models using Stata. *Stata Press books*.

Morawska, E. (2007). *International Migration: Its Various Mechanisms and Different Theories, paper no 1650-5743*. Retrieved from Sweden:

Morawska, E. (2009). A Sociology of Migration *(Re) Making Multifaceted America*. England: Palgrave Macmillan.

Myers, D., & Cranford, C. J. (1998). Temporal differentiation in the occupational mobility of immigrant and native-born Latina workers. *American Sociological Review*, 68-93.

Parrado, E., Caner, A., & Wolff, E. (2007). Occupational and and Industrial mobility in the United States. *Labour Economics, 14*, 435-455.

Pedace, R. (2000). *Immigration, Labor Market Mobility, and the Earnings of Native-born Workers: An Occupational Segmentation Approach*. Retrieved from

Perlmann, J., & Waldinger, R. (1997). Second generation decline? Children of immigrants, past and present-a reconsideration. *International Migration Review*, 893-922.

Pesaran, M. H. (2004). General diagnostic tests for cross section dependence in panels.

Pesaran, M. H., Ullah, A., & Yamagata, T. (2008). A bias-adjusted LM test of error cross-section independence. *The Econometrics Journal, 11*(1), 105-127.

Porter, J. (1968). The Future of Upward Mobility. *American Sociological Review, 33*(1), 5-19. doi:10.2307/2092236

Portes, A., & Rumbaut, G. R. (1996). Immigrants in America, A Potrait. Berkeley: University of Calfornia Press

Portes, A., & Rumbaut, G. R. (2001). Legacies: The story of the Immigrant second Generation. Berkeley: University of Calfornia Press.

Portes, A., & Zhou, M. (1993). The New Second Generation: Segmented Assimilation and its Variants. *The ANNALS of the american Academy of Political and Social Science, 530, Interminority Affairs in the U.S.:Pluralism at Crossroads*, 74-96.

Psacharopoulos, G. (1977). Family Background, education and achievement: a path model of earnings determinants in the UK and some alternatives. *British Journal of Sociology*, 321-335.

Rabe-Hesketh, S., Skrondal, A., & Pickles, A. (2004). Generalized multilevel structural equation modeling. *Psychometrika, 69*(2), 167-190.

Rollason, N. (2002). International mobility of highly skilled workers: The UK perspective. *International mobility of the highly skilled*, 327-342.

Salt, J., Findlay, A., & Appleyard, R. (1989). International migration of highly skilled manpower. *The impact of international migration on Developing Countries, OECD: Paris*, 159-180.

Semykina, A., & Wooldridge, J. M. (2010). Estimating panel data models in the presence of endogeneity and selection. *Journal of Econometrics, 157*(2), 375-380.

StataCorp. (2014). Stata: Release 11. Statistical Software. . Texas: College Station, TX: StataCorp LP.

Torres-Reyna, O. (2010). Panel Data Analysis, Fixed & Random Effects (using Stata 10. x)(Ver. 4.1). *Panel 101, Princeton University*.

Wooldridge, J. (2010). *Econometric analysis of cross section and panel data*: MIT press.

Wooldridge, J. (2012). *Introductory econometrics: A modern approach*: Cengage Learning.

Zhou, & Lee, J. (2008). Success attained, deterred, denied: divergent pathways to social mobility in Los Angeles's new second generation. *The ANNALS of the american Academy of Political and Social Science, 620*(1), 37-61.