

Being an expatriate: Influential factors in MNC subsidiaries

Panagiota Sapouna

Athens University of Economics and Business

Dimitris Manolopoulos

Athens University of Economics and Business

Pavlos Dimitratos

Athens University of Economics and Business

Correspondence author: Panagiota Sapouna, Athens University of Economics & Business,
Department of Management Science and Technology, 12 Kodrigktonos St., Athens 104 34, Greece,
T/F: +30 210-820 35 63, sapouna@aueb.gr

Being an expatriate: Influential factors in MNC subsidiaries

Abstract

In this paper we investigate the effects of research and development (R&D) laboratories, roles of subsidiaries, and employee – related characteristics, such as age, gender and marital status, on the R&D personnel movements and more specifically on their decision to undertake international assignments as corporate expatriates. Although expatriation issues have gained a sufficient stream of research, the empirical evidence on expatriates versus non expatriates is still limited. We aim at offering some insights to fill a gap especially in the area of international assignments of R&D professionals in which seemingly no prior study exists. The evidence in this study draws from empirical research conducted on 598 professionals in 70 MNE subsidiaries operating in Greece. The findings indicate that the roles of R&D laboratories and the roles of subsidiaries in which employees work, as well as their demographic characteristics – age and gender - seem to induce dissimilar decisions as far as their approach in international careers is concerned. Hence, the current research suggests that managers should take into account the impact of the aforementioned factors on the employees' decisions for international mobility in order to accommodate successful global staffing for the modern MNE.

1. Introduction

Multinational enterprises (MNEs) recognize that movement of human resources plays an important role in developing and sustaining a competitive advantage in the modern highly competitive international business environment (Taylor et al., 1996; Briscoe and Schuler, 2004; Shay and Baack, 2004; Hocking et al., 2004). Since MNEs usually offer international assignments as corporate expatriates to their employees, they are often in the position to value

the international assignments for the experience and the opportunities they bring for personal development and career enhancement (Stahl & Cerdin, 2004). International assignments provide expatriates with an opportunity to improve their general management skills, acquire a “global mindset”, and create a network of international contacts-assets that are important at higher organizational levels (Gregersen et al., 1998; Mendenhall, 2001). Overall, international experience is a competitive asset that makes managers more valuable and provides adequate opportunities for professional growth (Aycan, 2001; Caligiuri & Lazarova, 2001). There are organizational and individual factors that may also affect the employee in his/her decision whether expatriation would help or hinder his/her career (Bolino, 2007).

Although there is a sufficient stream of research on expatriation (cf. Caligiuri, 2000; Mamman & Richards, 1996; Takeuchi et al., 2005; Hippler 2009), the empirical evidence on expatriates versus non-expatriates is still limited (Boyacigiller, 1990; Ronen, 1986; Robock & Simmonds, 1983). Additionally, international assignments of MNE research and development (R&D) professionals in particular have seemingly not been investigated in the literature. It is surprising that management scholars have paid scant attention to this issue that applies to the main implementers of MNE-related knowledge, namely R&D experts (Manolopoulos, 2006). To corroborate, there is much literature that deals with the nature and importance of R&D internationalization (Asakawa, 1996, 2001; Cantwell, 1995; Ronstadt, 1978), and so, the examination of the mobility of R&D scientists is crucial since it can be a valuable technological source for these organizations.

The objective of the current study is to examine the effect of specific factors on the R&D personnel movements and more specifically on their decision to undertake international expatriate assignments. The evidence in this study draws from empirical research conducted on MNE subsidiaries in Greece. There exists little research on the investigation of international human resource management issues in Greece and advancing economies in

general (Manolopoulos, 2006). In examining personnel movements, we respond to the recent plea for research focused on the increased use of international assignments (Brewster et al., 2001; Collings & Scullion, 2006; Collings et al., 2007; Starr & Currie, 2009). We aim at offering some insights to fill a gap especially in the area of international assignments of R&D professionals in which seemingly no prior study exists. In particular, our conjecture in the present paper is that the factors that affect the movements of R&D employees are the roles of R&D laboratories; the roles of subsidiaries; and, demographic characteristics of the employees such as age, gender and marital status.

To analyze, firstly, the roles of R&D laboratories are significant to examine since the mobility expectations and decisions may be affected according to the duties and responsibilities that employees undertake in their working units (Gabbay & Zuckerman, 1998). Secondly, the roles of subsidiaries are investigated because a chief prerequisite for the efficient deployment and transmission of knowledge inputs throughout the MNE refers to employee international movements (Bartlett & Ghoshal, 1989). Professionals employed in different types of subsidiaries have different skills, competences and career ambitions (Harzing, 2001; Mäkelä et al., 2009). Thirdly, age may also affect the movements of the R&D personnel since employees in different age groups have different experiences, responsibilities and professional expectations (Olsen & Martins, 2009). Fourthly, the examination of the impact that gender has on employees' decision to transfer internationally deserves attention in expatriate research given the disparity in numbers of females versus males chosen for expatriate assignments (Connerley et al., 2008). Finally, R&D personnel may be affected by their marital status and family considerations in order to decide whether to move abroad or not for international expatriate assignments (Starr & Currie, 2009).

This article proceeds as follows. The second section discusses the theoretical background behind the aforementioned factors. In doing so, it also advances the hypotheses that guide our

empirical study. The third section outlines the methodological aspects concerning sampling, data-collection and measurement of variables. The fourth section elaborates on the statistical analysis and discusses the findings. The concluding section addresses the key implications of the study for management research and practice as well as discusses limitations and directions for further research.

2. Research background and hypotheses

2.1 Roles of R&D laboratories

Employees that work in R&D laboratories of different roles have dissimilar responsibilities in the MNE group and this can play an important role on their desire / willingness and consequently on their decision to undertake international assignments and move as corporate expatriates. R&D sites are usually established with a specific R&D mandate or R&D mission to complement a perceived need in the parent organization (Von Zedtwitz, 2004). There is considerable evidence of a differentiation of roles across R&D laboratories (Cordell, 1973; Håkanson & Nobel, 1993) and numerous studies have developed typologies of foreign R&D units while several others have added useful or related insights (Dicken, 2007; Kuemmerle 1996; Pearce 1989; Rondstadt 1977).

The classification adopted in this study derives from the comprehensive typologies of Haug et al. (1983) as well as Hood and Young (1982). This classification identifies three distinctive roles for an overseas R&D laboratory. The first role refers to the effective use of well-existing technologies and procedures of the MNE group so that they become embodied in the production process of well-established products. Therefore, the main function associated with this role is adaptation development of either the products or the production process. In other words, this type of laboratory provides technical back-up for production and

facilitates the transfer and adaptation of technology from the parent to the affiliate. Laboratories that assume this role are support laboratories (SLs) that are crucial to the successful commercialization of subsidiary products in *a-priori* determined target markets.

In addition, more empowered roles can be assumed by host country R&D units in the pursuit of MNE international competitiveness. Therefore, the second role than an R&D unit in the host country can have is to operate as a closely integrated part of a subsidiary in order to develop distinctive products. These products can subsequently be supplied to regional, or even, global markets (Pearce, 1999). This type of R&D unit is defined as locally integrated laboratory (LIL). Instead of using the existing MNE technology in order to produce well-established products, LILs extend the scope of the subsidiary through the use of all available resources in an innovative way that seeks to expand the competitive MNE product range. This implies that LILs have a quite “productive” scope (Papanastassiou & Pearce, 1999).

The third possible role that an R&D laboratory can have is to provide basic or applied research inputs into a programme of precompetitive work organized by the MNE. The laboratories that are involved in such tasks are internationally interdependent laboratories (IILs). This type of laboratory has the objective to develop new ideas for the global operations of the MNE and is more extensively integrated with other globally-based R&D centres of the MNE than to the firm’s production sites within the host country. The LIL and IIL types of R&D units would accommodate the objective of a regional or global innovative approach for the MNE concerned (Pearce, 1999).

R&D employees in SLs may closely follow the mandates of the MNE since their lab would be embedded in the MNE network in an attempt to carry out the technological strategy of the MNE group. These professionals are likely to be instilled with the values of the MNE and seek to apply their expertise and knowledge for the benefits of the MNE group (Manolopoulos, 2006). They are very knowledgeable about the host country markets and the

culture and highly familiar with the company's lines or business. They may also provide important links to the local business community and perhaps play a key strategic role in gaining new business for the branch (Boyacigiller, 1990). This can aid firms in avoiding potentially costly mistakes or enhance the firm's ability to recognize opportunities unique to the market and culture (Edstrom & Galbraith, 1994; Thompson & Tambyah, 1999). Their morale and confidence are directly connected with their ambition to have visible career opportunities in their home country (Harvey & Novicevic, 2000). Thus, they may be highly motivated to extend their knowledge on the R&D systems and processes that take place inside the MNE and satisfied to work for their home country.

On the contrary, R&D employees in LILs seem to have different ambitions from those on SLs. On the one hand, they are likely to be a closely integrated part of the MNE technological strategy, and thus, seek to forge links with other MNE R&D actors. On the other hand, they are likely to seek to expand the innovative technological base of the subsidiary aiming at producing goods for regional or global markets. These experts can look for expansion of the competitive product range of the whole MNE group (Pearce, 1999). Thus, R&D employees in LILs seem to be willing to undertake international assignments, transferring their knowledge, competencies and skills. They represent a worldwide resource that can easily be reassigned or transferred to where their managerial skills are needed (Widmier et al., 2008). Furthermore, R&D professionals that decide to undertake international assignments, seek to bring in their network to other business units which would strengthen the project portfolio of the new R&D lab, particularly if it has a development or a process focus (Von Zedtwitz, 2004).

R&D employees in IIL types of laboratories behave in an autonomous way and are not particularly embedded in the MNE context (Pearce & Papanastassiou, 1997). Based on their qualifications, they seek to expand their career horizons and growth opportunities, competing

in the international arena. Hence, they may seek international assignments in order to explore new technological domains in which they can carry out significant basic or applied research. Consequently, we posit that:

Hypothesis 1a: Other things being equal, R&D employees in SLs are not likely to be expatriates.

Hypothesis 1b: Other things being equal, R&D employees in LILs are likely to be expatriates

Hypothesis 1c: Other things being equal, R&D employees in IILs are likely to be expatriates.

2.2 Roles of subsidiaries

A factor that can determine a subsidiary's sphere of operations is its strategic mandate (Zahra et al., 2000). As multinationals are confronted with the simultaneous need for global standardization and local adaptation (Jarillo & Martinez, 1990), their subsidiaries may differ in the scope of their activities, the extent of responsibilities they take, the importance of the markets they serve, the level of competence and organizational characteristics they have. All these reflect on a range of different mandates that subsidiaries can assume within the context of MNE strategy. Employees working in different types of subsidiaries have different duties, and career ambitions. Numerous typologies of subsidiary roles and strategies have been developed in the literature (Bartlett & Ghoshal, 1989; Gupta & Govindarajan, 1991; Harzing & Noorderhaven, 2006; White & Poynter 1984). In general, subsidiaries can assume "market access" responsibilities and supply the local market with a part of the MNE product range, and so, be strongly dependent on MNE existing group procedures and technologies; or, become creative organizations that perform high value-added activities, and hence, become

more embedded in localized knowledge development systems (Cantwell, 1995; Dunning, 1995; Kuemmerle, 1999).

In this paper, we apply a typology derived by White and Poynter's (1984) "scope" framework. This is, owing to the fact that knowledge and technology-related aspects of subsidiaries are clearly positioned within such "scope" typologies (Papanastassiou & Pearce, 1999). In our research we delineate three subsidiary types: the first is described as a truncated miniature replica (TMR) that produces goods for the host market, which are part of the MNE established product range. Although this extensive localised supply responsibility characterises this market-seeking subsidiary as resembling a "miniature replica" of its parent company, it is also a "truncated" version. This means that it lacks important attributes, most notably those relating to product innovation, implementation of new technologies and autonomous strategic decision-making (Papanastassiou & Pearce, 1999).

The second subsidiary role proposed by White and Poynter is the rationalized product subsidiary (RPS). This subsidiary applies knowledge that is already well-established in the MNE group and embodied in proven commercialized and effectively produced goods. In doing so, the rationalized product subsidiary becomes part of the internationally-coordinated supply network of the MNE group.

A more complete MNE response to the challenges of the contemporary global competitive environment is the world (or regional) product mandate (PM), which is the third role in White and Poynter's classification. These subsidiaries usually take on more dynamic potentials, seeking to provide a technological impetus towards a subsidiary's escape from technological dependency and towards the generation of its own individualised creative scopes and ultimately localised product development. In other words, PMs employ subsidiary-level resources and knowledge in order to develop and supply distinctive new products that are likely to target a wide market spectrum. In doing so, the PM may acquire a

unique position in the MNE group and fully evade the MNE system as far as technological dependency is concerned.

R&D employees in TMRs are to a significant extent embedded in the MNE decision-making system, their professional skills are predefined and they practically apply their knowledge and expertise to carry out the job needed locally.

R&D employees in RPSs are characterised by high levels of competence – both knowledge of specific MNE group technologies and skill in reactive and adaptive work - and responsibility for supporting the competitive rationalization (involving significant technology transfer and relocation) of a wider group of network operations (Manolopoulos et al., 2007). R&D employees in PMs are involved in genuine decentralized technological projects and participate in the production of innovative products. The subsidiary-level resources that PMs employ are either generated in-house or become accessible through collaborative arrangements in the local economy (Papanastassiou 1999). Employees that work in RPSs as well as in PMs are ascribed to wide MNE roles, are given more decision-making power, have high contributory roles and are often engaged in advanced value-added activities (Birkinshaw et al. 1998). Taken all these together, one could expect that R&D scientists from RPSs and PMs seek to undertake international assignments abroad in order to get new ideas, to augment their technological base and to enrich their working experience. Thus, we propose that:

Hypothesis 2a: Other things being equal, R&D employees in TMR subsidiaries are not likely to be expatriates.

Hypothesis 2b: Other things being equal, R&D employees in RPS subsidiaries are likely to be expatriates.

Hypothesis 2c: Other things being equal, R&D employees in PM subsidiaries are likely to be expatriates.

2.3 Age of the respondent

Understanding the issue of age is increasingly important in order to understand the behaviour and the decisions of the employees and not the least in international management studies. The age of employees is a significant factor that may influence their acceptance for overseas assignments and international mobility as well as their subsequent adaptation to a foreign setting (Mamman & Richards, 1996).

The older one becomes, the more difficult it is to accept expatriation and to adapt to a new cultural system (Gudykunst & Kim, 1984; Guthrie, 1975; Kim, 1977). Hence, younger people are more flexible in adapting to new environment. Based on the notion of flexibility it is reasonable to expect younger employees to undertake international assignments and to be more effective interculturally than older employees.

However, perceptions of age vary across different nations guided by cultural values, demography, philosophy, family structure and environment (Brown, 1990; Ice, 2005; Palmore & Maeda, 1985). Some societies believe that growing older may be associated with increasing maturity (Harris & Moran, 1991; Van Lange et.al., 1997). It follows, therefore, that older expatriates can also have advantages over younger expatriates in some situations (Mamman, 1995). On the other hand, it is reasonable that older employees have to face several strains and difficulty in their decisions whether to undertake an international assignment or not, such as family responsibilities (Yang, 2007).

Unlike many of their older counterparts, the new younger breed of global professional will move on a moment's notice and have no dependents to worry about. Young employees may be single or living with someone but still at the stage where both partners are trying to prove themselves professionally and more likely to value an international assignment over a relationship. It is shown that they are willing to start their international careers and have high organizational mobility with the expectation to have higher benefits from international

experiences for their future careers (Biemann & Andresen, 2010). In other words, younger employees are eager for international experience, willing to enrich their knowledge base and identify opportunities and ready to expand their career horizons. Thus,

Hypothesis 3: Other things being equal, younger employees are more likely to be expatriates than older employees.

2.4 Gender of respondent

The role of gender in international expatriate assignments has attracted increased research attention in recent years. As the involvement of women as expatriates steadily increases, scholarly interest in their participation and the volume of research in this arena grows (Altman & Scottland, 2008). Even though many enterprises have reexamined their reluctance to post women abroad, the number of female expatriates is still relatively low, although the trend is increasing.

Over the years, several researchers have attempted to explain the low numbers of female expatriates on expatriate assignments (Adler, 1984; Caligiuri & Cascio, 1998; Westwood & Leung, 1994; Harris et al., 2003; Varma et al., 2006). In the early 1980s Adler (1979, 1984) highlighted the potential of women as expatriates and reported that about three percent of expatriates in U.S. multinationals were women. Nowadays, there are not definite statistics on the numbers of expatriates within an organizational context. However, participation rates of women are thought to range from around 30% in more female-friendly sectors, such as non-profit and charitable organizations and 25% in media and publishing, to as low as 6% in construction and engineering (ORC Worldwide, 2007) with an average of 15% across all industries (ORC Worldwide, 2008). Women are increasingly – albeit slowly – gaining foothold as expatriates even in heavily male-dominated sectors as mining and oil.

Thus, there appears to be a slow but steady increase in the use of women in international assignments (Shortland, 2009).

Research on expatriate literature (Adler, 1994) suggests that there is a tendency towards female employees being less willing to take on expatriate assignments and/or being unsuitable to do so. Even if they were qualified appropriately, local resistance would preclude their acceptance due to social and societal norms (Adler, 1987). On the other hand, a study of international transfer by Tyler (2001) indicates that women do not turn down international assignments at a higher rate than men, but, in contrary, they are as willing as men to go overseas assignments. Perhaps more important, there is empirical support for the notion that female expatriates do not experience significantly lower levels of adjustments (Morley & Flynn, 2003; Selmer, 2001), lower levels of performance (Caligiuri & Tung, 1999) or higher level of prejudice (Varma et al., 2006; Connerley et al., 2008) than their male counterparts. Moreover, some research has suggested that females may actually adjust even better to foreign assignment than men (Halsberger, 2007; Tung, 2004) or have an advantage in certain circumstances. This may be because females are inclined to have higher quality communication skills and a better capability of constructing relationships, both important attributes of successful expatriates.

However, research on expatriate assignments continues to show that females are disproportionately under-represented in expatriate assignments (Tung, 2004; Vance et al., 1999). In the samples used in empirical research on international assignments, males far outnumber females. Indeed as Caligiuri and Tung (1999) have noted, “a glass ceiling appears to persist (p.763).” The reason for their under-representation often stems from prejudice against women.

A wide range of studies across the globe have explored the notion that many receiving societal cultures will deem the supply of female expatriates unsuitable due to their gender.

Evidence from Australia, the U.S., Europe and Hong Kong indicates that women face obstacles in their careers which are not faced by their male counterparts (Linehan & Scullion, 2004; Paik & Vance, 2002; Selmer & Leung, 2003; Tharenou & Harvey, 2006; Vance & Paik, 2001). Linehan and Scullion (2001) identified both overt and covert barriers preventing female managers from progressing to senior managerial positions in international management. These barriers include the obligation to balance home life and career, isolation and loneliness, constantly being aware of being a woman in a man's world, having to prove themselves to others, and having to work harder and be better than their male counterparts. In this connection Harris et al. (2003) have also argued that female expatriates were more likely to be negatively viewed by host country nationals. Further, women can face various types of discrimination or harassment.

Moreover, while women are making some progress in managerial work, it remains restricted largely to lower and middle ranks (Goodman et al., 2003; Morrison et al., 1987). The international mobility of women may be restricted because of their family attachment and social norms, which still regard men as primary breadwinners (Bu & McKeen, 2002). In terms of career development, Selmer and Leung (2003) found that many corporate activities that were available to men were less available to women. These activities included fast track programs, individual career counseling, and career planning workshops. Finally, Connerley et al. (2008) suggest that although women may be perceived by their supervisors as having the same level of performance as men, they are not seen as being ready for international assignments at the same rate. Thus,

Hypothesis 4: Other things being equal, male employees are more likely to be expatriates than female employees.

2.5 Marital Status of expatriates

Research on international assignments and transfers generally suggests the family situation of expatriates (i.e. being single or married) to be one of the most important factors in their decision to go abroad as expatriates (e.g., Adler, 1983; Black, 1988; Black et al., 1991; Black & Stephens, 1989; Mendenhall & Oddou, 1985; Stroh et al., 1992). Understanding work-family interfaces is a pivotal concern of international assignments.

Several studies draw upon family systems theory and work-life ‘spill-over’ theory (e.g. Fukuda & Chu, 1994; Harvey, 1997; Borstorff et al., 1997; Tung, 1998; Selmer & Leung, 2002; Caligiuri & Phillips, 2003; Anderson, 2005; Bonache, 2005; Caligiuri & Tarique, 2006) to highlight how the nature of international assignments impacts on all aspects of life both inside and outside the workplace. Family influence and involvement has been found to be instrumental in the overall assignment process, from the willingness of the expatriate to accept an overseas assignment (Brett & Stroh, 1995; Konopaske et al., 2005; Chew & Zhu, 2002; Lomax, 2002; Tharenou, 2002) to the way repatriation is effectively managed (Caligiuri et al., 1998; Grant-Vallone & Ensher, 2001).

Surveys of HR professionals by Brewster et al. (2001) and Tahvanainen et al. (2005) cited imposed family separation as a potential mobility barrier to assignment acceptance. This has led to assumptions by some employers that international assignments may be more suited to ‘single’ individuals without partners or children (Starr, & Currie, 2009).

Researchers into domestic transfer of workplace and international transfers normally agree with the concept that single individuals have a higher willingness to transfer to international assignments than married individuals (Brett et al., 1990). As Feldman and Thompson (1993) posit, single expatriates without extensive family responsibilities and commitments may have an easier time in adjusting to foreign assignments. In other words, singles do not have the burden of family adjustment difficulties. Contrary to single

expatriates, married expatriates will more probably face difficulties regarding to adjustment to foreign assignments because they have greater family responsibilities (Meyskens et al., 2009). Married individuals perhaps must consider various family issues, such as the effect of children and family members on international mobility that is a more fundamental anxiety than marital status.

Overall, the willingness of employees to expatriate is thus likely to be a function of their family's willingness to expatriate. For married employees the decision to expatriate is directly connected to their family's willingness, whereas for single employees unencumbered by partner and children the decision to transfer to overseas assignments is easier (Tharenou, 2008). Thus,

Hypothesis 5: Other things being equal, single employees are more likely to be expatriates than married employees.

3. Methodology

3.1 Data collection

The data for this study were collected among MNEs based in Greece. The *International Capital (ICAP)* database was the sampling frame employed. This database is the most comprehensive sampling frame that exists in Greece, and forms a standard source of financial data for foreign and indigenous firms operating in this country. The *ICAP* database has been repeatedly used in previous studies involving firms based in Greece (e.g. Dimitratos et al., 2004; Manolopoulos et al., 2007; Souitaris, 2002). In total, 317 MNE subsidiaries were included in this database. All these subsidiaries originate from different MNEs. The industries of investigated subsidiaries involved automobiles and transport equipment,

telecommunications, electronics and information technology, chemicals and pharmaceuticals, machinery, food and beverages, textiles, services, miscellaneous and other manufacturing. These MNEs originated from the EU, US, Japan, and other European nations.

The research was conducted in two stages. The first stage involved a national questionnaire-based postal survey in order to identify MNE subsidiaries that have an R&D department. Questionnaires were posted to the chief executive officers (CEOs) of subsidiaries in order to acquire this necessary information. 133 useable responses were collected out of 315 subsidiaries (two questionnaires from the original 317 firms were returned undelivered). Thus, the effective response rate for this first stage is 42%, which is considered to be perfectly acceptable when compared with similar postal surveys (Harzing, 1997). Among these 133 subsidiaries, 70 were identified to have an R&D department (53%).

The second stage of the survey involved collection of R&D employee responses concerning whether they have moved or had the intention to move or not as expatriates. Among the 70 subsidiaries that were identified to have an R&D laboratory, all R&D professionals were asked to fill in a structured questionnaire related to the issues of interest to the current study. The total number of possible respondents from these 70 R&D units was 852. A careful three-stage process was used to develop this questionnaire. Firstly, the questionnaire was scrutinized by two academics and two professional consultants, who provided improvements in the wording and advice on its layout. Secondly, following a major revision, the questionnaire was handed to five subsidiary CEOs of subsidiaries. In most cases, their recommended corrections were similar to each other and yielded the second revision. Thirdly, the questionnaire was handed to ten R&D scientists for the final testing. No further changes to wording or structure were required. The questionnaire included closed-ended questions and was accompanied by a cover letter explaining the objectives of the study assuring strict confidentiality. All items used were derived from previously developed scales.

At the end of each of the two months following the initial posting of the questionnaire to R&D professionals, a reminder letter was sent to all R&D employees who had not responded yet. In total, out of the initially 852 posted questionnaires and following two reminders, 254 questionnaires were not returned; or, were deemed to be unusable due to incomplete responses, errors in responses etc. As a result, 598 fully useable questionnaires were collected, rendering an effective response rate of 70%. No statistically significant differences between respondents and non-respondents were obtained in relation to the number of R&D employees and years of operations of the laboratories, and so, response bias does not appear to constitute a threat to the results.

3.2 Statistical method and measures

In order to test out the hypotheses, a logistic regression model was run with the movements of personnel. The dependent variable in this regression analysis is the movements of personnel (MOV) as expatriates for international assignments. Respondents were asked to provide information on whether they have moved or not as expatriates during the last five years. The dependent variable was captured through a dummy variable whereby 1 refers to personnel that have moved for international assignments abroad and 0 to personnel that have not moved for international assignments abroad. Out of the 598 respondents, 341 scientists (57%) from the investigated 70 MNE R&D units had undertaken assignments abroad whereas 257 scientists (43%) had not undertaken assignments abroad.

The five independent variables of interest in this study are, first, the *role of the R&D laboratory*. This variable sought to identify on a four-point Likert scale (4= only role, 3= main role, 2= secondary role, 1= not part of a role) to what extent the function of the lab falls into one of three categories: adapts existing products and/or processes to make them suitable to the local markets and conditions (Support Laboratory - SL); develops new products for the

regional or global markets (Locally Integrated Laboratory - LIL); and, carries out basic research (not directly related to the current products) as part of a wider MNE group level research programme (Internationally Independent Laboratory - IIL) (drawn from Papanastassiou & Pearce, 1999).

The second independent variable of interest is the *role of the subsidiary*. This variable sought to identify on a four-point Likert scale (4= only role, 3= main role, 2= secondary role, 1= not part of a role) to what extent the function of the subsidiary falls into one of three categories: focus on the production of differentiated products for regional or global markets applying subsidiary-level knowledge (Product Mandates - PMs); specialize in the production of specific products or component parts of the final products using knowledge that is already well-established in the MNE (Rationalized Product Subsidiary - RPS); and, produce standardized goods that are part of the MNE established product range (truncated Miniature Replica - TMR) (drawn from White & Poynter, 1984).

The following independent variables of interest concern the chief demographic employee characteristics. Thus, the third independent variable of interest is the *age of the respondent* (AGERES) (e.g. Olsen & Martins, 2009; Takeuchi et al., 2005) that was measured using a three-point Likert scale (1= R&D professionals under 36 years old, 2= professionals between 36 and 45 years old and 3= professionals over 45 years old). The fourth independent variable of interest is the *gender of the respondent* (Selmer & Leung, 2003; Shortland, 2009) that was captured through a dummy variable whereby 1 refers to male R&D professionals (MALE) and 0 to females. The fifth independent variable of interest is the *marital status of the respondent* (e.g. Brown, 2008; Caligiuri & Tung, 1999). This variable was again captured through a dummy variable whereby 1 refers to married R&D professionals (MARRIED) and 0 to singles.

Furthermore, three control variables are employed in this research. *Technological intensity of the sector (HIGHTECH)* (e.g. Tether & Storey, 1998; Pearce, 1994) that was captured through a dummy variable whereby 1 refers to subsidiaries operating in high-technology sectors (i.e. firms in the telecommunications, electronics and information technology, chemicals and pharmaceutical industries) and 0 to subsidiaries in low-tech sectors (i.e. all other firms). *Size of the subsidiary (SUBSIZE)* (e.g. Chiao et al., 2008; Stewart & Bulent, 2007) was measured using a three-point Likert scale taking into consideration the volume of sales expressed in million Euros (1= less than €20 m, 2= between €20-40 m and 3= more than €40 m). *Age of the subsidiary (AGESUB)* (e.g. Dimitratos et al., 2009; Fang et al., 2008) was measured using a three-point Likert scale capturing the number of years of subsidiary operations in Greece (1= recently established subsidiaries that had been operating in Greece since 1995, 2= well-established established subsidiaries that had been operating in Greece between 1976 and 1994 and 3= old subsidiaries that had been operating in Greece before 1975).

4. Findings and discussion

Table 1 reports the means, standard deviations and pairwise Pearson correlations between the dependent variable (personnel movements - MOV) and all the regressors used in our analysis. The support laboratories (SLs) are highly and negatively correlated ($p < 0.01$) with the personnel movements as expatriates whereas the locally integrated laboratories (LILs) are strongly and positively correlated ($p < 0.01$) with the personnel movements as expatriates. Furthermore, not surprisingly, the internationally interdependent laboratories (IILs) are highly and negatively correlated ($p < 0.01$) with the SLs and are also negatively correlated ($p < 0.05$) with the LILs. As far as the roles of subsidiaries are concerned, it seems that the TMRs are positively and significantly correlated ($p < 0.01$) with SLs but highly and

negatively ($p < 0.01$) correlated with IILs. This implies that there is direct association between the two kinds of roles as one could have expected, notably the more MNE-embedded SL labs accompany TMRs whereas the more “autonomous” IIL labs do not accompany TMRs. Additionally the age of the respondents is negatively correlated ($p < 0.05$) with the movements of personnel as expatriates and the male gender of the respondents is positively correlated ($p < 0.05$) with the movements of personnel. Finally, the marital status of the respondents seems to be positively correlated to age and negatively correlated ($p < 0.05$) to male gender.

Table 1: Descriptive statistics and correlation matrix

| Variables | Mean | S.D. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---------------------|-------------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|
| 1. MOV | 0,57 | 0,44 | 1 | | | | | | | | | | | | |
| 2. SL | 2,88 | 1,03 | -0,28** | 1 | | | | | | | | | | | |
| 3. LIL | 1,94 | 0,78 | 0,22** | -0,17 | 1 | | | | | | | | | | |
| 4. IIL | 1,41 | 0,63 | 0,12 | -0,12** | -0,28* | 1 | | | | | | | | | |
| 5. TMR | 0,71 | 0,47 | 0,21* | 0,32** | -0,27 | -0,33** | 1 | | | | | | | | |
| 6. RPS | 0,06 | 0,11 | 0,17 | -0,29 | -0,41 | -0,28 | -0,21* | 1 | | | | | | | |
| 7. PM | 0,23 | 0,10 | 0,28 | -0,11 | 0,25** | -0,11 | -0,33** | -0,18* | 1 | | | | | | |
| 8. AGERES | 1,46 | 0,87 | -0,17* | 0,11 | -0,22 | -0,18 | -0,08 | 0,16 | -0,18 | 1 | | | | | |
| 9. MALE | 0,51 | 0,31 | 0,24* | 0,08 | 0,17 | 0,27* | 0,16 | 0,18 | 0,17 | 0,22 | 1 | | | | |
| 10. MARRIED | 0,67 | 0,27 | 0,18 | 0,10 | 0,09* | -0,11 | 0,22 | -0,11 | 0,22 | 0,26* | -0,14* | 1 | | | |
| 11. HIGHTECH | 0,31 | 0,14 | -0,17 | 0,25* | -0,17 | -0,18 | 0,39* | -0,06 | -0,14 | 0,07 | 0,21 | 0,22 | 1 | | |
| 12. SUBSIZE | 1,84 | 0,89 | 0,11 | 0,34 | -0,22 | -0,31* | 0,28* | -0,17 | 0,18 | -0,29 | -0,18 | 0,37 | 0,15 | 1 | |
| 13. AGESUB | 1,68 | 0,78 | 0,25 | 0,02 | -0,11 | -0,14** | 0,32 | -0,21 | -0,21* | -0,15 | 0,25 | -0,11 | 0,27* | 0,14 | 1 |

* Correlation is significant at the 0.05 level.

** Correlation is significant at the 0.01 level.

Table 2 displays the results of the logistic regression model. The independent and control variables were regressed on the personnel movements as expatriates.

Table 2: Regression with the R&D personnel movements as dependent variables^a

| Regression with personnel movements | |
|--|-------------------|
| SL | -.385** (.207) |
| LIL | .614** (.358) |
| IIL | |
| TMR | .845* (.556) |
| RPS | |
| PM | |
| AGERES | -.417* (.282) |
| MALE | .661** (.398) |
| MARRIED | |
| HIGHTECH | |
| SUBSIZE | |
| AGESUB | |
| <hr/> <i>n</i> =598 | |
| Pseudo R-square | 0.22 |
| F | 3.94*** |
| LR chi ² | 19.25** |
| *** significant at 0.01, ** significant at 0.05, * significant at 0.10 | |
| Figures in () is standard error | |

^a Only statistically significant results are presented

Diagnostic checks for the disturbance terms and heteroskedasticity tests took place for the model. No deviations from the assumptions of linearity, homoscedasticity and normality were found in relation to the regression variate. In addition, multicollinearity was not found to be a source of bias since the assessment of variance inflation factors for the regression variables resulted in values close to 1, which are significantly lower than the accepted cut-off value of 10 (Netter et al. 1996). The pseudo R^2 value in this regression set is above 20%, which is quite satisfactory given the cross-sectional and cross-national nature of the sample.

Hypothesis 1a posited that R&D employees in SLs are not likely to be expatriates. Regression model presents a highly statistically significant ($p < 0.05$) but negative coefficient between SLs and the choice of personnel to move or not to move as corporate expatriates and so, Hypothesis 1a is supported. Hence, the results suggest that R&D employees in SLs seek to augment their knowledge base inside their home country avoiding expatriation movements and not undertaking international assignments (Chew, 2004). Hypothesis 1b supported the view that R&D employees in LILs are likely to be expatriates. The evidence from regression model convincingly supports this hypothesis in line with our expectations, yet the coefficient is statistically significant at the 5% level. In order to gain competitive advantages for career development and progress, R&D employees in LILs seek to experience international mobility (Widmier et al., 2008). As far as Hypothesis 1c is concerned, there are no statistically significant results for IIL labs in regression model linked to personnel movements. Thus, Hypothesis 1c that proposed that R&D employees in IILs are more likely to be expatriates is not supported.

Hypothesis 2a assumed that R&D employees in TMR subsidiaries are not likely to be expatriates. The evidence from the regression model provides evidence to

the contrary, although at the marginal significance level of 10%. Hypothesis 2a is thus not supported. This is a rather contradictory and surprising finding. It may be that employees working in TMRs have limited managerial authorities and development opportunities, and so, in their effort to advance their skills and competences and to climb in upper hierarchical positions they may seek to undertake international assignments as expatriates. Moreover, it could be partially explained by the strategy of MNEs: although TMR subsidiaries and SL labs seem to be the less autonomous units in the MNE groups, the product managers of TMRs must be skilled enough in order to give directions to the professionals employed in SLs. Thus, MNEs promote their TMR employees to international assignments, aiming to acquire international experience and upgrade their managerial authorities. Hypothesis 2b and 2c posited that R&D employees in RPS subsidiaries and R&D employees in PM subsidiaries respectively are likely to be expatriates. There no significant results for employees in RPS as well for employees in PM subsidiaries in regression model linked to personnel movements. Thus, there is no support to either Hypothesis 2b or 2c. In a similar vein with the previous hypothesis this may be explained by the Greek sample used for this research which is representative to the population of the Greek subsidiaries.

Hypothesis 3 argued that younger employees are more likely to be expatriates than older employees. Regression model presents a negative statistically significant coefficient at the 10% level between the older employees and the personnel movements as expatriates. In other words, older employees in MNEs avoid expatriation assignments whereas young professionals are more willing to have an international career. Hence, the evidence from regression model supports this hypothesis. The explanation for this finding may be that older employees tend to view offers of international assignments as a risky career move. On the other hand, for the

younger employees the allure of an international career are almost irresistible. They think of the positive effects an international assignment can have, both on the expatriate's career and on their personal development. These include faster career advancement, more marketable skills such as strategic thinking, flexibility and negotiation ability, improved decision-making, greater confidence and authority, more maturity and better people management proficiency (Tung, 1998).

Hypothesis 4 posited that male employees are more likely to undertake international assignments than female employees. Regression model presents a highly statistically significant coefficient at the level of 5% between the male gender of the employees and the personnel movements as expatriates. This finding provides support to Hypothesis 4. This finding seems to be logical as women often turn down offers for international mobility due to the important hurdles they have to face such as stereotypes, social norms etc. (Connerley et al., 2008).

Hypothesis 5 supported the view that single employees are more likely to become expatriates in comparison with married employees, but in the regression model there is no statistically significant result for the marital status of the employees linked to their decision to undertake overseas assignments. Hypothesis 5 is thus not supported. The evidence from this research indicates that the marital status of the employees does not seem to be a key factor in their decision to move abroad as corporate expatriates. Finally, the regression results do not present other statistically significant results for the control variables – technology sector, subsidiary size and subsidiary age.

5. Conclusions

The escalating demand for managers to relocate overseas is forecasted to continue to grow for the foreseeable future (Harvey, 1996). International assignments remain one of the most persistently underinvestigated areas in international human resource management nowadays (Lee 2003). In particular, the current study is seemingly the first research that provides some evidence into respective movements of R&D personnel in Greece.

The findings of the present study shed some light to the unexplored issue in international human resource management of R&D personnel movements. Specifically, the study sought to illuminate the impact of specific factors - organizational and demographic characteristics- on the decision of the scientific personnel to undertake international assignments and to move as corporate expatriates. The roles of R&D laboratories and the roles of subsidiaries in which employees work, as well as their demographic characteristics – age and gender - seem to induce dissimilar decisions as far as their perspective in international career is concerned. In order to investigate the above issue, we have developed certain hypotheses which were empirically tested and most of the sets of key factors used have proved to be significantly associated with the decision/choice of scientific personnel for international mobility.

There are research and managerial implications of the findings. As far as international management is concerned the roles of subsidiaries as well as the roles of R&D labs seem to have influential impact on the propensity and decision of the employees to become corporate expatriates. The implications of the findings for MNE management developing international assignments and human resource management programmes are that R&D researchers working in LIL R&D laboratories and in TMR

subsidiaries are more likely to be corporate expatriates; whereas scientists working in SL R&D laboratories are not familiar with the idea of international mobility. Therefore, the evidence of this study contributes to research by arguing in favour of incorporating characteristics of the micro context of R&D employees when examining their international assignments. Also, regarding demographic characteristics, young, men employees are more likely to undertake international assignments with the perspective to improve and upgrade their skills for a better future professional career. Therefore, managers should take into account that effective management of international assignments is a principal factor accommodating successful global staffing for the modern MNE (Collings et al., 2009; Welch et al., 2009).

There are limitations in the current study that may provide avenues for further research. We examine three of these limitations in this paper. Firstly, we did not seek to examine a complete list of potential factors that influence the decision/dilemma of personnel to move as corporate expatriates. As we primarily emphasized the roles of R&D labs/subsidiaries and some demographic characteristics of the employees, we did not focus on other factors associated with the R&D lab context such as the development stage of R&D labs, subsidiary and MNE-related variables and also other employee-associated characteristics such as corporate tenure, education etc (e.g. Tregaskis and Brewster 2006). Future research on R&D personnel movements may take into consideration these variables in conjunction with the relative predictive power of each of these sets.

Secondly, the results of this study can be constrained by the Greek investigated sample. Greece is a reasonably small country on the EU periphery and the goals of MNEs for their subsidiaries and R&D operations can be specific to this nation. As discussed, the idiosyncrasies linked to the Greek economy may explain

some results that have not met our expectations. Future study should try to replicate and extend the focus of this research in other countries also.

Thirdly, another limitation has to do with the fact that this research took place before the announcement of the new strict financial measures for the Greek employees. The responses of the R&D employees may not necessarily be the same in a future research. It is possible that their propensity for international expatriate assignments will be higher in the future. In summary, this study used a highly controlled setting and market in order to test empirically the scientific personnel movements. Despite the limitations of the study and the fact that there is always room for error in any questionnaire-based research, evidence seems to provide insights to our initial purposes.

References

- Adler, N. J. (1979). Women as androgynous managers: A conceptualization for the potential for American women in international management. *International Journal of Intercultural Relations*, 3/4, 407-436.
- Adler, N. J. (1983). Cross-cultural management: Issues to be faced. *International Studies of Management and Organizations*, 13, 7-45.
- Adler, N. J. (1984). Do MBAs want international careers. *International Journal of Intercultural Relations*, 10/3, 277-300.
- Adler, N. J. (1987). Pacific basin managers: a gaijin, not a woman. *Human Resource Management*, 26/2, 169-191.
- Adler, N. J. (1994). Competitive frontiers: Women managing across borders. *Journal of Management Development*, 13, 24-41.

- Altman, Y., & Scotland, S. (2008). Women and international assignments: Taking stock a 25 year review. *Human Resource Management*, 47/2, 199-216.
- Anderson, B. A. (2005). Expatriate selection: Good management or good luck? *International Journal of Human Resource Management*, 16/4, 567-583.
- Asakawa, K. (1996). External and internal linkages and overseas autonomy - control tension: The management dilemma of the Japanese R&D in Europe. *IEEE Transactions on Engineering Management*, 43, 24-32.
- Asakawa, K. (2001). Evolving headquarters - subsidiary dynamics in international R&D: The case of Japanese multinationals. *R&D Management*, 31, 1-14.
- Aycan, Z. (2001). Expatriation: a critical step toward global development. In M. E. Mendenhall, T. M. Kuhlman, & G.S. Stahl (Eds), *Developing global business leaders: policies, processes, and innovations* (pp. 119-35). Westport: Quorum Books.
- Bartlett, C. A., & Ghoshal, S. (1989), *Managing Across Borders: The Transnational Solution*. London: Hutchinson Business Books.
- Biemann, T. & Andersen, M. (2010). Self-initiated foreign expatriates versus assigned expatriates: Two distinct types of international careers? *Journal of Managerial Psychology*, 25/4, 430-448.
- Birkinshaw, J., Hood, N., & Jonsson, S. (1998). Building firm specific advantages in multinational corporations: The role of subsidiary initiative', *Strategic Management Journal*, 19, 221-241.
- Black, J. S. (1988). Work role transitions: A study of American expatriate managers in Japan. *Journal of International Business Studies*, 19, 277-294.
- Black, J. S., Mendenhall, M., Oddou, G. R. (1991). Toward a comprehensive model of international adjustment: An integration of multiple theoretical perspectives. *Academy of Management Review*, 16, 291-317.
- Black, J. S., & Stephens G. K. (1989). The influence of the spouse and intent to stay in Pacific Rim overseas assignments. *Journal of Management*, 15, 529-544.
- Bolino, M. C. (2007). Expatriate assignments and intra-organizational career success: implications for individuals and organizations. *Journal of International Business Studies*, 38/5, 819-836.

- Bonache, J. (2005). Job satisfaction among expatriates, repatriates and domestic employees. *Personnel Review*, 34/1, 110–124.
- Borstorff, P. C., Harris, S. G., Field, H. S., & Giles, W. F. (1997). Who'll go? A review of factors associated with employees willingness to work overseas. *Human Resource Planning*, 20/3, 29–40.
- Boyacigiller, N. (1990). The role of expatriates in the management of interdependence, complexity and risk in multinational corporations. *Journal of International Business Studies*, 21/3, 357-381.
- Brett, J. M., & Stroh, L. K. (1995). Willingness to relocate internationally. *Human Resource Management*, 34/3, 405–424.
- Brett, J. M., Stroh, L. K., & Reilly, A. H. (1990). *Impact of societal shifts and corporate changes on employee relocation*. Washington, D.C.: Employee Relocation Council.
- Brewster, C., Harris, H., & Petrovic, J. (2001). Globally mobile employees: Managing the mix. *Journal of Professional Human Resource Management*, 25, 11-15.
- Briscoe, D., & Schuler, R. (2004). *International human resource management: Policies and practices for the global enterprise* (2nd eds.). New York: Routledge.
- Brown, A. S. (1990). *The social processes of aging & old age*. Englewood Cliffs: Prentice Hall.
- Brown, R. J. (2008). Dominant stressors on expatriate couples during international assignments. *International Journal of Human Resource Management*, 19, 1018-1034.
- Bu, N., & McKeen, C. A. (2002). Introduction: Enhancing women's international mobility and career success. *Women in Management Review*, 17/2, 48-52.
- Caligiuri, P. M. (2000). Selecting expatriates for personality characteristics: a moderating effect of personality on the relationship between the host national contact and cross-cultural adjustment. *Management International Review*, 40/1, 61-80.
- Caligiuri, P. M., & Cascio, W. F. (1998). Can we send her there? Maximizing the success of western women on global assignments. *Journal of World Business*, 33, 394–416.
- Caligiuri, P. M., Hyland, M. M., Bross, A. S., & Joshi, A. (1998). Testing a theoretical model for examining the relationship between family adjustment and expatriates' work adjustment. *Journal of Applied Psychology*, 83/4, 598–614.

- Caligiuri, P. M. & Lazarova, M. (2001). Strategic repatriation policies to enhance global leadership development. In M. E. Mendenhall, T. M. Kuhlman, & G.S. Stahl (Eds), *Developing global business leaders* (pp. 243-256). Westport: Quorum Books.
- Caligiuri, P., & Phillips, J. (2003). An application of self-assessment realistic job previews to expatriate assignments. *International Journal of Human Resource Management*, 14, 1102–1116.
- Caligiuri, P., & Tarique, I. (2006). International assignee selection and cross-cultural training and development. In G. K. Stahl & I. Bjorkman (Eds.), *Handbook of Research in International Human Resource Management* (pp. 302–322). Cheltenham: Edward Elgar.
- Caligiuri, P., & Tung, R. L. (1999). Comparing the success of male and female expatriates from a US-based multinational company. *International Journal of Human Resource Management*, 10, 763–782.
- Cantwell, J. (1995). The globalization of technology: What remains of the product cycle model? *Cambridge Journal of Economics*, 19, 155-174.
- Chew, J. (2004). Managing MNC expatriates through crises: A challenge for international human resource Management, *Research and Practice in Human Resource Management*, 12/2, 1-30.
- Chew, I. K. H., & Zhu, W. (2002). Factors influencing Singapore managers' career aspiration in international assignments. *Career Development International*, 7/2, 96-109.
- Chiao, Y. -C., Yu, C.-M. J. J., Li, P. -Y., & Chen, Y. -C. (2008). Subsidiary size, internationalization, product diversification, and performance in an emerging market', *International Marketing Review*, 25, 612-633.
- Collings, D. & Scullion, H. (2006). Global staffing. In G. K. Stahl & I. Björkman (Eds.), *Handbook of Research in International Human Resource Management* (pp. 141-157). Cheltenham: Edward Elgar.
- Collings, D.G., Scullion, H., & Dowling, P.J. (2009), 'Global staffing: A review and thematic research agenda', *International Journal of Human Resource Management*, 20, 1253-1272.

- Collings, D. G., Scullion, H., & Morley, M. M. (2007). Changing patterns of global staffing in the multinational enterprise: Challenges to the conventional alternatives', *Journal of World Business*, 42, 198-213.
- Connerley, M., Mecham, R., & Strauss, J. (2008). Gender differences in leadership competencies, expatriate readiness and performance. *Gender in Management: An International Journal*, 23/5, 300-316.
- Cordell, A. J. (1973). Innovation, the multinational corporation: Some policy implications for national science policy. *Long Range Planning*, 6, 22-29.
- Dicken, P. (2007). *Global shift: mapping the changing contours of the world economy*. London: Sage.
- Dimitratos, P., Lioukas, S., & Carter, S. (2004). The relationship between entrepreneurship and international performance: The importance of domestic environment. *International Business Review*, 13, 19-41.
- Dimitratos, P., Liouka, I., & Young, S. (2009). Regional location of multinational corporation subsidiaries and economic development contribution: Evidence from the UK. *Journal of World Business*, 44, 180-191.
- Dunning, J. H., & Narula, R. (1995). The R&D activities of foreign firms in the United States. *International Studies of Management & Organization*, 25, 1/2, 39-72.
- Edstrom, A., & Galbraith, J. (1994). Alternative policies for international transfers of managers. *Management International Review*, 34/1, 71-82.
- Fang, Y., Frank, J., Makino, S., & Beamish, P. (2008). Multinational firm knowledge use of expatriates and foreign subsidiary performance', *Academy of Management Proceedings*, 2008, 1-6.
- Feldman, D. C. & Tompson, H. B. (1993). Expatriation, repatriation, and domestic geographical relocation: An empirical investigation of adjustment to new job assignments. *Journal of International Business Studies*, 24/3, 507-529.
- Fukuda, K. J., & Chu, P. (1994). Wrestling with expatriate family problems. *International Studies of Management and Organizations*, 24/3, 36-48.

- Gabbay S. M., & Zuckerman, E. W. (1998). Social capital and opportunity in corporate R&D: The contingent effect of contact density on mobility expectations. *Social Science Research*, 27/2, 189-217.
- Goodman, J. S., Fields, D. L. & Blum, T. C. (2003). Cracks in the glass ceiling: In what kind of organizations do women make it to the top? *Group and Organization Management*, 28/4, 475-501.
- Grant-Vallone, E. J., & Ensher, E. A. (2001). An examination of work and personal life conflict, organizational support, and employee health among international expatriates. *International Journal of Intercultural Relations*, 25, 261–278.
- Gregersen, H. B., Morrison, A. J., & Black, J. S. (1998). Developing leaders for the global frontier. *Sloan Management Review*, 40, 21-32.
- Gudykunst, W. B., & Kim, Y. Y. (1984). Communicating with strangers. An approach to intercultural communication. New York: Random House.
- Gupta, A. K., & Govindarajan, V. (1991). Knowledge flows and the structure of control within multinational corporations. *Academy of Management Review*, 16, 768-792.
- Guthrie, G. (1975). A behavioural analysis of culture learning. In R.W. Brislin, S. Bochner, & W.J. Lonner (Eds.), *Cross-cultural perspective on learning*. New York: Wiley.
- Håkanson, L., & Nobel, R. (1993). Determinants of foreign R&D in Swedish multinationals. *Research Policy*, 22, 397–411.
- Halsberger, A. (2007). Gender differences in expatriate adjustment. Paper presented at the Academy of Management annual conference. Philadelphia.
- Harris, H., Brewster, C., & Sparrow, P. (2003). International human resource management. London: CIPD.
- Harris, P.R. & Moran, R. T. (1991). Managing cultural differences. Houston: Gulf Publishing Company.
- Harvey, M. (1996). The selection of managers for foreign assignments: A planning perspective. *The Columbia Journal of World Business*, 31/4, 102-118.

- Harvey, M. (1997). Dual-career expatriates: Expectations, adjustment and satisfaction with international relocation. *Journal of International Business Studies*, 2/3, 627–658
- Harvey, M., & Novicevic, M. M. (2000). The influences of inpatriation practices on the strategic orientation of a global organization. *International Journal of Management*, 17/3, 362–371.
- Harzing, A. W. K. (2001). Of bears, bumble-bees and spiders: The role of expatriates in controlling foreign subsidiaries. *Journal of World Business*, 36/4, 366-379.
- Harzing, A. W. K., & Noorderhaven, N. G. (2006). Knowledge flows in MNCs: An empirical test and extension of Gupta & Govindarajan's typology of subsidiary roles', *International Business Review*, 15, 195-214.
- Haug, P., Hood, N., & Young, S. (1983). R&D intensity in the affiliates of US-owned electronics companies manufacturing in Scotland. *Regional Studies*, 17, 383-392.
- Hippler, T. (2009). Why do they go? Empirical evidence of employees' motives for seeking or accepting relocation. *The International Journal of Human Resource Management*, 20/6, 1381-1401.
- Hocking, J. B., Brown, M., & Harzing, A. W. (2004). A knowledge transfer perspective of strategic assignment purposes and their path-dependent outcomes. *International Journal of Human Resource Management*, 15, 565-586.
- Hood, N., & Young, S. (1982). US multinational R&D: Corporate strategies and policy implications for the UK. *Multinational Business*, 2, 10-23.
- Ice, G. (2005). Biological anthropology and aging. *Journal of Cross-Cultural Gerontology*, 20, 87-90.
- Jarillo, J. C., & Martinez, J. I. (1990). Different roles for subsidiaries: The case of multinational corporations. *Strategic Management Journal*. 11, 501-512.
- Kim, Y. Y. (1977). Communication patterns of foreign immigrants in the process of acculturation. *Human Communication Research*, 4, 66-77.
- Konopaske, R., Ribie, C., & Ivancevich, J. M. (2005). A preliminary model of spouse influence on managerial global assignment willingness. *International Journal of Human Resource Management*, 16/3, 405–426.

- Kuemmerle, W. (1996). Home base and foreign direct investment in research and development: An investigation into the international allocation of research activity by multinational enterprises. unpublished doctoral thesis, Harvard University.
- Kuemmerle, W. (1999). Foreign direct investment in industrial research in the Pharmaceutical and Electronic industries – Results from a survey of multinational firms. *Research Policy*, 28, 179-193.
- Lee, J. (2003). MNC characteristics and global learning. *Journal of Academy of Business and Economics*, 2/2, 126-138.
- Linehan, M., & Scullion, H. (2001). European female expatriate careers: Critical success factors. *Journal of European Industrial Training*, 25, 392–418.
- Linehan, M., & Scullion, H. (2004). Towards an understanding of the female expatriate experience in Europe. *Human Resource Management Review*, 14, 433–448.
- Lomax, S. (2002). So you want to work abroad? *Business & Economic Review*, 48/3, 12-18.
- Mäkelä, K., Björkman, I., & Ehrnrooth, M. (2009). MNC subsidiary staffing architecture: Building human and social capital within the organization. *International Journal of Human Resource Management*, 20, 1273-1290.
- Mamman, A. (1995). Socio-biographical antecedents of intercultural effectiveness: The neglected factors. *British Journal of Management*, 6, 97-114.
- Mamman, A., & Richards, D. (1996). Perceptions and possibilities of intercultural adjustment: some neglected characteristics of expatriates. *International Business Review*, 5/3, 283-301.
- Manolopoulos, D. (2006). Motivating R&D professionals: Evidence from MNEs decentralized laboratories in Greece. *International Journal of Human Resource Management*, 17, 616-646.
- Manolopoulos, D., Papanastassiou, M., & Pearce, R. (2007). Knowledge-related competitiveness and the roles of multinationals' R&D in Greece. *Management International Review*, 47, 1-21.
- Mendenhall, M. E. (2001). New perspectives on expatriate adjustment and its relationship to global leadership development. In M. E. Mendenhall, T. M. Kuhlman, & G.S. Stahl (Eds), *Developing global business leaders: policies, processes, and innovations* (pp. 1-16). Westport: Quorum Books.

- Mendenhall M., & Oddou, G. (1985). The dimensions of expatriate acculturation: A review. *Academy of Management Review*, 10/1, 39-47.
- Meyskens, M., Von Glinow M. A., Wether W. B., & Clarke L. (2009). The paradox of international talent: Alternative forms of international assignments. *International Journal of Human Resource Management*, 20/6, 1439-1450.
- Morley, M. J., & Flynn, M. (2003). Personal characteristics and competencies as correlates of intercultural transitional adjustment among US and Canadian sojourners in Ireland. *Management International*, 7/2, 31-46.
- Morrison, A. J., White, R. P., & Van Velsor E. (1987). *Breaking the glass ceiling: Can women reach the top of America's largest corporations?* Reading: Addison-Wesley.
- Netter, J., Wasserman, W., & Kutner, M. (1996). *Applied Linear Statistical Models*. (4th ed.), Homewood, IL: Irwin.
- Olsen, J. E., & Martins, L. L. (2009). The effects of expatriate demographic characteristics on adjustment: A social identity approach. *Human Resource Management*, 48, 311-328.
- ORC Worldwide (2007), 2006 Worldwide Survey of International Assignment Policies and Practices, ORC Worldwide, New York.
- ORC Worldwide (2008), Dual Careers and International Assignments Survey, ORC Worldwide, New York.
- Paik, Y., & Vance, C. (2002). Evidence of back home selection bias against U.S. female expatriates. *Women in Management Review*, 17/2, 68-79.
- Palmore, E. B., & Maeda, D. (1985). *The Honorable Elders Revisited*. Durham: Duke University Press.
- Papanastassiou, M., & Pearce, R. (1999). *Multinationals, technology and national competitiveness*. Cheltenham: Edward Elgar.
- Pearce, R. D. (1989). *The internationalization of research and development by multinational enterprises*. New York: St. Martin's Press.
- Pearce, R. D. (1994). The internationalization of research and development by multinational enterprises and the transfer sciences. *Empirica*, 21, 297-311.

- Pearce, R. D. (1999). Decentralized R&D and strategic competitiveness: Globalised approaches to generation and use of technology in multinational enterprises. *Research Policy*, 28, 157-178.
- Pearce, R. D., & Papanastassiou, M. (1997). European markets and the strategic roles of multinational enterprise subsidiaries in the UK', *Journal of Common Market Studies*, 35, 243-66.
- Robock, S. H. & Simmonds, K. (1983). *International business and multinational enterprises*. Homewood, IL: Richard D. Irwin.
- Ronen, S. (1986). *International and comparative management*. New York: Wiley.
- Ronstadt, R. C. (1977). *Research and Development Abroad by U.S. Multinationals*. New York: Praeger.
- Ronstadt, R. C. (1978). International R&D: The Establishment and Evolution of Research and Development Abroad by Seven US Multinationals. *Journal of International Business Studies*, 9/1, 7-24.
- Selmer, J. (2001). Expatriate selection: Back to basics? *International Journal of Human Resource Management*, 12/8, 1219-1233.
- Selmer, J., & Leung, A. S. M. (2002). Career management issues of female business expatriates. *Career Development International*, 7/6, 348-358.
- Selmer, J., & Leung, A. S. M. (2003). Are corporate career development activities less available to female than to male expatriates. *Journal of Business Ethics*, 43, 125-136.
- Shay, J. P., & Baack, S. A. (2004). Expatriate assignment, adjustment and effectiveness: An empirical examination of the big picture. *Journal of International Business Studies*, 35, 216-232.
- Shortland, S. (2009). Gender diversity in expatriation: Evaluating theoretical perspectives. *Gender in Management: An International Journal*, 24/5, 365-386.
- Souitaris, V. (2002). Firm specific competences determining technological innovation: A Survey in Greece. *R&D Management*, 32, 61-76.
- Stahl, G. K. & Cerdin, J. -I. (2004). Global careers in French and German multinational corporations. *Journal of Management Development*, 23/9, 885-902.

- Starr, T. L. & Currie, G. (2009). Out of sight but still in the picture: Short-term international assignment & the influence role of the family. *International Journal of Human Resource Management*, 20/6, 1421-1438.
- Stewart, J., & Bulent, M. (2007). Subsidiary size and the level of subsidiary autonomy in multinational corporations: A quadratic model investigation of Australian subsidiaries. *Journal of International Business Studies*, 38, 787-801.
- Stroh, L. K, Brett, J. M., & Reilly, A. H. (1992 August). *What may be obvious may not be true: A non-recursive model predicting manager and spouse international willingness to relocate*. Paper presented at the 52nd Annual Meetings of the Academy of Management, Las Vegas.
- Tahvanainen, M., Welch, D., & Worm, V. (2005). Implications of short-term international assignments. *European Management Journal*, 23, 663–673.
- Takeuchi, R., Tesluk, P. E., Yun, S., & Lepak, D. P. (2005). An integrative view of international experience. *Academy of Management Journal*, 48, 85-100.
- Taylor, S., Beechler, S. & Napier, N. (1996). Toward an Integrative Model of Strategic International Human Resource Management. *Academy of Management Review*, 21, 959-985.
- Tether, B. S., & Storey, D. J. (1998). Smaller firms and the development of Europe's high technology sectors: A framework for analysis and some statistical evidence. *Research Policy*, 26, 947-971.
- Tharenou, P. (2002). Receptivity to careers in international work – abroad and at home. *Australian Journal of Management*, 27, 129-138.
- Tharenou, P. (2008). Disruptive decisions to leave home: Gender and family differences in expatriation choices. *Organizational Behavior and Human Decision Processes* 105, 183–200.
- Tharenou, P., & Harvey, M. (2006). Examining the overseas staffing options utilized by Australian headquartered multinational corporations”, *International Journal of Human Resource Management*, 17, 1095–1114.
- Thompson, C. J., & Tambyah, S. K. (1999). Trying to be cosmopolitan. *Journal of Consumer Research*, 26/3, 214–241.

- Tregaskis, O., & Brewster, C. (2006). Converging or Diverging? A comparative analysis of trends in contingent employment practice in Europe over a decade. *Journal of International Business Studies*, 37, 111-126.
- Tung, R. (1998). American expatriates abroad: From neophytes to cosmopolitans. *Journal of World Business*, 33/2, 125–145.
- Tung, R. L. (2004). Female expatriates: The model global manager? *Organizational Dynamics*, 33/3, 243–253.
- Tyler, K. (2001). Focus on global HR management: don't fence her in. *HR Magazine*, 46/3, 70-77.
- Van Lange, P. A. M., Otten, W., De Bruin, E. M. N., & Joireman, J. A. (1997). Development of prosocial, individualistic, and competitive orientations: Theory and preliminary evidence. *Journal of Personality and Social Psychology*, 73/4, 733-746.
- Vance, C., & Paik, Y. (2001). Where do American women face their biggest obstacle to expatriate career success? Back in their own backyard. *Cross Cultural Management*, 8, 98–116.
- Vance, C. M., Paik, Y., & Semos, W. (1999). Biggest obstacles to career success of female American expatriates: Selection bias at home? Paper presented at the conference of the Academy of Management, Chicago, IL.
- Varma, A., Toh, S. M., & Budhwar, P. (2006). A new perspective on the female expatriate experience: The role of host country national categorization. *Journal of World Business*, 41/2, 112–120.
- Von Zedtwitz, M. (2004). Managing foreign R&D laboratories in China. *R&D Management*, 34 (4), 439-452.
- Welch, D., Steen, A., & Tahvanainen M. (2009). All pain, little gain? Reframing the value of international assignments. *International Journal of Human Resource Management*, 20, 1327-1343.
- Westwood, R. I., & Leung, S. M. (1994). The female expatriate manager experience: Coping with gender and culture. *International Studies of Management & Organization*, 24, 64–85.
- White, R., & Poynter, T. (1984). Strategies for foreign owned subsidiaries in Canada. *Business Quarterly*, 48, 59-69.

- Widmier, S. Brouthers, L.E., & Beamish, P. (2008). Expatriate or local? Japanese, subsidiary expatriate staffing strategies. *International Journal of Human Resource Management*, 19 (9), 1607-1621.
- Yang, N., (2007). A cross-cultural contextual model of work-family interfaces in managing international assignments. *Journal of International Business Research*, 6 (1), 1-13
- Zahra, S. A., George, G., & Dharwadkar, R. (2000). Entrepreneurship in multinational subsidiaries: The effects of corporate and local environmental contexts. Published in Conference Proceedings, Entrepreneurship, Academy of Management, Toronto, Canada.