

# Migrant Women in Male-Dominated Sectors of the Labour Market: A Research Agenda

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## ABSTRACT

**There is a growing literature on female labour migration, but much of this focuses on women who move to work in labour-market sectors where a large proportion of workers are women. This paper argues that there has been much less study of women who migrate to work in male-dominated sectors of the labour market, and explores the nature of this lacuna within research on female migration. It then highlights the increasing presence of women migrants in the ICT sector as one example of an area that has received little study. Finally, the paper explores some reasons why a study of female migrant's experiences in male-dominated sectors of the labour market is important, and what it can add to existing research on female migration more generally. In particular, it urges us to view gender as it intersects and overlaps with other social divisions to produce complex landscapes of female mobility. Copyright © 2007 John Wiley & Sons, Ltd.**

*Received 29 October 2006; revised 24 July 2007; accepted 1 August 2007*

**Keywords:** gender; migration; male-dominated sectors; labour market; ICT; India

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## BEYOND FEMININITIES: MIGRANT WOMEN IN MALE-DOMINATED SECTORS OF THE LABOUR MARKET

In recent years, the great increase in female labour migration, particularly those moving to take up jobs as domestic workers, sex workers and nurses, has excited much interest amongst those researching migration (UNIFEM, 2000; Ehrenreich and Hochschild, 2003; Castles and Miller, 2003). This has complemented the long-standing interest amongst feminist researchers on the experiences of female family migrants (Phizacklea, 1983; Salaff and Greve, 2004). Both sets of literature ascribe women's mobility to their participation in feminised roles, as wives of primary male migrants, or as women who perform socially reproductive tasks within a range of highly feminised sectors of the labour market.<sup>1</sup> Feminised gender roles therefore appear to be an important part of women's migratory experience, but also an essential lens through which women's migration is considered by researchers.<sup>2</sup> In this paper, I aim to expand current literature on migrant women by exploring some issues that emerge when examining their presence in a male-dominated sector of the labour market – information and communication technology (ICT). The paper does not provide an empirical overview of gender issues as they pertain to female migrant ICT workers, but rather it interrogates the frames within which female migration is understood.

The rest of the paper is divided into three substantive parts. The first part provides a brief overview of how current literature on female migration

privileges feminised gender roles as the route to mobility. The following part suggests that an increasing number of women are migrating because of their involvement in male-dominated sectors of the labour market, such as ICT. The third part suggests that women who migrate in male-dominated sectors may have different experiences from those in female-dominated sectors. As such, they raise new questions for research on female migration.<sup>3</sup>

#### FEMALE MIGRATION: THE FEMINISING IMPERATIVE IN CURRENT RESEARCH

The labour-market participation of female family migrants has a long history (Phizacklea, 1983). In this research, familial connections and domestic arrangements provide the route of entry into the debate, although they do not limit the terms in which their migration is understood. Thus, excellent work by feminist researchers has highlighted that women who migrate as wives and mothers play a part in their non-feminised roles, as factory workers, entrepreneurs and activists (see e.g. Morokvasic, 1984). However, more recently there has been a return to analysing women's experiences of family migration primarily through their mode of entry, through their role as wives of principal migrants. This is because, for many women, their feminine gender roles seem too frequently to underwrite the conditions in which migration occurs (Boyd and Grieco, 2003). For others, migration ends up becoming a feminising process (Ho, 2006: 503) with an escalation of their roles as wives and mothers. Thus, even where women enter a country as skilled migrants within a skilled migratory regime, there is considerable evidence that they are often deskilled (Salaff and Greve, 2003; Man, 2004) so that migrant women take on much greater domestic responsibilities in destination countries.

This analytical lens is equally clear in the much larger (and rapidly growing) literature on female labour migration. Feminist researchers trying to come to grips with the conditions that stimulate female labour<sup>4</sup> migration have examined the ways in which pressures both in the sending and the receiving countries have led to a growth in numbers of women migrating, the diversity of mechanisms through which they move, and the complex social and economic arrangements they move into as well as leave behind (Parreñas,

2001; Lan, 2003). They argue that these processes are played out at a number of scales, from the individual to the familial, the national through to the international, and that processes at all these levels overlap and intersect to shape migration (Sassen, 2003).

However, here too it is their gender roles that condition women's entry into a country and thus into debates on migration. For instance, gender appears to be a guiding principle in determining the nature of work (domestic work, nursing) and the terms of incorporation into both the labour market and the receiving country. Thus much of the literature on female labour migrants focuses on their experiences within domestic work (Anderson, 2000), the social care sector (McGregor, 2007) and sex work (Bales, 2003; O'Connell Davidson and Anderson, 2003; O'Connell Davidson, 2005; Agustin, 2006), the sectors that account for most female labour migrant's mobility. More recently there has also been a flurry of interest in female migrants' contributions to the cleaning, catering and hospitality industries (Datta *et al.*, 2006; McIlwaine *et al.*, 2006) as migrant women's presence in those sectors has become more significant. As Schrover *et al.* (2007) argue, these sectors have come to operate as occupational niches for migrant women; they offer opportunities for mobility and for work in the post-migration scenario. It is important to make clear here that this does not mean that immigrants dominate the sector.

These lesser-skilled sectors of high concentrations of migrant women have long been the focus of attention for migration researchers interested in the experiences of female migrants, leading Kofman (2000) to argue that skilled migrant women have been invisible in migration research. However, more recently this lacuna has been addressed with a rapid growth in the volume of literature on the migration of nurses (George, 2000; Allen and Larsen, 2003; Buchan *et al.*, 2003; Ball, 2004; Kingma, 2006) and care workers, who possess, and indeed require, a range of skills in order to migrate. For instance, there has been much debate about the extent to which nurse mobility is a loss to the countries and health systems they leave behind, while at the same time, the inadequate recognition of their skills has meant that they are often deskilled in the countries of destination (Allen and Larsen, 2003). A large human resource literature has therefore

built up in trying to ensure that nurses are better 'integrated' in the health sectors they enter (Winkelmann-Gleed, 2006). Within the care sector, too, there has been considerable concern about the devaluing of skills that migrants bring with them and deploy within the labour markets of receiving countries (McGregor, 2007). This devaluing of skills is not limited to female migrants. Male migrants too are often employed in jobs well below their skill level. They may also have high representation in some sectors which are usually dominated by women. Thus McIlwaine *et al.* (2006: 9) suggest that 'Black African men were concentrated in the "feminised" cleaning and care sectors, comprising 80% of all male workers cleaning on the London Underground, over half of all male care workers (57%) and just under half of all general cleaners (47%)'. However, in this paper I restrict my analysis to research on the experiences of female migrants.

What is still largely missing is any recognition of the issues facing women migrants who work in male-dominated sectors of the labour market. For example, although there is much discussion of the movement of health workers (usually posited as brain drain), in practice most of this focuses on the experiences of nurses, a sector which is overwhelmingly populated by women (Buchan *et al.*, 2003; Allan and Larsen, 2003; Ray *et al.*, 2006; but see for instance, Findlay *et al.*, 1994). There is much less attention paid to doctors, and where migrant doctors' experiences are analysed, gender issues appear to disappear off the radar (but see Raghuram, 2003). As women form a much smaller part of the overall stream of migrant doctors, there has been little discussion of issues facing this particular group.

It appears that it is neither the skills they bring with them, nor the broad occupational sectors they inhabit, but rather the importance of migrants in sectors where women predominate that has led to academic interest and policy formulation on female labour migrants. Immigrant women in female occupational niches, that is, those employed in sectors with high workforce concentrations of women (Blackburn and Jarman, 2005), have come to be the subjects of most studies. Women who enter male-dominated sectors of the labour market, however, seem to be relatively neglected (but see Ackers, 2005). Deep-seated notions of appropriate female work seem to have played a significant role not only in

shaping female migration streams (Mahler and Pessar, 2006) but also migration research.

This paper argues that this is an important lacuna in current research. Towards this, the next section highlights why ICT (information and communication technology) may be an appropriate sector through which to draw out some of the issues faced by migrant women in male-dominated sectors.<sup>5</sup> It suggests that this occupational sector has been an important one for routing migration. It has also been male-dominated both for non-migrants and migrants, so that the overall gender division in this occupational sector seems to be weighted towards men. However, women have a small, and in some cases growing, presence within the sector, as will be shown below.

#### ICT AS A SITE FOR INTERROGATING FEMALE MIGRANTS IN A MALE-DOMINATED OCCUPATIONAL SECTOR

##### Migration and ICT

The recent upturn in female labour migration has occurred alongside (and separately from) a growth in the number of migrant ICT workers around the world. The volatility of the sector and rapidity of changes within it mean that a flexible workforce is at a premium, so that the sector is increasingly dependent on migrant labour. The relatively unregulated operation of the ICT market, with minimal professional or state controls of accreditation, has facilitated this mobility (Xiang, 2001; Khadria, 2004). Unlike many other skilled professions, ICT workers are assessed for their technical skills rather than qualifications or accreditation. At the same time, migrant ICT professionals (Saxenian, 2000; Khadria, 2001) have come to be seen as key actors in the new 'knowledge economy', and as agents of globalisation whose movement is tied to the rapid growth in the movement of goods, services, information and capital. Between 1995 and 2000, employment in the ICT sector amongst the OECD countries grew by more than 3 million – an average annual growth rate of over 4.3% a year, more than three times that of overall business sector employment. ICT services were the main driver of employment growth (OECD, 2003: 12).

The rhetoric of the 'knowledge society' and the assumed role of ICTs in shaping such a society

has meant that many countries have altered their immigration regulations in order to foster the mobility of ICT workers. They have tried to fill their ICT skills gaps through selective and preferential admission of ICT workers. The literature has moved away from representing circulation of knowledge workers as a loss to the sending countries, and instead views circulation as important to contemporary global processes (see Ackers, 2005, for a discussion on how gender issues play out in this literature).

Thus, in many industrialised countries, especially between 1997 and 2001, there were large increases in the number of entry permits issued to this sector (Iredale, 2001; Khadria, 2001). In the UK the new proposed scheme of migration set out in the White Papers *Selective Admission: Making Migration Work for Britain* (Home Office, 2005) and *A Points-based System: Making Migration Work for Britain* (Home Office, 2006), will permit ICT professionals, especially those with management skills, to enter and remain in the UK, as they will fall into tier 1 of the new schema. Tier 2, a version of the old work permit system, may be the more common route of entry for those without managerial qualifications and experience.

In Germany the green card scheme operational between 2000 and 2003 particularly targeted ICT workers by offering quicker processing and an easier provision of entry visas for workers in this shortage sector, although this was largely not taken up (Meijering and van Hoven, 2003). In the US the number of H-1B petitions approved for workers in computer-related occupations increased by almost 11%, from 75,100 in 2002 to 83,100 in 2003 (about 39% of all H1-B visas that were awarded). The H1-B is a temporary work permit issued to professionals in specialist occupations who have the equivalent of a US baccalaureate qualification. In effect, this has been an important route of entry for skilled professionals, especially for those in the ICT sector. They remain the largest occupational category amongst H1-B workers (Office of Immigration Statistics, 2004: 11). In Australia too there has been a large intake of migrant ICT workers (Voigt-Graf and Khoo, 2004; DIMIA, 2006), and although since 2002 computing has not been on the list of migration occupations in demand, in 2004–05 it still remained the top occupation of skilled migrants prior to moving to Australia. Computing is the

Table 1. Australia: computing professionals among skilled principal entrants and family entrants.

Year	Skilled principal entrants	Family entrants
2001	8,274	1113
2002	4,372	382
2003	3,410	467
2004	11,870	689
2005	7,500	480

Source: Tables produced by DIMIA (2006).

top occupation amongst skilled Australian sponsored and skilled independent migrants, but also the sixth most common occupation amongst those who entered through the family stream (DIMIA, 2006: 82; Table 1). It also accounts for a number of entrants in the 457 subclass which is reserved for temporary workers (Khoo *et al.*, 2007). Between 1996 and 2000, computing was the top intended profession for immigrants who landed in Canada (Citizenship and Immigration Canada, 2003). Canada still has in place the Canada Information Technology Professionals Software Program, first established in 2002 to respond to shortages of specific highly skilled workers in the ICT sector. In 2004 a total of 1221 workers arrived through this scheme, and stock figures indicate that about 2000 were still in Canada under this programme. The majority of workers in the programme originated from India, with smaller proportions coming from France, the UK and the US (Citizenship and Immigration Canada, 2005).<sup>6</sup> ICT, then, continues to be a significant occupation for immigrants entering as skilled migrants into many of the major 'receiving states'.

This migration may have different temporalities, with some H1-B workers in the US and work-permit holders in the UK, for instance, entering the country for short periods ranging from a few weeks to a few months. Others may use their technical competencies in order to enter more permanent migration streams. Still others may move as family migrants but are able to use their ICT skills in their new countries. What is significant is that as more and more countries step towards selective inclusion of skilled migrants, the gender breakdown of skilled migrants and the occupations they are engaged in becomes increasingly important for migration researchers to analyse.

## Women and ICT

The ICT sector (in its broadest sense) remains male-dominated around the world. For instance, in 2003 in the UK, based on the Labour Force Survey, it can be estimated that women accounted for 22% of all employment in computer and related activities, about 12% of all ICT professionals, and about the same percentage of software engineers (Equal Opportunities Commission, 2004: 69–70). Between 1995 and 2002, the number of women in ICT jobs also declined from 25% to 22%.<sup>7</sup> European women only accounted for 6% of networking professionals in 2001 (Peters *et al.*, 2002: xiv; see also Valenduc *et al.*, 2004), and in Germany the number of women in the software engineering sector halved through the 1990s. In the US too there has been a decrease in the proportion of women employed in this industry over the past decade, so that the proportion of female computer/mathematical scientists employed in the country has dropped from 33.7% in 1994 to 27.0% in 2004, of computer programmers from 29% to 27% in the same period, and of computer system analysts from 31% in 1994 to just over 10% in 2002 (calculated from National Science Foundation, 2007: 221–3).<sup>8</sup> The long working hours, the difficulties in undertaking part-time work, and the importance of client-interfacing in order to have career mobility, all influence women's participation in particular parts of the ICT sector, and whether these jobs are taken up in the private or public sector (Panteli *et al.*, 1999; Diamond and Whitehouse, 2005; Upadhy, 2005; Webster, 2005).<sup>9</sup>

More recently, the impact of the recession in ICT labour markets seems to have led to a more sustained decline in the participation of female ICT workers than among men, although the impact on gender ratios has been more acute in some countries than in others (Platman and Taylor, 2004). In India, for instance, there is some evidence that the number of women in ICT is increasing, even in the higher end of software engineering. According to a NASSCOM study (National Association of Software and Service Companies, the 'premier' trade body and chamber of commerce of India's ICT software and service industry), 24% of workers in the Indian software industry were women, and this is expected to rise to 35% by 2007 (NASSCOM, 2005). These percentages are much higher for

women employed in the Information Technology Enabled Services (ITES)/Business Process Outsourcing (BPO) space at around 69%.<sup>10</sup> These patterns reflect the much higher level of optimism about the possibilities that ICT holds for women in terms of gender in the workplace (Margolis *et al.*, 2000). This must, at least partially, be set within the wider context of a history of underemployment and limited job opportunities that have faced Indian male and female graduates for some considerable time, as well as wider limitations in women's access to economic opportunities within the context of a patrifocal society. However, computing professions do appear to have offered more gender-equitable work opportunities than other forms of engineering. In India even critical writers like Mitter (2000) and Gayathri (Gayathri and Anthony, 2002) feel that ICT offers a less gender-oppressive work space than many other sectors of the labour market. Thus, in a detailed study of work culture in the ICT industry, Upadhy and Vasavi (2006) suggested that:

'IT is regarded as being a new avenue of employment that is particularly woman-friendly, and because it is "knowledge work" there is no scope for discrimination on the basis of gender. The flexibility of timings and work processes (including the possibility of home-based teleworking) are also supposed to encourage women to enter this sector. However, while there is a larger proportion of women working in IT compared to many other sectors, and the industry has opened up an avenue for the employment of female engineering graduates who might otherwise not have been able to find jobs in traditional industries, there are still several gender-related issues that need to be highlighted.' (Upadhy and Vasavi, 2006: 90–91)

Similarly, Vijayabaskar and Gayathri (2003) highlighted the potential of ICT work to alter gendered working relations and qualitatively enrich work for women, 'thereby undermining traditional gender based disparities within the workplace' (p. 2363; see also Arun and Arun, 2002; van der Veer, 2005). However, as Upadhy and Vasavi note in the quote above, gender issues may simply be taking different forms within this sector.

It appears then that women's entry to ICT professions varies following a range of factors, such

as type of ICT work, nationality, and so on. In the highly mobile parts of the sector, these differential gendered participation rates must also be reflected within migrant streams, an issue explored below.

### Women, Migration and ICT

Women form a small but significant minority amongst migrant ICT professionals entering any of the major countries of immigration in any year. In Australia in 2005, women formed between a quarter and a third of the total number of computing professionals entering through the major skilled migration streams, or as family migrants (DIMIA, 2006: 82; Tables 1, 2 and 6). In Canada, between 1998 and 2000 women formed about a fifth of all computer programmers and systems analysts entering as principal applicants within the skilled stream, but only about 10% of computer engineers within the same period (Citizenship and Immigration Canada, 2003; Tables 3 and 4).

However, the small proportions of women must be set within the context of large (and in most countries until recently, rapidly rising) total numbers entering through this category. For instance, Table 5 suggests that in the context of the UK, the last seven years have seen a rapid

Table 2. Arrivals in Australia: computing professionals by gender.

Year	Male arrivals	Female arrivals	Total
2000–01	21,170	6,749	27,919
2001–02	10,640	3,253	13,893
2002–03	9,997	2,804	12,801
2003–04	82,154	23,365	105,519
2004–05	16,610	8,778	25,388

Source: Tables produced by DIMIA (2006).

Table 3. Skilled workers, principal applicants in Canada – computer systems analysts and computer programmers.

Year	Men	Women	Total	Women as % of total
1998	4364	1129	5,493	20.5%
1999	6380	1445	7,825	18.5%
2000	8209	2055	10,264	20.2%

Source: Citizenship and Immigration Canada (2003).

growth in ICT professionals amongst work-permit holders, so that ICT forms the seventh largest industry even among female work-permit holders in the UK. The increasing numbers of female migrants in the ICT sector, seen alongside their small proportion of the total numbers moving to take up jobs in the sector, makes it an appropriate and rather useful lens through which to interrogate the frameworks we use in analysing the experiences of female labour migrants working in male-dominated sectors.

Moreover, recognising women's presence in the ICT sector also brings them into narratives of mobility of people who are seen as smoothing the flow of capital and knowledge, and providing a competitive edge within the global economy (OECD, 2003). As in the larger literature on highly skilled migration in the privatised, corporatised sector, there is relatively little analysis of migrant women's presence among migrant ICT workers. With few exceptions (Saxenian, 2000; Hyde, 2004; Shih, 2006), the fact that women too may inhabit this landscape of hypermobility or participate in the knowledge economy (Kofman, 2004a) is often

Table 4. Skilled workers principal applicants in Canada – computer engineers.

Year	Men	Women	Total	Women as % of total
1998	500	55	555	10.0%
1999	936	132	1068	12.4%
2000	1254	178	1432	12.4%

Source: Citizenship and Immigration Canada (2003).

Table 5. Gender breakdown of work permits awarded in the ICT sector – UK.

Year	Female	Male	Total
1995	216	1,324	540
1996	348	2,211	2,559
1997	477	3,397	3,874
1998	781	5,656	6,437
1999	1,113	6,776	7,889
2000	2,878	15,460	18,338
2001	3,310	20,723	24,033
2002	2,938	19,735	22,673
2003	2,497	17,251	19,748
2004	2,497	15,185	17,682
Total	17,055	107,718	124,773

Source: Tables produced by Workpermits UK, 2004.

ignored. Rather, in most analysis of ICT labour markets, migration and gender are kept separate or even counterposed. Thus, it is usually argued that increasing participation of women in ICT can limit dependence on migrant workers (European Commission, 2004; National Science Foundation, 2007). In this narrative, women and migrants are considered as exclusive categories; women are assumed to be non-migrants while migrants are assumed to be men, leaving little room for exploring the experiences of female migrant ICT workers (Slade, 2003). However, focusing on such migrants can not only expand our understanding of female migration, but also alter the questions we ask of migrants working in feminised sectors – an issue to which I turn in the next section.

#### THE QUESTIONS THAT FEMALE MIGRANTS IN MALE-DOMINATED SECTORS POSE: TOWARDS A RESEARCH AGENDA

The large numbers of migrant women entering as nurses (Winkelmann-Gleed, 2006), teachers (Voigt-Graf, 2003), care workers (McGregor, 2007), domestic workers (Anderson, 2000), sex workers (Agustin, 2003, 2006) and family migrants (Kofman, 2004b) suggests that the emphasis on these sectors is undoubtedly justified (Kofman *et al.*, 2005). However, such an emphasis also shapes the kinds of questions we ask.

Focusing on the experiences of female migrants in male-dominated sectors poses a series of questions that are rarely asked about migrant women. Bringing migrant women in these sectors into current debates adds texture to the feminist migration agenda. For one, it shakes up the stories around work and organisation to which we have become accustomed. Recognising the gamut of work relations in which women may be engaged, and the different ways in which they may be incorporated in destination countries, expands the vectors that one may consider in interrogating female migration, and gives us a much fuller understanding of how gender relations play out in the workplace. Secondly, it brings migrant women into discussions of career trajectories and the impact of gender in reshaping career aspirations in ways that have not yet been done thus far. It expands migrant women's understandings of work beyond those of survival

to include issues such as gendered limits to career progression. Thirdly, focusing on women in male-dominated sectors may help prise open the gender biases within supposedly gender-neutral processes such as immigration regulations. Finally, focusing on women in male-dominated sectors can add further variables to the study of intersectionality. In particular, the importance of class may be seen to mute or to refract gender in ways that have not so far been interrogated. I will expand on these below.

Firstly, the number of women and the roles that women perform in the ICT sector can depend on a range of factors, such as gendered perceptions of technology, types and nature of ICT training offered (see, for instance, Trauth, 2002, for an interesting example) and so on. These gendered notions are then transposed across national boundaries through the migration of men and women who move from their own countries (off-shore) to on-site locations where they work with clients and back again. Migrant men and women also come into contact with the gendered cultures of ICT participation in the countries to which they move, so that male and female migrant workers end up displaying, resisting and organising gendered work relations both on-site and offshore.<sup>11</sup> They bring their offshore relations with them on-site (when they move to work in the clients' countries, for instance), altering them in the process of working in small groups on-site both with their national compatriots but also with colleagues in the client firms. For instance, Poster and Prasad (2005) identified some of the vectors that influence work–family relations in Indian high-tech firms and compared these with those at work in one multinational firm based in the US and one in India. The bureaucratic control of work and the ways in which family and work are kept separate in India through a range of institutional and social methods, has meant that the way in which gender relations are played out in the workplace there differ from how they are played out in the US. These gendered work relations are also transferred across borders and inform practices (albeit differentially) in different sites, particularly as ownership of the organisation intersects with work practices to produce continuously changing 'working cultures' that migrants occupy, displace and transform. In tracing the increasing presence of women in male-dominated migrant labour markets, one

Table 6. Arrivals of computing professionals in Australia: top 10 countries of citizenship (July 2005 to April 2006).

Country of citizenship	Male arrivals	Female arrivals	Total
India	2,706	771	3,477
UK	2,128	326	2,454
Australia	1,111	218	1,329
China (excludes SARS and Taiwan)	920	339	1,259
Malaysia	372	218	590
Ireland	394	134	528
Singapore	336	161	497
USA	331	92	423
Indonesia	286	135	421
South Africa	273	125	398
New Zealand	280	50	330
Rest of the countries	2,953	981	3,934
Total	12,090	3,550	15,640

Source: Tables produced by DIMIA (2006).

could also seek to recognise the specificities of how their identities are negotiated in relation to those of migrant men and non-migrant women and men with whom they work, as peers, as supervisors, and subordinates. Yet there is little space in the literature on migrant women for thinking through the relationship between migrant women and male colleagues, or even men whom migrant women have to manage in their destination countries.

Moreover, given the fact that it is argued that women who do succeed in the new masculinised economies are often those who assume masculine ways of being (Reay, 2004: 31), we have to ask ourselves what implications does the participation of migrant women in these masculinised economies have for the ways in which we think about and understand migrant women's femininities? Can an emphasis on the gendered roles that women migrants adopt in the labour market lead to a mis-recognition of gender issues, an overemphasis on femininities? And does participation in such professions alter the ways in which women have to 'manage' these femininities as they intersect with other axes of identity, such as ethnicity? These questions may also be reversed in the case of men who enter occupations that have high levels of female concentration (Lupton, 2006).

Secondly, one might want to challenge the exclusivity of discourses of career satisfaction, career aspirations and career promotion to male

migrants (as in much of the skilled literature), a ground that they increasingly share with non-migrant women. Thus, although human capital enhancement has remained the prerogative of men (Department of Trade and Industry and the Home Office, 2002) narratives of work appear to be becoming increasingly recognised and validated for non-migrant women in the First World (McDowell, 2001). For instance, Purcell (2002), in her research on gender differentials in employment and opportunities amongst those with similar qualifications and educational opportunities, suggested that within the UK labour force as a whole, both men and women have higher earnings in male-dominated sectors. Focusing on female-dominated sectors may not tell us about the lives and experiences of high-earning migrant women. Purcell's research, however, also indicated that even within these high-earning sectors, women still earn less than men. Moreover, a gendering of tasks and differences continues to be important in male-dominated sectors, so that the extent to which women reach the higher echelons of Human Resources Management and other managerial posts remains limited (Purcell, 2002). These issues, which are so central to the literature on gender and work in organisations for non-migrant women, spurring its own vocabulary of glass ceilings and glass cliffs (Ryan and Haslam, 2005), do not appear to be extended to migrant women (Bagilhole, 2002).

In much of the existing literature on migrant women, their participation in the labour market is underwritten by the need to survive a combination of global inequities (Sassen, 2003), troubled gendered/political regimes, or conflictual families. Women's mobility seems to be driven by economic imperatives rather than career or individual aspirations, or alternatively, their aspirations appear to be embedded within familial objectives. Women may move in order to benefit the families they leave behind or bring with them, or in order to escape from difficult or exploitative familial situations. There is little space for women who want to improve their skills or better their career through migration.

However, migration may also be one route into circumventing career blockages in the home country, as exemplified by Ono and Piper's (2004) study of Japanese women who move to the US to study in order to break out of the circle of disadvantage caused by gender discriminatory practices within education, which then translates to gender discrimination in employment. It appears, then, that migrant women too may have career aspirations and that their movements may not be driven purely by survival, but by the fact that work is increasingly central to women's identities in the middle classes around the world. But so far there are very few accounts of the migration of women that chart such a story.

By suggesting that migrant women may invest in work *per se* and not just see work as a route to survival (Sassen, 2003), we can expand the scope within which female migrant identities may be understood, and ensure that narratives of economic survival and familial hardship do not constrain our analysis of female migration. In ICT, mobility can become not only a marker of achievement, but a route to both applying technical skills and acquiring place-specific managerial and interpersonal skills, which are considered essential for career prospects. A woman who does not move frequently and regularly to take up on-site jobs may lose out on career mobility because she has not had enough client contact or managed on-site projects. ICT workers require not only up-to-date technical skills but also a range of other competencies, and international migration provides one route to acquiring such skills, and the social recognition that follows (Williams and

Baláz, 2005). Thus, spatial mobility is itself a route to career mobility. The identity of the person whose survival is secured through migration needs then to be conceptualised not just in terms of bodily or physical survival, but also within the context of the aspirations they bring with them, which include professional satisfaction, career progression and the development, enhancement and validation of skills.

Thirdly, a focus on gender issues in male-dominated sectors forces open categories such as 'immigration regulations' to a gender-sensitive scrutiny in new ways. Many scholars have noted that women, because of their considerable presence in particular sectors (either public sector jobs or in 'irregularised work') are disproportionately influenced by a range of state regulations (Kofman *et al.*, 2005). For instance, they may be unequally affected by immigration regulations at points of exit and entry because of the criminalisation of certain female-dominated labour market sectors, such as sex work (O'Connell Davidson and Anderson, 2003), the gendered victimisation that female domestic workers may face (Anderson, 2000), or the loss that exit of female professionals such as teachers and nurses represents to the sending country. In light of moves to restrict the exit of nurses, Kingma (2006: 137, cited in Asis, 2006: 4) asks: 'Is it because they are women that nations are willing to ignore nurses' basic human right – the right to leave their country?' Asis wonders how gender factors into this selective regulation, especially when, by comparison, the migration of ICT professionals, many of whom are men, does not seem to invite policies to restrict their migration (Asis, 2006: 4). Comparing how women's mobility is regulated in feminised sectors and male-dominated sectors can tell us a lot about both the modes of regulation and also how gender is mobilised in conceiving and operationalising migration regulations (Kofman *et al.*, 2005).

Finally, ICT labour markets, like all other occupational sectors, reflect, refract and reproduce many forms of social differentiation,<sup>12</sup> and gender operates in conjunction with these stratifying forces to shape gender patterns in labour-market participation, but also determines who migrates within the sector (Mahler and Pessar, 2006). For instance, Kamat *et al.* (2004) suggested that access to technical education is shaped by social hierarchies, themselves a reflection of the establishment

and reproduction of the social structures in place. In India, for instance, in putting together a developmentalist regime, a series of caste/class alliances were forged, and their authority was translated into educational advantage, creating a class of intelligentsia with privileged access to education, and particularly technological education. Thus, in a study of ICT students in Andhra Pradesh, Nagaraju and Haribabu (2003) found that 58% of their students were upper caste and 88% of the students identified themselves as middle-class (although we do not know how these intersect with gender). These figures are played out in migration stories too, so that women from particular classes (castes/urban locations) may well be able to circumvent gendered hierarchies in science and technology through their privileged positions within other social hierarchies. And these privileges translate into access to jobs, to migration, and also into the ability to access social networks both during (Vertovec, 2000) and after migration (Shih, 2006), with long-lasting effects on how migration is experienced. Thus, as Shih (2006) pointed out, migrant women ICT workers in her study were able to circumvent ethnic barriers by tapping into alumni networks in order to find jobs in companies set up by their compatriots. Women who face ethnic or gendered constraints in a receiving context may be able to draw upon caste/class resources in order to make a place for themselves within male-dominated labour markets. As such, gender operates alongside other factors to shape migrant women's experiences in the male-dominated ICT sector, but it does not operate in any simple additive manner, so that migrant women's race, gender and class do not constitute a 'triple whammy' (Brah, 1992; Calavita, 2006). While for some women, their class and ethnicity may help to overcome gendered constraints, for others class might only provide limited ability to circumvent the limitations posed by their race and gender. What is important here is that an intersectional analysis of women in a male-dominated sector may highlight more permutations of class and ethnic barriers than might be accessible through a study of female-dominated sectors. However, these are areas that remain poorly explored because of the wider neglect of the experiences of women in male-dominated sectors of the labour market in literature on female migration.

## CONCLUSION

Within migration studies, gender is increasingly recognised as a significant axis of differentiation (Carling, 2005; Piper, 2005; Donato *et al.*, 2006) with gender influencing pre-migration strategies, the process of migration, and post-migration experiences (Boyd and Grieco, 2003). Most work in this field has focused on women entering lesser-skilled sectors of the labour market (Kofman, 2000), although this is slowly changing as a significant body of work explores the experiences of nurses, for instance (Allan and Larsen, 2003). However, there has been very little reflection thus far on migrant women's experience within male-dominated sectors of the labour market. This paper argues that this is an important lacuna in current research on female migration.

Migrant women in male-dominated sectors pose new questions about the gendered organisation of work in countries of origin. Thus, the same sector that faces concerns about its gender selectivity because of its low ability to recruit women (as in the UK and the US) may be seen as relatively gender-egalitarian in another country (such as India). It raises questions about why some sectors are male-dominated anyway, and what their masculine profile implies in different national contexts. What is important here is that in the context of migration, gendered social relations of work too are taken across borders, so that the expectations and behaviours of men and women may become transformed both because of their experience of gender differentiation within the sector and because of extensive contact with migrants who bring their own gender expectations of that sector. However, there has so far been little research in this area. Thus, we do not yet know whether any re-gendering of the workplace has been provoked by migrant women in male-dominated sectors, but these might be questions for researchers to take up in the future.

This paper explored some of these issues through the example of the ICT sector. A focus on this sector allowed us to recognise migrant women's contribution to ICT, and to avoid a male normative version of migration within knowledge societies (within which ICT is seen as key). The example of the ICT sector suggests that what is regarded as female-unfriendly in some

countries may be considered less so in others. This means that it cannot be taken for granted that what is considered as male-dominated in one country is as male-dominated or even qualitatively similar in terms of gender oppression in another. Moreover, in recognising the presence of women in these male-dominated sectors we may also ask how they came to be there? Within the context of the ICT sector it can be argued that women's experiences are refracted by the particularities of ICT as a middle-class profession within specific sending country contexts.<sup>13</sup> But we do not know what differentiates migrants in these sectors from those in feminised sectors. Is their presence in male-dominated sectors a mark of privilege, and how has this privilege been secured? What happens to migrant women who are privileged in terms of class or other social categories but penalised by their gender (and perhaps race) in terms of their occupational trajectories?

Moreover, are there commonalities between the experiences of female labour migrants in male-dominated sectors and feminised sectors? When and how do gender and nationality supersede sectoral working conditions to become a shared vector for understanding female migration? Do these different positionings mean that migrant women in different sectors share more than might be expected? Or is gender differentially mobilised across sectors so that it becomes less significant for some male-dominated sectors than in feminised sectors? And how can a recognition of these more complex positionings add to feminist literature on migration? These are pressing issues for us to address if we are not to be left with an imaginary of a knowledge society which is wholly populated by non-migrant (men and women) and migrant men.

#### ACKNOWLEDGEMENTS

A version of the paper was first presented at the IMISCOE Cluster 8 meeting in Amsterdam in 2006. I would like to thank the organisers of the meeting for inviting me, and the editor and three anonymous reviewers for their comments on the paper. I would also like to thank Maja Cederberg for her careful reading of the paper. All errors remain my own.

#### NOTES

- (1) It is useful to note that in using the term 'feminising', Ho (2006: 511) means that they are (re)inscribed with socially constructed gender roles which are neither natural nor necessarily fair. This is the sense in which it is used here too.
- (2) This paper offers a broad critique of existing literature while recognising that there are notable and valuable exceptions to some of the trends outlined.
- (3) The paper outlines some of the limits to the ways in which female migration is currently researched. As such it operationalises gender as one important variable that affects the experience of female migrants, but does not look at the gender issues facing male migrants or how these are addressed. This is another vast topic that requires a separate critical review and cannot be addressed here.
- (4) The term 'labour migration' implies those who come into a country for the purposes of work. This work may be skilled or lesser skilled, categories which are anyhow permeable and not fixed.
- (5) In this paper I have explored some aspects of this invisibilisation as they pertain to a subset of skilled migrants, i.e. women who work in the ICT sector. However, women are undoubtedly present in lesser skilled sectors of the labour market too.
- (6) However, most analysis of immigrant engineers who work in Canada appear to be gender neutral (Girard and Bauder, 2007) or focus exclusively on the experiences of men (Boyd and Thomas, 2002).
- (7) A number of initiatives have been launched to redress this gender balance and to address gender issues as they pertain to the new technology sector (Department of Trade and Industry, 2003). For instance, the UK government has established a Science, Engineering and Technology Unit for women, in its Office of Science and Technology. Both national and European funds are being allocated to training women in these sectors (Liu and Wilson, 2001). However, the technology sector continues to be highly gender selective.
- (8) This has also spurred a genre of fiction; see, for instance, Ellen Ullman's (1997) *Close to the Machine: Technophilia and its Discontents* (City Lights Books).
- (9) Although by doing so they also help to ascribe a masculinity to technology work, which can then become self-perpetuating (von Hellens *et al.*, 2004), so that new research also argues for the potential of ICT to challenge gender relations in work (Faulkner, 2006).

- (10) Thus Sangeeta Gupta, vice president of NASSCOM, says: 'Clearly, women in IT are a reality today. As the IT-ITES sector moves forward, more and more women are joining the industry. Already, emerging markets such as the ITES-BPO segment are hiring more women than traditional IT services industry. The trend is likely to continue and in fact gain momentum. The current crop of successful women is sure to catalyze the women in IT movement, drawing even more talent into the fray.' (Cited in CIOIOL news, 7 March 2006; available at: <http://www.ciol.com/content/search/showarticle1.asp?artid=81448>)
- (11) Thus in some empirical research I conducted in 2001, I found that the migrant Indian women I interviewed were the only women working in their teams in the UK. However, they shared their accommodation with other migrant Indian women working in the ICT sector who were working on other projects so that they had some contact with Indian women in the sector but none with British women working in the sector (see Raghuram, 2004, for some discussion of this research). Their relations with their Indian male counterparts changed over time, influenced by how they were treated by their male colleagues from the UK. They then reported that when they returned to India they found that their expectations of, and attitudes towards, their male colleagues there had altered too.
- (12) See Blickenstaff (2005) and van Langen and Dekkers (2005) for critiques of how these are produced through the education system. However, these approaches largely locate the problem in the nature of science and scientific education rather than in the intersection of gender with other social factors.
- (13) See Ackers (2005) for an analysis of gender and scientific mobility in the EU.

## REFERENCES

- Ackers L. 2005. Moving people and knowledge: scientific mobility in the European Union. *International Migration* **43**: 99–131.
- Agustín L. 2003. A migrant world of services. *Social Politics* **10**: 377–396.
- Agustín L. 2006. The disappearing of a migration category: migrants who sell sex. *Journal of Ethnic and Migration Studies* **32**: 29–47.
- Allan H, Larsen J. 2003. *We Need Respect: Experiences of Internationally Recruited Nurses in the UK*. Royal College of Nursing: London. Available at: <http://www.rcn.org.uk/downloads/international/irn-report-we-need-respect.pdf> [accessed 10 October 2005].
- Anderson B. 2000. *Doing the Dirty Work? The Global Politics of Domestic Labour*. Zed: London.
- Arun S, Arun T. 2002. ICTs, gender and development: women in software production in Kerala. *Journal of International Development* **14**: 39–50.
- Asis M. 2006. *Gender dimensions of labour migration in Asia*. Paper presented at the 'High level panel on the Gender dimensions of International Migration' Commission on the Status of Women, Fiftieth Session, New York, 27 February – 10 March 2006. Available at: <http://www.un.org/womenwatch/daw/csw/csw50/statements/CSW%20HLP%20Maruja%20MB%20Asis.pdf> [accessed 15 March 2006].
- Bagilhole B. 2002. *Women in Non-Traditional Occupations. Challenging Men*. Palgrave Macmillan: London.
- Bales K. 2003. Because she looks like a child. In *Global Woman: Nannies, Maids and Sex Workers in the New Economy*, Ehrenreich B, Hochschild A (eds). Granta Books: London; 207–229.
- Ball R. 2004. Divergent development, racialised rights: globalised labour markets and the trade of nurses – the case of the Philippines. *Women's Studies International Forum* **27**: 119–133.
- Blackburn RM, Jarman J. 2005. *Gendered Occupations: Exploring the Relationship between Gender Segregation and Inequality*. GeNet Working Paper No. 5. Available at: <http://www.genet.ac.uk/workpapers/GeNet2005p5.pdf> [accessed 18 March 2006].
- Blickenstaff J. 2005. Women and science careers: leaky pipeline or gender filter? *Gender and Education* **17**: 369–386.
- Boyd M, Thomas D. 2002. Skilled immigrant labour: country of origin and the occupational locations of male engineers. *Canadian Studies in Population* **29**: 71–99.
- Boyd M, Grieco E. 2003. *Women and Migration: Incorporating Gender into International Migration Theory*. Migration Information Source. Available at: <http://www.migrationinformation.org/Feature/display.cfm?id=106> [accessed 5 June 2006].
- Brah A. 1992. Difference, diversity and differentiation. In *'Race', Culture and Difference*, Donald J, Rattansi A (eds). Sage: London; 126–145.
- Buchan J, Parkin T, Sochalski J. 2003. *International Nurse Mobility: Trends and Policy Implications*. Available at: [www.rcn.org.uk/downloads/InternationalNurseMobility](http://www.rcn.org.uk/downloads/InternationalNurseMobility) [accessed 30 November 2006].
- Calavita K. 2006. Gender, migration, and law: crossing borders and bridging disciplines. *International Migration Review* **40**: 104–132.
- Carling J. 2005. *Gender Dimensions of International Migration*. Unpublished background paper. Global Commission on International Migration: Geneva.

- Castles S, Miller M. 2003. *The Age of Migration* (3rd edn). Macmillan: London.
- Citizenship and Immigration Canada. 2005. *Foreign Worker Overview*. Available at: <http://www.cic.gc.ca/english/monitor/issue10/05-overview.html> [15 January 2006].
- Citizenship and Immigration Canada. 2003. *Immigrant Occupations: Recent Trends and Issues*. Available at: <http://www.cic.gc.ca/english/research/papers/occupations/occupations-toc.html> [accessed 10 November 2006].
- Datta K, McIlwaine C, Evans Y, Herbert J, May J, Wills J. 2006. *Work, life and care work among low-paid migrant workers in London: towards a migrant ethic of care*. Department of Geography, Queen Mary University of London: London. Available at: <http://www.geog.qmul.ac.uk/globalcities/Report?.pdf> [accessed 5 June 2007].
- Department of Trade and Industry. 2003. *A strategy for women in science, engineering and technology: Government response to Set Fair, a report from Baroness Greenfield CBE to the Secretary of State for Trade and Industry*. Office of Science and Technology: London.
- Department of Trade and Industry and the Home Office. 2002. *Knowledge Migrants: The Motivations and Experiences of Professionals in the UK*. November issue. <http://www.homeoffice.gov.uk/rds/pdfs2/knowmigrants.pdf> [15 September 2007].
- Diamond C, Whitehouse G. 2005. *Gender, computing and the organisation of working time: public/private comparisons in the Australian context*. Paper presented at the 3rd European Symposium on Gender & ICT: Working for Change, 1 February 2005. Available at: <http://ict.open.ac.uk/gender/papers/diamond.doc> [accessed 10 November 2006].
- DIMIA. 2006. *Population Flows: Immigration Aspects 2004–05 Edition*. Department of Immigration and Multicultural and Indigenous Affairs: Australia.
- Donato K, Gabaccia D, Holdaway J, Manalansan M, Pessar P. 2006. A glass half full? Gender in migration studies. *International Migration Review* **40**: 3–26.
- Ehrenreich B, Hochschild A (eds). 2003. *Global Woman: Nannies, Maids and Sex Workers in the New Economy*. Metropolitan Books: New York.
- Equal Opportunities Commission. 2004. *Occupational Segregation, Gender Gaps and Skills Gaps*. Occupational Segregation Working Paper Series No. 15: Manchester.
- European Commission. 2004. *Waste of Talents: Turning Private Struggles into Public Issue. Women and Science in the Envisaged Countries*. European Commission: Brussels.
- Faulkner W. 2006. *Genders in/of Engineering*. Research report. Available at: [http://extra.shu.ac.uk/nrc/section\\_2/publications/reports/Faulkner\\_Genders\\_in\\_Engineering\\_Report.pdf](http://extra.shu.ac.uk/nrc/section_2/publications/reports/Faulkner_Genders_in_Engineering_Report.pdf) [accessed 10 January 2007].
- Findlay AM, Li FLN, Jowett RM, Brown M, Skeldon R. 1994. Doctors diagnose their destination: an analysis of the length of employment of Hong Kong doctors. *Environment and Planning* **26**: 1605–1624.
- Gayathri V, Anthony P. 2002. *Ricocheting Gender Equations: Women and ICT Careers*. Paper presented at the International Seminar on ICTs and Indian Development: Processes, Prognoses and Policies, Delhi, December 9–11.
- George S. 2000. “Dirty nurses” and “men who play”: gender and class in transnational migration. In *Global Ethnography: Forces, Connections and Imaginations*, Burawoy M, Blum JA, George S, Gille Z, Thayer M, Gowan T, Haney L, Klawiter M, Lopez SH, Riain S (eds). University of California Press: Berkeley, CA; 144–174.
- Girard ER, Bauder H. 2007. Assimilation and exclusion of foreign trained engineers in Canada: inside a professional regulatory organization. *Antipode* **39**: 35–53.
- Ho C. 2006. Migration as feminisation: Chinese women’s experience of work and family in Australia. *Journal of Ethnic and Migration Studies* **32**: 497–514.
- Home Office. 2005. *Selective Admission: Making Migration Work for Britain*. Home Office: London.
- Home Office. 2006. *A Points-Based System: Making Migration Work for Britain*. CM 6741. Available at: <http://www.official-documents.co.uk/document/cm67/6741/6741.pdf> [accessed 10 March 2006].
- Hyde A. 2004. *Employment Discrimination in a High Velocity Labour Market*. Rutgers Law School Faculty Papers, Paper 13. <http://law.bepress.com/cgi/viewcontent.cgi?article=1013&context=rutgersnewarklwps> [15 September 2007].
- Iredale R. 2001. The migration of professionals: theories and typologies. *International Migration* **39**: 7–26.
- Kamat S, Mir A, Matthew B. 2004. Producing hi-tech: globalization, the state and migrant subjects. *Globalisation, Societies and Education* **2**: 1–39.
- Khadria B. 2001. Shifting paradigms of globalization: the twenty-first century transition towards generics in skilled migration from India. *International Migration* **39**: 45–71.
- Khadria B. 2004. *Migration of Highly Skilled Indians: Case Studies of IT and Health Professionals*. STI Working Paper: OECD.
- Khoo S, McDonald P, Hugo G. 2007. *Temporary Skilled Migrants in Australia: Employment Circumstances and Migration Outcomes*. Available at: [http://www.immi.gov.au/media/publications/pdf/457s\\_survey\\_report.pdf](http://www.immi.gov.au/media/publications/pdf/457s_survey_report.pdf) [accessed 10 June 2007].

- Kingma M. 2006. *Nurses on the Move: Migration and the Global Health Care Economy*. Cornell University Press: Ithaca, NY.
- Kofman E. 2000. The invisibility of skilled female migrants and gender relations in studies of skilled migration in Europe. *International Journal of Population Geography* 6: 1–15.
- Kofman E. 2004a. Gendered global migrations: diversity and stratification. *International Feminist Journal of Politics* 6: 642–664.
- Kofman E. 2004b. Family-related migration: a critical review of European studies. *Journal of Ethnic and Migration Studies* 30: 243–262.
- Kofman E, Raghuram P, Merefield M. 2005. *Gendered Migrations: Towards Gender Sensitive Policies in the UK*. Working paper 6. Asylum and Immigration Series IPPR: London. Available at: <http://www.ippr.org/publicationsandreports/publication.asp?id=292> [accessed 25 July 2005].
- Jan P. 2003. Maid or madam? Filipina migrant workers and the continuity of domestic labor. *Gender and Society* 17: 187–208.
- Liu J, Wilson D. 2001. Developing women in a digital world. *Women in Management Review* 16: 405–416.
- Lupton B. 2006. Explaining men's entry into female-concentrated occupations: issues of masculinity and social class. *Gender, Work and Organization* 13: 103–128.
- Mahler S, Pessar P. 2006. Gender matters: ethnographers bring gender from the periphery toward the core of migration studies. *International Migration Review* 40: 27–63.
- Man GC. 2004. Gender, work and migration: deskilling Chinese immigrant women in Canada. *Women's Studies International Forum* 27: 135–148.
- Margolis J, Fisher A, Miller F. 2000. The anatomy of interest: women in undergraduate computer science. *Women's Studies Quarterly* 28: 104–127.
- McDowell L. 2001. Father and Ford revisited: gender, class and employment change in the new millennium. *Transactions of the Institute of British Geographers* 26: 448–464.
- McGregor J. 2007. 'Joining the BBC (British Bottom Cleaners)': Zimbabwean migrants and the UK care industry. *Journal of Ethnic and Migration Studies* 33: 801–824.
- McIlwaine C, Datta K, Evans Y, Herbert J, May J, Wills J. 2006. *Gender and Ethnic Identities among Low-paid Migrant Workers in London*. Department of Geography, Queen Mary University of London: London. Available at: <http://www.geog.qmul.ac.uk/globalcities/Report?.pdf> [accessed 15 July 2007].
- Meijering L, van Hoven B. 2003. Imagining difference: the experiences of 'transnational' Indian IT professionals in Germany. *Area* 35: 174–182.
- Mitter S. 2000. Teleworking and teletrade in India: combining diverse perspectives and visions. *Economic and Political Weekly* 26: 2241–2251.
- Morokvasic M. 1984. Birds of passage are also women. *International Migration Review* 18: 886–907.
- Nagaraju G, Haribabu E. 2003. Periphery in the service of the centre: IT education and training in India. A case study of Andhra Pradesh. *Viewpoint* 2. Available at: [Http://www.geocities.com/husociology/periphry.htm](http://www.geocities.com/husociology/periphry.htm) [accessed 25 July 2005].
- National Association of Software and Service Companies (NASSCOM). 2005. *Knowledge Professionals – Factsheet*. Available at: [http://www.nasscom.org/download/Knowledge\\_professionals.pdf](http://www.nasscom.org/download/Knowledge_professionals.pdf) [30 March 2006].
- National Science Foundation. 2007. *Women, Minorities and Persons with Disabilities in Science and Engineering*. NSF: Washington, DC.
- O'Connell Davidson J. 2005. *Children in the Global Sex Trade*. Polity: Cambridge.
- O'Connell Davidson J, Anderson B. 2003. Is trafficking in human beings demand driven? A multi-country pilot study. *IOM Migration Research Series* 15. IOM: Geneva.
- OECD. 2003. *Science, Technology and Industry Scoreboard*. Directorate for Science, Technology and Industry: Paris.
- Office of Immigration Statistics. 2004. *Characteristics of Specialty Occupation Workers (H1B) Fiscal Year 2003*. US Citizenship and Immigration Services: Washington, DC.
- Ono H, Piper N. 2004. Japanese women studying abroad: the case of the United States. *Women's Studies International Forum* 27: 101–118.
- Panteli A, Stack J, Atkinson M, Ramsay J. 1999. Women in the UK IT industry: an empirical study. *European Journal of Information Systems* 8: 170–182.
- Parreñas R. 2001. *Servants of Globalization*. University of Stanford Press: Palo Alto.
- Peters JN, Lane T, Rees Samuels G. 2002. *SET FAIR: A Report on Women in Science, Engineering and Technology from the Baroness Greenfield for the Secretary of State for Trade and Industry*. Department of Trade and Industry: London.
- Phizacklea A. 1983. *One Way Ticket: Migration and Female Labor*. Routledge and Kegan Paul: London.
- Piper N. 2005. *Gender and Migration*. Commissioned background paper for the Global Commission for International Migration. Global Commission on International Migration: Geneva.
- Platman K, Taylor P. 2004. *Workforce Ageing in the New Economy: A Comparative Study of Information Technology Employment*. University of Cambridge: Cambridge. Available at: <http://www.wane.ca/PDF/Platman&TaylorSummaryReport2004.pdf> [accessed 10 June 2006].

- Poster W, Prasad S. 2005. Work-family relations in trans-national perspective: a view from high-tech firms in India and the US. *Social Problems* 52: 122–146.
- Purcell K. 2002. *Qualifications and Careers: Equal Opportunities and Earnings Amongst Graduates*. EOC: Manchester.
- Raghuram P. 2004. Migration, gender and the IT sector: intersecting debates. *Women's Studies International Forum* 27: 163–176.
- Raghuram P. 2004. The difference that skills make gender family migration strategies and regulated labour markets. *Journal of Ethnic and Migration Studies* 30: 303–323.
- Ray KM, Lowell BL, Spencer S. 2006. International health worker mobility: causes, consequences, and best practices. *International Migration* 44: 181–203.
- Reay D. 2004. Cultural capitalists and academic habitus: classed and gendered labour in UK higher education. *Women's Studies International Forum* 27: 31–39.
- Ryan MK, Haslam SA. 2005. The glass cliff: evidence that women that women are over-represented in precarious leadership positions. *British Journal of Management* 16: 81–90.
- Salaff J, Greve A. 2004. Gendered structured barriers to job attainment for skilled Chinese emigrants in Canada. *International Journal of Population Geography* 9: 443–456.
- Sassen S. 2003. Global cities and survival strategies. In *Global Woman, Nannies, Maids and Sex Workers in the New Economy*, Ehrenreich B, Hochschild A (eds). Metropolitan Books: New York; 254–274.
- Saxenian A. 2000. *Silicon Valley's new immigrant entrepreneurs*. CCIS working paper No. 15, University of California: San Diego.
- Schrover M, van der Leun J, Quispel C. 2007. Niches, labour market segregation, ethnicity and gender. *Journal of Ethnic and Migration Studies* 33: 529–540.
- Shih J. 2006. Circumventing discrimination: gender and ethnic strategies in Silicon Valley. *Gender and Society* 20: 177–206.
- Slade B. 2003. *Gender, Race and the Social Construction of Skill in Canadian Engineering: The Deskillling of Immigrant Women Engineers*. Canadian Association for the Study of Adult Education. Available at: [http://www.oise.utoronto.ca/CASAE/cnf2003/2003\\_papers/bonniesladeCAS03.pdf](http://www.oise.utoronto.ca/CASAE/cnf2003/2003_papers/bonniesladeCAS03.pdf) [accessed 10 June 2007].
- Trauth E. 2002. Odd girl out: an individual differences perspective on women in the IT profession. *Information Technology and People* 15: 98–118.
- UNIFEM. 2000. *Progress of the World's Women*. United Nations Development Fund for Women: New York.
- Upadhyya C. 2005. *Gender Issues in the Indian Software Outsourcing Industry*. Paper presented at Gender Perspectives on the Information Society – South Asia Pre-WSIS Seminar, 18–19 April 2005. Available at: <http://www.itforchange.net/WSIS/gis/papers/carol-upadhyya.doc> [12 March 2007].
- Upadhyya C, Vasavi AR. 2006. *Work, Culture, and Sociality in the Indian IT Industry: A Sociological Study*. IDPAD final report. [http://www.uniglobalunion.org/uniindep.nsf/51520e5cabae0089c12569b4004fe4c2/40601d743f5e3567c125723b0034587d/\\$FILE/NIAS-IDPAD%20IT%20Study%20Final%20Report.pdf](http://www.uniglobalunion.org/uniindep.nsf/51520e5cabae0089c12569b4004fe4c2/40601d743f5e3567c125723b0034587d/$FILE/NIAS-IDPAD%20IT%20Study%20Final%20Report.pdf) [12 March 2007].
- Valenduc G, Vendramin P, Guffens C, Ponzellini AM, Lebano A, D'Ouville L, Collet I, Wagner I, Birbaumer A, Tolar M, Webster J. 2004. *Widening Women's Work in Information and Communication Technology*. European Commission: Brussels.
- Van der Veer P. 2005. Virtual India: Indian IT labor and the nation-state. In *Sovereign Bodies*, Hansen TB, Stepputat F (eds). Princeton University Press: Princeton, NJ; 276–290.
- Van Langen A, Dekkers H. 2005. Cross-national differences in participating in tertiary science, technology, engineering and mathematics education. *Comparative Education* 41: 329–350.
- Vertovec S. 2000. *Transnational networks and skilled labour migration*. WTPC-02-02. Available at: <http://www.transcomm.ox.ac.uk/working%20papers/WTPC-02-02%20Vertovec.pdf> [accessed].
- Vijayabaskar M, Gayathri V. 2003. ICT and Indian development: processes, prognoses, policies. *Economic and Political Weekly*, June 14.
- Voigt-Graf C. 2003. Fijian teachers on the move: causes, implications and policies. *Asia-Pacific-Viewpoint* 44: 163–175.
- Voigt-Graf C, Khoo S. 2004. Temporary migration of Indian ICT workers to Australia. *Asian and Pacific Migration Journal* 13: 137–154.
- Von Hellens L, Neilsen SH, Beekhuizen J. 2004. An exploration of dualisms in female perceptions of work. *Journal of Information Technology Education* 3: 103–116.
- Webster J. 2005. *Women in IT professions: corporate structures, masculine cultures*. Paper presented to the 3<sup>rd</sup> European Symposium on Gender and ICT: Working for Change, 1<sup>st</sup> February. Available at: <http://ict.open.ac.uk/gender/papers/webster.doc> [accessed 12 March 2006].
- Williams A, Baláž V. 2005. What human capital, which migrants? Returned skilled migration to Slovakia from the UK. *International Migration Review* 39: 439–468.
- Winkelmann-Gleed A. 2006. *Migrant Nurses, Motivation, Integration, Contribution*. Radcliffe Medical Press: Oxford.
- Xiang B. 2001. Structuration of Indian information technology professionals migration to Australia: an ethnographic story. *International Migration* 39: 73–90.