**R&D employees’ tenure in MNC subsidiaries:**

**The role of institutional distance and experience**

**ABSTRACT**

Long tenure of research and development (R&D) employees helps organisations to utilise employees’ knowledge over a sustained time period and strengthen their competitive advantage. It also allows organisations to benefit from the training investments made on their R&D employees. Thus, identifying the determinants of R&D employees’ tenure is crucial for designing effective R&D employee retention strategies. This paper analyses the factors explaining R&D employees’ tenure in the subsidiaries of multinational corporations (MNCs). Building on institutional theory, we claim that formal and informal institutional distance between MNCs’ home and host country might lead to R&D employees’ short tenure in subsidiaries. We further suggest that R&D employees’ international experience and MNCs’ host country experience play a moderating role. We find support for our hypotheses mobilising an original database that combines patent data and the LinkedIn profiles of 939 R&D employees in 256 MNC subsidiaries in India.

**Keywords:** R&D employee tenure, institutional distance, multinational companies, experience, LinkedIn

## **1. Introduction**

MNC subsidiaries carry significant importance to MNCs’ global R&D investments, because subsidiaries contribute to not only developing products and technologies matching the local market needs in host countries, but also global knowledge augmentation in MNCs (Allen et al., 2018; Gassmann and Han, 2004; Govindarajan and Ramamurti, 2011; Papanastassio et al., 2020). For some MNCs, the overseas R&D centres represent more than 50% of their total R&D activities. General Electric’s Chinese and Indian subsidiaries constitute 63% of their global R&D staff (Gerybadze and Merk, 2014). To support such R&D activities, the retention of R&D employees is vital, because their departure from subsidiaries may lead to the leakage of subsidiary-level and/or company-level knowledge and jeopardise MNCs’ subsidiary-level and global R&D investments (Holm et al., 2020; Singh, 2007; Spencer, 2008). Researchers (Kale and Little, 2007; Lopes and Simões, 2020; Singh, 2007; Von Zedwitz et al., 2007) have discussed the high R&D employee turnover rates in MNC subsidiaries and how it can negatively impact MNCs’ business and deplete their technology advantages over local firms in host countries.

Moreover, R&D employees’ early turnover, i.e., employees leaving a subsidiary after a short tenure, may cause even more serious consequences for MNCs. From a productivity standpoint, short tenure does not provide adequate time and opportunities for subsidiaries to capitalise on the R&D employees’ competencies, for which they were initially hired. Also, employees do take time to settle in and acquire firm-specific competencies including the understanding of the workplace values (Jøranli, 2018; Luo et al., 2014) and employers' “idiosyncratic needs, organisational procedures, routines, complementary capabilities, and extramural relationships" (Cohen and Levinthal, 1990, p.135). Thus, short tenure reduces the R&D employees’ opportunity to contribute significantly to the MNC’s innovation productivity.

From a cost perspective, training R&D employees with firm-specific competencies requires significant investments (Borah et al., 2019; Zheng and Lamond, 2010), which can include sending R&D employees to the company headquarter and other overseas units for training (Ayentimi et al., 2017; Boadu et al., 2018). Thus, if they leave early, the subsidiary receives little or no return on (training) investments (Von Zedwitz et al., 2007). Further, by losing R&D employees after a short tenure, subsidiaries may face transaction and replacement costs too.

Hence, identifying the determinants of R&D employees’ tenure at MNC subsidiaries is vital for designing appropriate R&D employee retention strategies. Surprisingly, to date, R&D employees’ tenure and its determinants have remained largely under-explored in any context (Wright et al., 2018), including MNC subsidiaries. Drawing on institutional theory (North, 1991), we therefore ask the following research questions:

*To what extent do institutional differences between an MNC’s home and host country in terms of values and routines, i.e., “institutional distance”, affect host country R&D employees’ tenure at a subsidiary? And how can the impact of institutional distance be reduced?*

Institutional distance provides a suitable theoretical framework to explain host country R&D employees’ tenure at MNC subsidiaries. The social learning and the social identity theories suggest that organisations and individuals often derive their values and identify themselves with the institutional environment they originate from (Bandura, 1991; Bandura and Walters, 1977; Molinsky, 2013). Thus, MNC subsidiaries are likely to embrace the organisational values from their home country, also called the “**country-of-**origin effect” (Harzing and Sorge, 2003). Based on a case study of Swedish MNCs, Hayden and Edwards (2001) stated that MNCs tend "to be firmly embedded in, and strongly influenced by their country-of-origin” (p.132). An MNC may also implement common organisational values/routines across its global value chain to achieve homogeneity in managerial practices to facilitate better knowledge transfer among globally dispersed units (Yip et al., 1997).

Simultaneously, the values of individual employees in subsidiaries are likely to be influenced by the institutions of the host country, where they are born and raised. Social learning theory (Bandura and Walters, 1977) suggests that people often learn and shape their values and behaviour through instructions (e.g., taught by parents) and observation of other peoples’ behaviours and their outcomes (e.g., what behaviour is rewarded and what is not). Institutional values thus become embodied into personal values and routines. This explains the assumption that people from the same nation tend to “share the same culture and would exhibit similar behaviours” (Park and Nawakitphaitoon, 2018, p.16).

Thus, MNC subsidiaries’ organisational values and routines are influenced by the institutional environment of their home countries[[1]](#footnote-1), whereas the host country’s institutions shape R&D employees’ values and routines. Therefore, when there is high institutional distance between an MNC’s home and host country, the subsidiary employees are likely to experience discomfort, leading to their early turnover and short tenure. Prior studies have found evidence of institutional differences causing adjustment problems and early job withdrawal among non-R&D expatriates in MNC subsidiaries (Maertz Jr et al., 2009; Silbiger et al., 2017; 2021).

 We investigate this in the context of Indian R&D employees working at MNC subsidiaries in India. We develop and test hypotheses on an original database that combines patent and LinkedIn data of 939 Indian R&D employees that joined MNC subsidiaries after graduation and left for a different firm during the period 1996–2016. This paper focuses on host country R&D employees i.e., the host country nationals working in the R&D departments of MNC subsidiaries. Throughout the paper, the term ‘R&D employees’ is to be intended as ‘host country R&D employees’.

Our results indicate that both formal (regulatory) and informal (cultural) institutional distance negatively affect R&D employees’ tenure at MNC subsidiaries. We also found that the negative impact of institutional distance on R&D employees’ tenure is reduced by R&D employees’ international experience and MNCs’ host country experience.

This study offers several contributions. First, this paper draws attention to the neglected ‘temporal’ dimension of R&D employee turnover; whereas other studies looked at whether R&D employers stay or leave, we analyse the length of employment. Second, it is the first study to explain the effect of institutional distance on R&D employees’ tenure and how this effect could be mitigated, thereby offering important managerial recommendations for developing effective R&D employee retention strategies for subsidiaries. Lastly, we make a methodological contribution by utilising LinkedIn data to measure R&D employees’ tenure.

This paper is organised as follows. Next, we discuss extant literature and develop hypotheses. Then, we present the research design and results. The paper closes with a discussion of the results, their implications and future research avenues.

## **2. Literature review and hypotheses development**

Institutions are the “humanly devised constraints that structure political, economic and social interaction” (North, 1991, p.97) and can be formal and informal. Formal institutions include explicit legal/regulatory (therein regulatory), political and economic rules of a particular country; informal institutions encompass more implicit normative and cognitive dimensions (North, 1991). Institutional distance refers to the degree of dissimilarity across countries in formal and informal institutions (Kogut and Singh, 1988; Van Hoorn and Maseland, 2016).

 Below, we discuss how formal and informal institutional distance between an MNC’s home and host country could affect R&D employees’ tenure at subsidiaries and how this effect could be mitigated.

### 2.1 The role of regulatory and cultural distance on R&D employees’ tenure

Formal institutions include political, economic and regulatory dimensions. Here we focus on regulatory institutions because they are the most relevant for R&D[[2]](#footnote-2). A regulatory system’s strength influences the design and implementation of intellectual property (IP) protection routines (Keupp et al., 2009), which are central to R&D. MNCs from strong regulatory regimes (e.g., USA) tend to implement formal IP protection routines for preventing knowledge spillovers, e.g., assignment provisions, non-compete, non-solicitation and non-disclosure (NDA) contracts (Harwood, 2006; Manzini and Lazzarotti, 2016; Marx et al., 2015). If a contract is breached, companies would approach the judiciary and pursue legal cases against the R&D employee (Zhang et al., 2020). Strong regulatory regimes offer “legal recourse for victims of opportunistic conducts that negate the original terms of the contract” (Zhou and Poppo, 2010, p.865). Hence, IP contracts are legally enforceable. In contrast, in weak regulatory regimes (e.g., India), judiciary systems present relatively weaker remedies to opportunistic behaviour. Also, time-consuming disputes makes enforcing IP contracts challenging (Ahammad et al., 2018; Gassmann and Han, 2004). Cases stretching over long periods incur high litigation costs, resulting in companies resorting to informal routines for dispute resolution, e.g., outside court settlements (Ahammad et al., 2018; Lamin and Ramos, 2016), relationship development with the judiciary and customs (Keupp et al., 2009; Zhao and Tan, 2021). Others suggest that trust can be an effective substitute for contracts in weak regulatory systems (Zhou and Poppo, 2010). Thus, MNCs from weak institutional regimes often embrace informal IP protection routines.

High regulatory distance between an MNC’s home and host country, i.e., the differences between the countries’ regulatory (in this case, IP protection) norms and routines, can cause discomfort and job dissatisfaction in subsidiary employees. Particularly, R&D employees from a host country with a weak regulatory regime (e.g., India) may develop negative emotions due to requirements to follow formal IP protection routines when working in MNCs from strong regulatory regimes for several reasons. First, R&D employees may struggle to comprehend the operationalisation of IP contracts including term specificity, contingency adaptability and contract compliance (Luo, 2005). Specifically, they may lack understanding regarding the type of information that should or should not be shared under an NDA while collaborating internally and externally, leading to a constant fear that they might be taken to court by the company (Harwood, 2006).

Second, employees could be disturbed by the fact that adopting formal IP routines could hinder their “self-efficacy” (Bandura, 1986), i.e., “successfully perform specific (R&D) tasks and behaviours” (Zhu, 2017, p.214). For instance, employees may perceive that the requirement to sign NDAs could hamper their ability to form R&D collaborations and acquire external knowledge, thereby restricting their capacity to develop innovative ideas (Harwood, 2006). This could develop a fear in employees that the low productivity would stall their careers within and outside the subsidiary. Also, non-compete contracts and assignment provisions may induce a feeling that the firm is trying to “control” (Das and Teng, 1998) the employee’s career and inventions. Thus, an R&D employee may feel that a longer stay in the subsidiary could hinder their career trajectory and thus, consider leaving the subsidiary early.

Therefore, our first hypothesis states:

***H1:*** *The greater the regulatory distance between the MNC subsidiary’s home and host country, the shorter the tenure of an R&D employee in the subsidiary.*

Previous studies have extensively used national culture as the emissary of informal institutions, i.e., normative and cognitive institutions (e.g., Berry et al., 2010; Jensen and Szulanski, 2004). High cultural distance, i.e., the difference in cultural values between an MNC’s home and host country, may arouse negative emotions in its subsidiary’s R&D employees for several reasons.

First, similarly to distant regulatory routines, working with distant cultural values may negatively affect R&D employees’ innovation performance and can cast doubt over the benefits of staying long-term at the subsidiary. For instance, R&D employees from a collectivistic society where group-based learning, welfare and innovation values are preferred in the workplace (Pacheco et al., 2016) (e.g., India), may feel isolated and be devoid of learning opportunities when employed by subsidiaries with individual-oriented values and autonomy. Also, exposure to an individual-based competitive environment could create a sense of panic and pressure (Morris et al., 1993).

Then again, R&D employees from a risk-taking culture, may feel demoralised when working for MNCs from risk-averse countries as they may perceive that working within strict procedures may suppress their creativity (Efrat, 2014; Shane, 1993). Also, employees may be concerned that they are not offered adequate opportunities to pursue riskier projects, which is important for a successful R&D career (Asmawi and Mohan, 2011). Therefore, R&D employees may feel that the subsidiary’s distant cultural values are restraining them from producing high innovation outputs and a longer stay would dent their career progression.

Finally, cultural distance may also create challenges for “organisational identification” (Millward and Postmes, 2010), i.e., R&D employees can no longer identify themselves with the subsidiary and, subsequently, lose motivation to contribute to the job (Van Dick et al., 2004). For instance, cultural differences, including religious and linguistic differences, can create problems for R&D employees to communicate and coordinate effectively with other employees and dhere to the subsidiary’s mission. Consequently, a lack of belonging could also push employees to leave a subsidiary early.

Therefore, our second hypothesis states:

***H2:*** *The greater the cultural distance between the MNC subsidiary’s home and host country, the shorter the tenure of an R&D employee in the subsidiary.*

### 2.2 The moderating effect of R&D employees’ international experience

Research shows that individual experience can reduce stress and discomfort arising from having to follow unfamiliar routines and values in two ways. First, experience helps individuals acquire cognitive schemas in diverse areas (Borah and Ellwood, 2022), thereby catalysing the process of converting unfamiliar/dissonant cognitions into familiar/consonant cognitions (Festinger, 1957). International experience could help R&D employees acquire schemas about foreign regulatory routines and culture, which will become activated as familiar cognitions in their memory when exposed to a similar environment again (Le and Kroll, 2017). Additionally, international experience may require an R&D employee to work in multicultural teams (Le and Kroll, 2017; Manolopoulos et al., 2011), develop an understanding of how people from different institutional background work and the capability to foresee the differences they might face when required to work in an institutionally distant MNC. Hence, the values and routines adopted by an institutionally distant MNC will no longer appear as ‘non-fitting’ (Festinger, 1957) to the R&D employees.

Second, international experience can mitigate discomfort and stress arising from the institutional distance through a process of ‘trivialisation’ (Simon et al., 1995). This prompts an individual to justify and rationalise unfamiliar values and routines (that they face at subsidiaries) with appropriate logical explanations (Lowell, 2012), helping the individual develop a more positive and accommodating attitude (Simon et al., 1995) towards subsidiaries’ workplace environment. For instance, R&D employees with prior experience in multicultural teams may think positively about working in an institutionally different workplace and exhibit adaptability to unfamiliar cultural values and routines (Le and Kroll, 2017).

Thus, R&D employees with international experience are less likely to experience discomfort and stress stemming from regulatory and cultural distance and leave the subsidiary after a short tenure. So, our third hypothesis is:

***H3a:*** *An R&D employee’s international experience moderates positively the negative relationship between regulatory distance between the MNC subsidiary’s home and host country and the employee’s tenure, such that the negative effect of regulatory distance on R&D employees’ tenure is lower for employees with high international experience.*

***H3b:*** *An R&D employee’s international experience moderates positively the negative relationship between cultural distance between the MNC subsidiary’s home and host country and the employee’s tenure, such that the negative effect of cultural distance on R&D employees’ tenure is lower for employees with high international experience.*

### 2.3 The moderating effect of MNCs’ host country experience

Studies show that MNCs from institutionally distant home countries over time develop familiarity with a host country’s institutions through acquiring local experience (Chandler and Hwang, 2015; Perkins, 2014; Putzhammer et al., 2018). A highly experienced MNC in a host country is expected to have confronted a large number and variety of institutional challenges, upon which it can strengthen the depth and breadth of its knowledge of the local regulations and culture (Hitt et al., 2005). High host country experience also allows MNCs to learn ‘vicariously’, i.e., through interactions with a variety of external organisations (Chandler and Hwang, 2015) such as regulators, civil societies and local firms (Perkins, 2014).

Interactions with regulators can help MNCs understand better the current and future trade and labour policies (Yang et al., 2004). By interacting with local firms, MNCs can embrace the local cultural values and regulatory routines implemented, which may help an MNC in dealing with such differences (Doornich, 2018) while improving their ability to incorporate the local institutional norms to its organisational profile (Hitt et al., 2005). For example, the adaptability of Microsoft’s IP protection routines to the weak regulatory environment in China increased with experience (Yang et al., 2004). Initially, Microsoft relied on enforcing copyrights and contracts to fight piracy in China. However, over time, Microsoft realised that inefficiencies of such formal IP protection and successfully implemented several informal routines including collaborating with importers, exporters and customs officials to identify IP infringements and curb piracy.

Hence, high host country experience can help MNCs harmonise organisational values and routines with host countries’ regulations and culture, thereby offering ‘familiar’ workplace environment to R&D employees and reducing the likelihood of their early departure.

Hence, our fourth hypothesis states:

***H4a:*** *An* *MNC’s experience in a host country positively moderates the negative relationship between regulatory distance between the MNC subsidiary’s home and host country and R&D employees’ tenure, such that the negative effect of regulatory distance on R&D employees’ tenure is lower in MNCs with high host country experience.*

***H4b:*** *An MNC’s experience in a host country positively moderates the negative relationship between cultural distance between the MNC subsidiary’s home and host country and R&D employees’ tenure, such that the negative effect of cultural distance on R&D employees’ tenure is lower in MNCs with high host country experience.*

Below, Figure 1 reports the research framework.

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## **3. Methods**

### ****3.1 Research setting****

We chose Indian R&D employees working in Indian subsidiaries of information and communication technologies (ICT)-based foreign MNCs as the empirical setting for two reasons. First, compared to developed countries, MNCs need to make more training investments in emerging economies, particularly to prepare recently graduated engineers for R&D work, because most of them lack even the basic skills required in R&D departments (Aspiring Minds, 2019; Borah et al., 2019, 2021). Borah et al. (2019) document several examples from India of MNCs investing significantly in the teaching programmes of those universities, from which they recruit R&D engineers. Thus, if R&D employees leave subsidiaries early, MNCs receive little return on investments. That is also the reason why we considered only newly graduated R&D employees for analysis, i.e., those who joined an MNC’s Indian subsidiary on immediately after their university education and later left the subsidiary for another firm within India.

Second, compared to other host countries, losing knowledge via R&D employees’ turnover is a grave concern for MNC subsidiaries in emerging economies. Searching for quick technology catch-up, local firms in emerging countries often target hiring R&D employees from MNC subsidiaries to access the advanced technologies brought in by MNCs and compete with them (Luo et al., 2011; Minagawa Jr et al., 2007), and such actions from local firms often go unpunished due to emerging countries’ weak IP regimes (Keupp et al., 2009).

### ****3.1 Data****

We refer to those (Indian) R&D employees who have been granted at least one United States Patent and Trademark Office (USPTO) patent in India during the 2016 calendar year. This allows to focus on valuable R&D employees that a subsidiary might not want to lose. To screen the USPTO patents issued to Indian R&D employees in 2016 we followed the criteria that the “R&D employee country” was “India” and the “issue date” was between 1st January and 31st December 2016.

We logged into LinkedIn on a paid subscription to access R&D employees’ profiles to track their employment events and tenures. India has the highest number of LinkedIn users after the USA (STATISTA, 2018), and thus, presents a fitting context for utilising these data. We linked the names reported as R&D employees in USPTO patents with the LinkedIn profile names if there was a match between the employee’s first name and surname AND the employer’s name. We collected LinkedIn data for only those R&D employees who are Indian nationals and have a completeLinkedIn profile. A LinkedIn profile is considered “complete” if it reports employers’ names, locations (country) and employment periods AND the education period, qualification and institute names AND no discontinuity in the career history of more than a year. Eliminating foreign nationals from our final sample was crucial because, they may not experience discomfort in a foreign subsidiary in India. Following Breschi et al. (2018), we assumed an R&D employee to hold foreign nationality if the school-level education is obtained abroad.

In total, we identified 988 R&D employees who joined the Indian subsidiaries of 272 MNCs from 32 countries soon after graduating and then left the subsidiary for another firm in India during 1996–2016. We found that female employees constituted only a tiny proportion of our sample (5%). Therefore due to their empirical insignificance, female employees were eliminated from our sample[[3]](#footnote-3). So, our final sample comprise 939 employees from 256 MNC subsidiaries in India.

To date, patents have been the go-to source for measuring R&D employee mobility and tenure (see Alnuaimi et al., 2012; Hoisl, 2007; Singh, 2007). The patent method recognises a mobility event if an individual (e.g., Employee-X1) files patents under two different organisations (Alpha—a company specialising in IT networks and Beta—a company specialising in cloud technologies) in two separate years (2005 and 2012, respectively), as shown in Figure 2.

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However, this method possesses several limitations. LinkedIn data helps to overcome these, as Figure 3 shows. Some of these limitations have also been highlighted by Ge et al. (2016).

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### ****3.2 Variables****

**3.2.1 Dependent variable**

The dependent variable is an R&D employee’s tenure, i.e., the number of months spent in an MNC’s subsidiary before leaving for a different company.

**3.2.2 Explanatory variables**

***Formal institutional distance (regulatory distance)***

To measure regulatory distance, we use the difference in rule of law scores (obtained from the *Worldwide Governance Indicators*) between an MNC’s home country(*RLHOMEt)*) and home and India (*RLINDIAt*), using the following equation proposed by Kogut and Singh (1988).

$$RD\_{HOMEt-INDIAt}=\frac{(RL\_{HOMEt}-RL\_{INDIAt})^{2}}{V\_{t}}$$

*RDHOMEt-INDIAt*is the regulatory distance between the two countries in year *t*. *Vt* is the variance in the rule of law scores of all countries in year *t*. Rule of law measures the effectiveness of national judicial systems and IP rights, as used in many studies (e.g., Choi and Contractor, 2016).

***Informal institutional distance (cultural distance)***

We measure cultural distance using Hofstede’s five cultural dimensions– power distance-PD (irregular power distribution), individualism (prioritisation of individual interests over that of groups and interpersonal relationships), uncertainty avoidance-UA (low tolerance towards uncertainty and risk), masculinity (preference towards personal achievements and materialistic rewards over quality of life) and long-term orientation-LTO (consideration of long-term outcomes while making decisions) (Hofstede, 1991), as used in many studies (e.g., Choi and Contractor, 2016; Dimitratos et al., 2016; Elango et al., 2013). We study the effect of cultural distance on R&D employees’ tenure separately for different dimensions as Shenkar (2001) suggested, using the following equation:

$$CD\_{HOMEx-INDIAx}=\frac{(C\_{HOMEx}-C\_{INDIAx})^{2}}{V\_{x}}$$

*CDHOMEx-INDIAx*is the cultural distance between the home country and India for the *xth* cultural dimension. *Vx* denotes the variance among the scores of all the nations for the *xth* cultural dimension.

**3.2.3 Moderating variables**

The first moderator is the employee’s international experience, measured by the total number of months spent in overseas education as reported in LinkedIn profiles. Since we track R&D employees from their first job in India after graduating, therefore their international experience would have been acquired during their education.

For the second moderator, we measure an MNC’s experience in India by the age of the MNC’s Indian subsidiary (in months), which was retrieved from the *Orbis* database. For each MNC, we checked the year in which its first subsidiary[[4]](#footnote-4) was established in India irrespective of the functional expertise of the subsidiary, e.g., sales, marketing, manufacturing or R&D. This is because, for MNCs that enter a host country through non-R&D subsidiaries, the learning about the local institutions accumulated through non-R&D activities[[5]](#footnote-5) may be relevant and transferred to its subsequent R&D operations in the host country.

**3.2.4 Control variables**

Among institutional factors, we control for the “economic distance”, i.e., the difference in the economic growth of MNCs’ home and host country (Berry et al., 2010), because foreign firms may struggle to develop compensation strategies to satisfy the wage expectations of R&D employees in an economically distant host country, resulting in short tenure. We control for the “opportunity to move” by creating a dummy variable with a value of ‘1’ if the subsidiary is in an industrial cluster in India, and ‘0’ otherwise, since R&D employees may encounter more career opportunities in industrial clusters, where there is a high agglomeration of firms. By drawing on prior studies (Borah et al., 2021; Sharma et al., 2012), we classify the following cities as industrial clusters in India: Bangalore, Chennai, Delhi National Capital Region (NCR), Hyderabad, Kolkata, Mumbai, and Pune[[6]](#footnote-6).

Among firm-level factors, we control for “subsidiary’s knowledge stock”, measured by USPTO granted patents, since firms with a large knowledge stock could offer more learning opportunities, thereby encouraging R&D employees to stay longer. Concerning employee-level controls, we include R&D employees’ education qualification by creating three categorical variables for Bachelor, Master and PhD education levels. R&D employees’ age is controlled by including both age and age2 in the regressions since employees’ tenure-age relationship tends to be inverted U-shaped (Sturman, 2003). Table 1 reports the operationalisation of all variables.

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### ****3.3 The model****

Our study includes data on R&D employees’ employment in foreign subsidiaries in India for 20 years during 1996–2016. The dependent variable, R&D employee’s tenure, is a continuous variable and the model is estimated using Ordinary Least Squares. To control for year-specific dynamics, we used a fixed-effect command with year variables. The full model is:

*R&D employee’s tenure =α+ β1(regulatory distance) + β2(cultural distance) + β3(R&D employee’s international experience) + β4(MNC’s host country experience) + β5(regulatory distance* × *R&D employee’s international experience) + β6(cultural distance* × *R&D employee’s international experience) + β7(regulatory distance* × *MNC’s host country experience) + β8(cultural distance* × *MNC’s host country experience) + β9(controls)+ YearFE+ε*

## **4. Results**

### ****4.1 Descriptive statistics****

No strong correlation is observed between the variables as Table 2 reports. Moreover, we performed the variance-inflation-factor (VIF) test for the predictor variables. The maximum VIF (4.6) is well below multicollinearity limit (=10, Hair et al., 1992). Thus, multicollinearity is not a concern in our analysis.

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### ****4.2 Results****

Table 3 reports the models testing H1 and H2. Model (1) reports the results for the full sample. The coefficient of regulatory distance is negative and significant, supporting H1. To test the effect of cultural distance, we introduce the five components of this, i.e., power distance (PD), individualism, uncertainty avoidance (UA), masculinity and long-term orientation (LTO) distance. The coefficients of individualism, UA and LTO are negative and significant. We differentiate between positive and negative distance (Shenkar, 2001; Zaheer et al., 2012) by splitting the sample into two sub-samples based on whether the distance between MNCs’ home country and India is negative (home country’s institutional norms are weaker than India’s) or positive (stronger)[[7]](#footnote-7), respectively, in models (2) to (4) and models (5) to (9). We observed a negative and significant coefficient for regulatory distance when regulatory distance is positive, indicating that R&D employees spend shorter tenure in subsidiaries from stronger regulatory regimes. The coefficients of individualism, UA, masculinity and LTO distance are negative and significant when the corresponding distance is positive, indicating that R&D employees’ tenure tend to be shorter in subsidiaries from countries with high individualism, UA, masculinity and LTO. The coefficient of PD is negative and significant when PD between the home country and India is negative, suggesting that R&D employees’ tenure is likely to be shorter in subsidiaries from a country with a lower PD than India’s. Thus, both H1 and H2 are supported when the specific directions of the regulatory and cultural distance are considered.

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Tables 4 and 5 show the results for H3 and H4. To examine the moderation effect of R&D employees’ international experience and MNCs’ host country experience, we included interaction terms between the independent variables (regulatory and cultural distance) and the moderators (employees’ international and MNCs’ host country experience) as predictors in the regression model. The coefficient of the interaction term between R&D employees’ international experience and regulatory distance is negative and significant, while the magnitude is substantially lower (-0.28) with the interaction effect than without (-33.73, Model-12, Table 4). Thus, H3a is supported. The coefficient of the interaction term between R&D employees’ international experience and UA distance is positive and significant, while the interaction effect of R&D employees’ international experience on LTO distance is negative, with a lower magnitude and significant coefficient. Thus, H3b is supported for the UA and LTO dimensions.

The coefficient of the interaction term between regulatory distance and MNCs’ host country experience is negative and significant, while the magnitude of the coefficient is remarkably lower (-0.04) than that without the interaction term (-31.28, Model-15), which supports H4a. Then, the coefficients of the interaction terms between MNCs’ host country experience and individualism distance, UA distance and masculinity distance are positive and significant. The interaction term between LTO distance and MNCs’ host country experience is negative and significant; however, as expected, the magnitude of the coefficient is lower (-0.03) than that without the interaction term (-5.78, Model-15). These results support H4b.

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The results for the control variables are consistent across the different models (Tables 3, 4 and 5). The coefficient of subsidiaries knowledge stock is negative and significant, possibly because a subsidiary’s knowledge stock could be a proxy for a high knowledge intensity employer from where employees are more likely to be poached. We observe a positive and significant coefficient for economic distance, indicating that R&D employees remain longer in subsidiaries from countries that are economically stronger than India. This is possibly because longer tenure in MNCs from wealthier home countries may offer more professional development opportunities to R&D employees, including migration to the MNCs’ home country. Lastly, the coefficient of opportunity to move is negative and significant, suggesting that R&D employees spend a shorter tenure in subsidiaries that are located within industrial clusters.

### ****4.3 Post-hoc analysis****

We further examined R&D employees’ destinations after leaving subsidiaries. It is plausible to expect that if employees leave because of institutional differences, they would move to either local firms (which offer institutional proximity) or MNCs with high host country experience since, as H4 argues, these MNCs could offer a more familiar working environment. We observed that, out of 939 R&D employees, 93 (9.9%) moved to locally established firms/start-ups. The remaining 846 employees (90.1%) moved to the subsidiaries of other MNCs and, in most occasions (71%), the destination MNC’s experience in India is higher than the source (previous) MNC’s (Figure 4). The regression results show that the coefficient of the destination MNC’s host country experience is negative and significant, indicating that when the destination subsidiary is more experienced in India compared to the source MNC, R&D employees are likely to quit after a short tenure and join the more experienced one (Model-16, Table 6).

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### ****4.4 Robustness checks****

For robustness checks, we used the intellectual property regulation (IPR) Index (2016) and Globe’s value scores (House et al., 2004) as alternative measures of regulatory and cultural distance, respectively. Overall, results using these indicators were consistent with those reported earlier. The only difference was observed for UA distance. We obtained a positive and significant coefficient using the Globe’s scores but obtained a negative and significant coefficient using Hofstede’s scores across the various models. This difference in results could be due to the different elements included in the two measures. Hofstede’s measurement of UA refers to the degree of stress, employment stability and rule orientation at workplaces in a society, whereas the Globe’s measurement of UA includes the degree of orderliness, consistency, structure, social requirements and rules or law in the society (Venaik and Brewer, 2010).

## **5. Discussion**

In this study, we found that Indian R&D employees spend short tenure at MNC subsidiaries from institutionally distant home countries, particularly countries characterised by low power distance, individualistic, uncertainty avoiding, masculine and short-term orientation values and formal IP protection routines.

 This finding could be explained by integrating the institutional distance framework with the “cognitive dissonance” theory (Festinger, 1957). Using the institutional distance framework, we argue that Indian R&D employees face unfamiliar values and routines at subsidiaries from institutionally distant countries. According to the social learning/identity theories, organisations and individuals often derive their values and routines from the institutional environment they originate from (Bandura, 1991; Molinsky, 2013). Thus, MNC subsidiaries and host country employees are likely to embrace values and routines from the institutional environment of home country and host country, respectively. Thus, a mismatch in values and routines arises between the subsidiary and host country R&D employees, which grows with institutional distance.

Now, the cognitive dissonance theory contends that individuals aspire to achieve "cognitive consistency" (Hinojosa et al., 2017), i.e., to work with familiar values and routines, and develop cognitive dissonance (strong negative emotions) when they are denied such an opportunity. Leaving an organisation early is a common response shown by employees experiencing cognitive dissonance (Lovett et al., 2004). Using this theory, we argue that when Indian R&D employees join MNCs from institutionally distant countries, the inability to attain cognitive consistency (i.e., to work with high power distance, collectivistic, uncertainty accepting, feminine and long-term orientation values and informal IP protection routines), could trigger cognitive dissonance and consequently their short tenure.

The moderation of R&D employee’ international experience suggests that internationally experienced Indian employees can cope better with the mismatch, possibly because international experience provides “exposure to different, even conflicting value systems and worldviews of culturally [and regulatory] distant countries” (Le and Kroll, 2017, p.578). Additionally, it can help employees develop justifications for working with distant regulatory routines and cultural values, which ‘trivialises’ (Lowell, 2012; Simon et al., 1995) the negative emotions.

Finally, the moderation of MNCs’ host country experience contends that, over time, subsidiaries can develop an organisational regulatory and cultural profile that is compatible with the Indian institutions, where Indian R&D employees experience less unfamiliarity and discomfort and are likely to spend longer tenure.

### ****5.1 Implications for research****

This paper contributes to the literature on managing human resources (HR) in R&D in an international context. Past research has studied the determinants of R&D employees’ departure (i.e., the decision to stay or quit) without explaining much the temporal dimensions of R&D employees’ departure (Wright et al., 2018), i.e., how long R&D employees stay before moving and why some R&D employees leave sooner than others. Our study fills this important research lacuna.

Even within the literature on R&D employees’ departure (not necessarily tenure), the role of institutional factors has been ignored (Wright et al., 2018), whereas contracts, compensation, work-life balance and knowledge-based HR retention strategies dominated the discussions (Ejermo and Schubert, 2017; Marx et al., 201; Wright et al., 2018). We argue that such strategies may not be sufficient to design effective R&D employee retention strategies at MNCs, because these generic strategies tend to overlook the impact of cross-institutional work environment, typical of MNCs subsidiaries, on employment dynamics. Our study has addressed this issue.

This paper also contributes to the international business and management literature in three fronts. First, by applying the institutional distance framework to study micro-level issues, which has so far been used predominantly at the organisational level, e.g., to study the difficulties for MNCs to attain productivity and legitimacy (Higón and Antolín, 2012; Salomon and Wu, 2012), collaborate (Choi and Contractor, 2016), engage in cross-border M&A (Dikova et al., 2019) and transfer knowledge (Ando and Paik, 2013), offering little consideration to examining how institutional distance could cause individual-level challenges in MNCs.

Second, the classification between positive and negative institutional distance also enables us to argue that individuals may not experience cognitive dissonance just because there exist institutional differences at the workplace, as argued previously (Le and Kroll, 2017); rather, it may be experienced only when these differences intensifies in a particular direction— positive or negative. Thus, we answer and reiterate the quest by Shenkar (2001) and Zaheer et al. (2012) for considering directions in institutional distance studies.

Third, the observed positive relationship between economic distance and R&D employee tenure contributes to the debate that distance may not always a liability for MNCs in a host country as argued (Slangen, 2006). To date, the dark side of institutional distance have been mostly explored. On a more positive note, the distant economic practices of such MNCs act as organisational resources (Morosini et al., 1998) in the host country and help reduce R&D employees’ turnover.

Lastly, we have shown that LinkedIn records can provide a valuable alternative data source to patents for collecting information on R&D employees’ tenure and mobility. The methodology and reliability steps presented here for collecting LinkedIn data provide guidelines for studies which wish to collect similar data. We envisage that knowledge worker mobility research will greatly benefit from using LinkedIn data, for example in the context of mobility within and across organisational and geographical borders.

### ****5.2 Implications for R&D Managers****

Our results provide some significant managerial implications. To increase R&D employees’ tenure in subsidiaries, MNCs should control institutional distance and be open to adapt subsidiaries' regulatory and cultural profiles to the host country’s institutions—also known as “multi-domestic” (Roth et al., 1991) or “local isomorphism” strategy (Salomon and Wu, 2012). To do so, the subsidiary must develop a solid understanding of the local institutions, including the more informal and tacit dimensions, which may take time since this might require the MNC to learn experimentally and interact with a variety of host country stakeholders. We suggest that MNCs operating in a new host country could prevent R&D employees’ departures by hiring those with international experience.

However, the adoption of a multi-domestic or local isomorphism strategy should be contingent upon the forms of institutional distance. To increase the tenure of R&D employees in the subsidiary, such an approach could eliminate the challenges resulting from regulatory and cultural distance; but, it could potentially also blemish the advantages of economic distance.

It is well known that local firms in emerging economies tend to poach R&D employees from foreign MNCs to bridge their technological gap (Sheldon and Li, 2013). Our results indicate that local firms could adopt a strategy of targeting (“selective poaching”) internationally inexperienced R&D employees working in institutionally distant MNC subsidiaries. This is because R&D employees with no international experience are more likely to be affected by high cognitive dissonance in such subsidiaries and could be seeking job opportunities in a more familiar environment. However, local firms may still need to upgrade their HR management strategies to match those of their foreign counterparts. Failing to do this, R&D employees may still prefer joining other MNC subsidiaries that are more experienced in the host country.

### 5.3 Limitations and future research directions

This study carries some limitations. First, our findings are based on R&D employee data in a single host country (India) and one industry (ICT). Future research could generalise our findings in other countries and industries. Second, LinkedIn and patent data do not provide other information such as salary and bonuses, which could moderate the impact of institutional distance on R&D employees’ tenure. Future research could address this limitation by using secondary data on salaries or through a survey. Third, although we have taken substantial steps to ensure the reliability of data collected from LinkedIn, limitations with these data may still exist. Specifically, concerns may remain regarding the accuracy of the self-provided information.

Future studies could further explore (innovation) productivity associated with R&D employees’ tenure both at the organisational level (e.g., patent production) and individual employee level (e.g., career progression). Studies could also investigate R&D employees’ tenure at local firms in host countries and if the determinants differ from those identified for foreign subsidiaries in this paper. Finally, future studies could develop more refined measures of experience that include the depth and breadth of both MNC-level and employee-level experience to support unfamiliarity reduction strategies.

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**Figures and Tables**

Regulatory distance between the home and host country of MNCs

Cultural distance between the home and host country of MNCs

Host country R&D employees’ tenure at MNC subsidiaries

R&D employees’ international experience

MNCs’ experience in the host country

H1

H2

H3a

H3b

H4a

H4b

Figure 1 Research Framework; dotted boxes and dotted lines refer to moderating factors and moderating effects, respectively.

Alpha

Beta

Employee-X1 files a patent under Alpha in 2005

Employee-X1 files a patent under Beta in 2012

Employee-X1 moves from Alpha to Beta sometime between 2005 and 2012

Figure 2 Visualisation of how patent data measures mobility of R&D employees

Alpha

Beta

Employee-X1 files a patent under Alpha in 2005

Employee- X1 files a patent under Beta in 2012

Exact year of the move is unknown

Alpha

Beta

Employee-X1 files a patent under Alpha in 2005

Employee- X1 files a patent under Beta in 2012

The permanent and/or temporary nature of employment is unknown

Alpha

Beta

Employee- X3 files a patent under Alpha in 2005

Employee- X3 files a patent under Beta in 2012

Move not identified

Gamma

Move not identified

Employee- X3 joins Gamma (a database company) in 2008, but files no patent

Alpha

Beta

Employee- X4 files a patent under Alpha in 2005

Employee- X4 works in Alpha-Beta collaboration in 2012 and files a patent under Beta

Alpha

This is collaboration, not mobility

Yes, LinkedIn data provides information on the year and month in which an individual changes jobs.

Inability to identify exact year of a mobility event results in wrong tenure calculations.

**Limitation 2: Patent cannot distinguish between forced and voluntary mobility events**

**Limitation 1: Patents cannot identify exactly when an R&D employee moved out of a company**

**Limitation 4: Patents may misinterpret collaborations as mobility events**

Inability to identify the type of mobility. Controlling the mobility type is vital as there might be factors other than institutional distance that might trigger forced mobility events.

**Limitation 3: Patents cannot identify mobility events where the R&D employee fails to apply for patents**

Inability to identify all mobility events, resulting in wrong tenure calculations and identification of false destination firms. Identification of true destination firm is important for our post-hoc analysis (see Section 4.3).

Inability to identify true mobility event, and this results in wrong tenure calculations.

Yes, LinkedIn data (particularly job title and descriptions) helps distinguish between collaborations and job changes.

Yes, LinkedIn data provides information on all job changes, including those, where an individual fails to file patents.

Yes, LinkedIn data (particularly job descriptions and titles e.g. volunteer, interns and trainee) provides information on the temporary or permanent nature of employment.

**Visual representation of limitations**

**Implications of the limitation for this study**

**Can LinkedIn data help overcome this limitation?**

Figure 3 Advantages of using LinkedIn versus patent data for measuring R&D employee mobility and associated tenure

MNC subsidiary in India

6 (0.6%)

846 (90.1%)

87 (9.3%)

Destination MNC has less or equal experience in India than the source MNC (242 cases)

Local firms

Own ventures

MNC subsidiary in India

Destination MNC has more experience in India than the source MNC (604 cases)

Figure 4 Where do R&D employees go after moving out of MNC subsidiaries in India?

Table 1 List of variables

|  |  |
| --- | --- |
| **Variable name** | **Definition and measurement** |
| Dependent variable |  |
| R&D employee’s tenure | Number of months spent by an R&D employee in a subsidiary before leaving to join a local firm, start-up or subsidiary of another MNC. |
| Explanatory variables |  |
| Regulatory distance (RD) | Regulatory differences between the MNC’s home country and India, measured using rule of law scores from the Worldwide Governance Indicators database (1996:2016). |
| Power distance (PD) | Cultural differences with respect to power distance between the MNC’s home country and India, measured using Hofstede’s scores (<https://www.hofstede-insights.com>). |
| Individualism distance (ID) | Cultural differences with respect to individualism between the MNC’s home country and India, measured using Hofstede’s scores (<https://www.hofstede-insights.com>). |
| Uncertainty avoidance distance (UA) | Cultural differences with respect to uncertainty avoidance between the MNC’s home country and India, measured using Hofstede’s scores (<https://www.hofstede-insights.com>). |
| Masculinity distance (MD) | Cultural differences with respect to masculinity between the MNC’s home country and India, measured using Hofstede’s scores (<https://www.hofstede-insights.com>). |
| Long-term orientation distance (LTO) | Cultural differences with respect to the long-term orientation between the MNC’s home country and India, measured using Hofstede’s scores (<https://www.hofstede-insights.com>). |
| Moderators |  |
| MNC’s host country experience | Experience with an MNC in India until a given year in which the R&D employee joins one of the MNC’s Indian subsidiaries, measured in months. |
| R&D employee’s international experience | International experience of an R&D employee accumulated through education in a foreign country, measured in the number of months. The location of education information available on LinkedIn profiles is used to recognise the R&D employee’s experience abroad. |
| Control variables |  |
| Opportunity to move | Availability of job opportunities around the MNC subsidiary’s location. We assign a dummy variable value ‘1’ if the subsidiary is located in an industrial cluster in India and ‘0’ otherwise. |
| Economic distance | Economic differences between the home country and India, measured using GDP per capita scores from the World Bank database (1996:2016). |
| Subsidiary’s knowledge stock | Total number of USPTO patents granted to the subsidiary until the year in which the R&D employee joins the subsidiary. Five categorical variables were developed: ‘0’ for ‘no patents’, ‘1’ for ‘1–100 patents’, ‘2’ for ‘100–500 patents’, ‘3’ for ‘500–1,000 patents’ and ‘4’ for ‘>1,000 patents’. |
| R&D employee’s age | Age of the R&D employee at the year in which they join the subsidiary. |

Table 2 Descriptive statistics and correlation between variables

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Mean** | **St. Dev.** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** |
| R&D employees’ educational qualification | 1.45 | 0.59 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| R&D employees’ international exp.  | 3.69 | 12.18 | 0.55 | 1 |  |  |  |  |  |  |  |  |  |  |  |  |
| R&D employees’ age | 24.04 | 2.75 | 0.52 | 0.38 | 1 |  |  |  |  |  |  |  |  |  |  |  |
| Subsidiary’s knowledge stock | 0.51 | 0.66 | 0.02 | 0.05 | 0.03 | 1 |  |  |  |  |  |  |  |  |  |  |
| MNC’s host country experience  | 105.68 | 140.21 | -0.02 | -0.05 | 0.05 | 0.29 | 1 |  |  |  |  |  |  |  |  |  |
| Economic distance | 6.03 | 2.73 | 0.03 | 0.02 | -0.03 | 0.00 | -0.07 | 1 |  |  |  |  |  |  |  |  |
| Opportunity to move | 0.95 | 0.22 | 0.01 | -0.03 | -0.01 | -0.04 | 0.00 | -0.08 | 1 |  |  |  |  |  |  |  |
| Regulatory distance  | 1.95 | 0.68 | -0.05 | 0.00 | -0.03 | 0.33 | 0.25 | 0.26 | -0.08 | 1 |  |  |  |  |  |  |
| Power distance  | 3.00 | 1.19 | 0.00 | -0.01 | -0.05 | 0.09 | 0.10 | 0.46 | -0.06 | 0.58 | 1 |  |  |  |  |  |
| Individualism distance | 2.52 | 1.12 | 0.08 | 0.04 | -0.10 | 0.13 | -0.19 | 0.19 | 0.03 | -0.06 | 0.12 | 1 |  |  |  |  |
| Uncertainty avoidance distance  | 0.69 | 1.34 | -0.02 | 0.01 | 0.09 | -0.14 | 0.01 | -0.40 | 0.03 | -0.38 | -0.65 | -0.65 | 1 |  |  |  |
| Masculinity distance  | 0.61 | 1.44 | 0.01 | 0.02 | 0.08 | -0.09 | 0.41 | -0.07 | 0.01 | 0.16 | 0.08 | -0.45 | 0.25 | 1 |  |  |
| Long-term orientation distance  | 1.22 | 0.84 | 0.01 | -0.03 | 0.02 | -0.02 | -0.04 | -0.35 | 0.04 | -0.45 | -0.38 | -0.13 | 0.39 | -0.08 | 1 |  |
| R&D employees’ tenure | 43.58 | 35.47 | 0.07 | 0.05 | 0.09 | 0.10 | 0.08 | 0.14 | -0.44 | 0.02 | 0.04 | -0.03 | -0.01 | -0.01 | -0.02 | 1 |

Table 3 Relationship between institutional distance and R&D employees’ tenure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **R&D employees’ tenure** | **Full sample** | **Negative institutional distance** |  | **Positive institutional distance** |
| **PD** | **MD** | **LTD** |  | **RD** | **ID** | **UAD** | **MD** | **LTOD** |
| **(1)** | **(2)** | **(3)** | **(4)** |  | **(5)** | **(6)** | **(7)** | **(8)** | **(9)** |
| R&D employees’ education qualification | 0.80 (1.61) | 1.07 (1.56) | 10.87\*\* (4.33) | 0.39 (1.83) |  | 1.39 (1.55) | 2.45 (1.62) | 0.67 (1.65) | -0.78 (1.69) | 2.63 (3.15) |
| R&D employees’ international exp. | 0.17\*\* (0.07) | 0.18\*\*\* (0.07) | -0.08 (0.21) | 0.21\*\*\* (0.07) |  | 0.18\*\*\* (0.07) | 0.20\*\*\* (0.07) | 0.18\*\* (0.07) | 0.19\*\*\* (0.07) | 0.11 (0.17) |
| R&D employees’ age | 1.27 (2.12) | -0.11 (2.05) | -2.18 (4.30) | 0.08 (3.19) |  | 0.32 (2.03) | -2.03 (2.22) | 1.82 (2.14) | 1.88 (2.72) | 1.42 (3.04) |
| R&D employees’ age2 | -0.03 (0.04) | 0.00 (0.04) | 0.02 (0.07) | 0.00 (0.06) |  | -0.01 (0.04) | 0.03 (0.04) | -0.03 (0.04) | -0.03 (0.05) | -0.03 (0.05) |
| Subsidiary’s knowledge stock | -7.64\*\*\* (1.28) | -6.71\*\*\* (1.23) | -17.90\*\*\* (4.65) | -3.43\*\* (1.36) |  | -6.42\*\*\* (1.23) | -5.22\*\*\* (1.22) | -7.85\*\*\* (1.31) | -4.75\*\*\* (1.35) | -20.84\*\*\* (3.30) |
| MNC’s host country exp. | 0.02\*\*\* (0.01) | 0.01\* (0.01) | 0.01 (0.01) | 0.00 (0.01) |  | 0.01\* (0.01) | 0.01 (0.01) | 0.02\*\*\* (0.01) | 0.00 (0.01) | 0.02\*\*\* (0.01) |
| Economic distance | 5.23\*\*\* (0.36) | 4.75\*\*\* (0.35) | 15.36\*\*\* (3.88) | 6.37\*\*\* (0.63) |  | 4.61\*\*\* (0.35) | 4.51\*\*\* (0.38) | 5.37\*\*\* (0.38) | 6.02\*\*\* (0.39) | 3.42\*\*\* (0.74) |
| Opportunity to move | -30.42\*\*\* (3.51)  | -28.30\*\*\* (3.37) | -55.86\*\*\* (10.64) | -24.16\*\*\* (3.56) |  | -28.11\*\*\* (3.36) | -28.32\*\*\* (3.31) | -29.15\*\*\* (3.58) | -24.99\*\*\* (3.50) | -35.69\*\*\* (7.51) |
| Regulatory distance (RD) | -34.24\*\*\* (1.82) |  |  |  |  |  | -44.74\*\*\* (2.01) | -36.89\*\*\* (1.94) |  |  |
| Power distance (PD) | 2.35\*\* (1.01) | -2.98\*\* (1.16) |  |  |  |  |  |  |  |  |
| Individualism distance (ID) | -7.54\*\*\* (1.06) |  |  |  |  |  | -19.57\*\*\* (1.74) |  |  |  |
| UA distance (UAD) | -3.32\*\*\* (1.09) |  |  |  |  |  |  | -4.24\*\*\* (1.16) |  |  |
| Masculinity distance (MD) | 0.18 (0.61) |  | -1.94 (1.53) |  |  |  |  |  | -22.94\*\*\* (4.82) |  |
| Long-term orientation distance (LTD) | -7.64\*\*\* (1.05) |  |  | -39.94\*\*\* (8.14) |  |  |  |  |  | -6.71\*\*\* (1.47) |
| Year fixed effects | Yes | Yes | Yes | Yes |  | Yes | Yes | Yes | Yes | Yes |
| Cons | 115.94\*\*\* (29.64) | 194.07\*\*\* (29.74) | 219.77\*\*\* (65.04) | 147.18\*\*\* (44.27) |  | 193.44\*\*\* (29.48) | 253.06\*\*\* (32.86) | 115.87\*\*\* (30.10) | 98.15\*\*\* (37.27) | 99.52\*\* (43.98) |
| N | 928 | 915 | 165 | 634 |  | 914 | 847 | 875 | 763 | 294 |
| Prob > F  | 0 | 0 | 0 | 0 |  | 0 | 0 | 0 | 0 | 0 |

\* If p<0.1, \*\* if p<0.05 and \*\*\* if p<0.01; standard errors in parentheses. Models could not be estimated for negative regulatory, individualism and uncertainty avoidance distance and positive power distance due to low sample size.

Table 4 The moderation of R&D employees’ international experience on the relationship between institutional distance and R&D employees’ tenure

|  |  |  |  |
| --- | --- | --- | --- |
| **R&D employees’ tenure** | **(10)** | **(11)** | **(12)** |
| R&D employees’ education qualification | 1.67 (1.80) | 0.95 (1.62) | 0.71 (1.62) |
| R&D employees’ international exp. | 0.52\* (0.29) | -2.26 (2.34) | -1.95 (2.34) |
| R&D employees’ age | 1.98 (2.38) | 1.39 (2.12) | 1.54 (2.12) |
| R&D employees’ age2 | -0.04 (0.04) | -0.03 (0.04) | -0.03 (0.04) |
| Subsidiary’s knowledge stock | -9.35\*\*\* (1.39) | -7.62\*\*\* (1.27) | -7.58\*\*\* (1.27) |
| MNC’s host country exp. | 0.02\*\*\* (0.01) | 0.02\*\*\* (0.01) | 0.02\*\*\* (0.01) |
| Economic distance | 3.45\*\*\* (0.32) | 5.42\*\*\* (0.36) | 5.37\*\*\* (0.36) |
| Opportunity to move | -39.07\*\*\* (3.91) | -29.46\*\*\* (3.52) | -29.20\*\*\* (3.51) |
| Regulatory distance (RD) | -15.33\*\*\* (1.40) |  | -33.73\*\*\* (1.83) |
| Power distance (PD) |  | 2.26\*\* (1.01) | 2.19\*\* (1.01) |
| Individualism distance (ID) |  | -7.10\*\*\* (1.08) | -7.04\*\*\* (1.07) |
| Uncertainty avoidance distance (UAD) |  | -2.93\*\*\* (1.11) | -2.92\*\*\* (1.11) |
| Masculinity distance (MD) |  | 0.77 (0.63) | 0.75 (0.63) |
| Long-term orientation distance (LTOD) |  | -7.24\*\*\* (1.07) | -7.15\*\*\* (1.07) |
| RD × R&D employees’ international exp. | -0.19\* (0.14) |  | -0.28\*\* (0.14) |
| PD × R&D employees’ international exp. |  | 0.69 (0.49) | 0.80 (0.49) |
| ID × R&D employees’ international exp. |  | 0.28 (0.34) | 0.28 (0.34) |
| UAD × R&D employees’ international exp. |  | 0.60\* (0.49) | 0.63\* (0.49) |
| MD × R&D employees’ international exp. |  | -0.17\*\*\* (0.06) | -0.18\*\*\* (0.06) |
| LTOD × R&D employees’ international exp. |  | -0.59\*\* (0.31) | -0.67\*\*\* (0.31) |
| Year fixed effects | Yes | Yes | 107.16\*\*\* (29.68) |
| N | 928 | 928 | 928 |
| Cons | 61.75\* (32.18) | 110.24\*\*\* (29.69) | 107.16\*\*\* (29.68) |
| Prob > F | 0 | 0 | 0 |

\* = p<0.1, \*\* = p<0.05, \*\*\* = p<0.01; standard errors in parentheses.

Table 5 The moderation of MNC’s host country experience on the relationship between institutional distance and R&D employees’ tenure

|  |  |  |  |
| --- | --- | --- | --- |
| **R&D employees’ tenure** | **(13)** | **(14)** | **(15)** |
| R&D employees’ education qualification | 0.95 (1.61) | 1.01 (1.61) | 1.17 (1.59) |
| R&D employees’ international exp. | 0.17\*\* (0.07) | 0.18\*\* (0.07) | 0.16\*\* (0.07) |
| R&D employees’ age | 1.52 (2.11) | 0.92 (2.12) | 1.07 (2.10) |
| R&D employees’ age2 | -0.03 (0.04) | -0.02 (0.04) | -0.02 (0.04) |
| Subsidiary’s knowledge stock | -7.73\*\*\* (1.27) | -7.02\*\*\* (1.40) | -6.11\*\*\* (1.41) |
| MNC’s host country exp. | 0.08\*\*\* (0.02) | -0.50\*\*\* (0.13) | -0.40\*\*\* (0.13) |
| Economic distance | 5.32\*\*\* (0.35) | 5.30\*\*\* (0.38) | 5.33\*\*\* (0.38) |
| Opportunity to move | -29.80\*\*\* (3.49) | -30.26\*\*\* (3.48) | -29.53\*\*\* (3.45) |
| Regulatory distance (RD) | -31.16\*\*\* (2.04) |  | -31.28\*\*\* (2.09) |
| Power distance (PD) |  | 0.83 (1.16) | 0.31 (1.16) |
| Individualism distance (ID) |  | -10.51\*\*\* (1.58) | -10.41\*\*\* (1.57) |
| Uncertainty avoidance distance (UAD) |  | -5.85\*\*\* (1.48) | -5.41\*\*\* (1.47) |
| Masculinity distance (MD) |  | -1.39\* (0.83) | -1.68\*\* (0.82) |
| Long-term orientation distance (LTOD) |  | -6.62\*\*\* (1.69) | -5.78\*\*\* (1.68) |
| RD × MNC’s host country exp. | -0.03\*\*\* (0.01) |  | -0.04\*\*\* (0.01) |
| PD × MNC’s host country exp. |  | 0.09\*\*\* (0.02) | 0.10\*\*\* (0.02) |
| ID × MNC’s host country exp. |  | 0.07\*\*\* (0.02) | 0.07\*\*\* (0.02) |
| UAD × MNC’s host country exp. |  | 0.10\*\*\* (0.03) | 0.10\*\*\* (0.03) |
| MD × MNC’s host country exp. |  | 0.01\*\* (0.00) | 0.01\*\*\* (0.00) |
| LTOD × MNC’s host country exp. |  | -0.03\* (0.02) | -0.03\*\* (0.02) |
| Year fixed effects | Yes | Yes | Yes |
| N | 928 | 928 | 928 |
| Cons | 108.06\*\*\* (29.57) | 137.45\*\*\* (30.25) | 126.21\*\*\* (30.08) |
| Prob > F | 0 | 0 | 0 |

\* = p<0.1, \*\* = p<0.05, \*\*\* = p<0.01; standard errors in parentheses.

**Table 6** The relationship between R&D employees’ tenure and the destination MNC’s host country experience

|  |  |
| --- | --- |
| **R&D employees’ tenure** | **(16)** |
| Destination MNC’s host country experience | -20.19\*\*\* (1.71) |
| R&D employees’ education qualification | 2.11 (1.52) |
| R&D employees’ international exp. | 0.16\*\* (0.07) |
| R&D employees’ age | -2.04 (2.62) |
| R&D employees’ age2 | 0.04 (0.05) |
| Subsidiary’s knowledge stock | -8.56\*\*\* (1.24) |
| Focal MNC’s host country exp. | 0.00 (0.01) |
| Economic distance | 3.73\*\*\* (0.35) |
| Opportunity to move | -31.14\*\*\* (3.36) |
| Regulatory distance (RD) | -30.62\*\*\* (1.90) |
| Power distance (PD) | 4.02\*\*\* (1.06) |
| Individualism distance (ID) | -5.75\*\*\* (1.00) |
| Uncertainty Avoidance distance (UAD) | -1.63\*\* (1.07) |
| Masculinity distance (MD) | 0.01 (0.61) |
| Long-term orientation distance (LTOD) | -8.24\*\*\* (1.05) |
| Year fixed effects | Yes |
| N | 835 |
| Cons | 165.11\*\*\* (35.00) |
| Prob > F | 0 |

\* = p<0.1, \*\* = p<0.05, \*\*\* = p<0.01; standard errors in parentheses.

**Appendix**

1. **Research ethics**

While collecting data from LinkedIn, we followed the steps recommended by Townsend and Wallace (2016): checking guidelines, determining public versus private nature of data, maintaining anonymity and reducing the risk of harm to participants. Accordingly, first, we checked the guidelines of LinkedIn as well as those of the University of the first author to see this study conforms to their privacy guidelines. We did not identify from the guidelines any problem in accessing the profiles of LinkedIn users. We bought a LinkedIn premium subscription by paying a monthly subscription fee during the data collection period. The subscription also allowed us to carry out unlimited searches for participants each month[[8]](#footnote-8).

Second, the study of the ethics guidelines of the University where the research was conducted and LinkedIn policies helped us understand that the information that users post on LinkedIn is considered as ‘public information’ and informed consent is usually not required for collecting publicly available information. When opening an account on most social media platforms including LinkedIn, a user is required to agree to clauses that allow third parties to access and re-use data published by the user on the platforms (Townsend and Wallace, 2016). Thus LinkedIn data can be used for academic research, as observed in an editorial article published in *Research Policy*, Feldman et al. (2015) stated that ‘the editors believe this (LinkedIn) provides intriguing new possibilities for career studies’ (p. 1630). Ge et al. (2016) tracked the mobility of 14,000 US inventors on LinkedIn and examined the role of the human capital of individual inventors on their mobility. They also conducted a separate survey on 226 US inventors to determine the accuracy of the information provided on LinkedIn about their job changes and concluded that LinkedIn does provide relatively accurate information on job changes. Similarly, Xu et al. (2018) used LinkedIn data to map across-industry labour mobility in the USA. They observed a growing influx of scientists and R&D engineers from the automobile industry to internet firms, particularly Google, and suggested that such cross-industry labour mobility mapping can help understand the technology adoption and diffusion phenomena better. Breschi et al. (2018), also using LinkedIn data, studied migration or mobility at the country level. They differentiated between education and work migrants among Indian skilled diaspora in the USA and the drivers of their return migration to India. These studies have not mentioned acquiring informed consent from participants before using their or their employers’ data. It is worth mentioning, that past studies (e.g., Dietz and Bozeman, 2005; Dietz et al., 2000) have used data from curriculum vitae (CV) of academics to examine the influence of job rotations on productivity. These studies have not stated whether informed consent was obtained from participants before using their CVs. Since LinkedIn profiles of individuals could be considered as their CVs, informed consent does not seem necessary. However, it is possible that LinkedIn contains ‘private’ information (e.g., the contact information of individuals and posts made by employees), i.e., information that is visible only to themselves or their “1st-degree connections”. However, the first author of this study was not a 1st-degree connection of the participants and unable to collect ‘private’ information.

Third, we follow steps to maintain the anonymity of the participants. The data was stored in a spreadsheet in anonymised format and while reporting analysis and findings in this paper, we have kept the identity of the participants confidential. Further, despite our efforts to anonymise the data, if our data falls into the hands of coders, they may still be able to retrieve the identity of the participants. To prevent this from happening, as the ethical guidelines of the University of the first author suggested, for data storage purposes, instead of using cloud storage and hard drives, we saved the data on university computers that are less susceptible to data theft.

Fourth, there is no risk of harm for the participants. Usually, LinkedIn does not “require members to include sensitive data (e.g., race, ethnicity, political opinions, religious or philosophical beliefs, membership of a trade union, physical or mental health, sexual life or criminal record) in their LinkedIn profile”[[9]](#footnote-9). We did not come across any sensitive information and even if we did unknowingly, we did not collect such data because the release of sensitive data “might expose a social media user to the risk of embarrassment, reputational damage, or prosecution” (Townsend and Wallace, 2016, p.7).

1. **Reliability criteria in collecting and analysing data from LinkedIn**

**1.1 Identifying LinkedIn profiles of R&D employees**

We establish a link between the name mentioned as the inventor in the USPTO patent and the name on the LinkedIn profile if there exists a match between the first name and surname AND the LinkedIn profile shows the R&D employee’s employment with the company (assignee) around the date when the patent application was made (similar to Breschi et al., 2018). Thus, inventors with no LinkedIn profile were eliminated from the sample. Also, we had to eliminate R&D employees whose either first name or surnames were missing in the USPTO patents[[10]](#footnote-10).

 Further, in some cases, we found that multiple LinkedIn profiles appeared for the same R&D employee name and company. In such cases, we checked carefully all the LinkedIn profiles for any mention of USPTO granted patents to identify the right R&D employee.

**1.1 Considering only complete LinkedIn profiles**

We consider a LinkedIn profile “complete” if employers’ names, locations (country) and employment periods are reported AND the education period and qualification and institute names are reported AND there is no discontinuity in the career history of more than a year until 31st December 2016[[11]](#footnote-11). Below, we offer some examples of rejected LinkedIn profiles that were either incomplete or confusing (see also Tables A1, A2 and A3):

a] Profile of R&D Employee-I (see Table A1) was rejected because of missing education information including education level and the year of graduation. This information is necessary to calculate the age of the R&D employee[[12]](#footnote-12) at the time of starting employment career at different companies (which is a control variable in our regression model) as well as to control for the employee’s educational qualification.

Table A1 Example of an incomplete LinkedIn profile - Reason: missing education information

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employment/ education history  | Company/ university name | Position/ education level | Employment/ education period | Tenure measurement (months) |
| Education | Local University | Not available | Not available | Not possible |
| Employment-1 | MNC-1 | Available | Available | Possible |
| Employment-2 | MNC-2 | Available | Available | Possible |
| Employment-3 | MNC-3 | Available | Available | Possible |
| Employment-4 | MNC-4 | Available | Available | Possible |

b] Profile of R&D Employee-II (see Table A2) was rejected because of missing employment information. The employee’s profile shows no employment information after Employment-2 which ended in 2011. This could be because of many reasons such as retirement or the employee’s lack of engagement on LinkedIn. The latter case (if true) also raises questions over the authenticity of the pre-2011 information on the LinkedIn profile. As we could not verify the reason why the profile includes no information after 2011, we did not include it in our data.

Table A2 Example of an incomplete LinkedIn profile - Reason: missing employment information

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employment/ education history  | Company/ university name | Position/ education level | Employment/ education period | Tenure measurement (months) |
| Education | Local University | Available | Available | Possible |
| Employment-1 | MNC | Available | Available | Possible |
| Employment-2 | Local firm | Available | Available | Possible |
| Remaining employments (if any) | Not available | Not available | Not available | Not possible |

c] Profile of R&D Employee-III (see Table A3) was rejected because of confusing information regarding the third and fourth employment. The R&D employee was found to be working for two firms at the same time - MNC-3 and MNC-4- during the period 2015-2016 which is confusing considering no merger or acquisition activity happened between the two firms (MNC-3 and MNC-4) during the relevant time period. This may mean that the employee has not updated his/her LinkedIn profile, which also raises concerns over the authenticity of the rest of the information posted on the LinkedIn profile.

Table A3 Example of an incomplete LinkedIn profile - Reason: parallel employments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employment/ education history  | Company/ university name | Position/ education level | Employment/ education period | Tenure (months) |
| Education | Local university | UG | Available | Possible |
| Employment-1 | MNC-1 | Available | Available  | Possible |
| Employment-2 | MNC-2 | Available | Available  | Possible |
| Employment-3 | MNC-3 | Available | Available [period clashes with Employment-4] | Not possible |
| Employment-4 | MNC-4 | Available | Available [period clashes with Employment-3] | Not Possible |

1.2 Considering only those R&D employees who are Indian nationals

Only LinkedIn profiles of R&D employees of Indian nationality are considered. Identifying the nationality of R&D employees and eliminating foreign nationals from our final sample is important because, compared to Indian nationals, foreign nationals may be less affected by institutional distance while working for a foreign MNC. As LinkedIn profiles do not show the nationality of individuals, we relied on education information shared in the profiles to decide whether the R&D employee is Indian national (similar to the process adopted by Breschi et al., 2018). We assumed an R&D employee to be of Indian nationality if the first-level (school) of education mentioned in the LinkedIn profile is obtained in India. For instance, R&D employee-IV (see Table A4) was eliminated because the School-level was obtained in a foreign country.

Table A4 Example of identification of foreign nationals

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employment/ education history  | Company/ university name | Position/ education level | Employment/ education period | Tenure (months) |
| Education | Foreign School | School  | Available | Possible |
| Employment-1 | MNC-1  | Available | Available | Possible |
| Employment-2 | MNC-2 | Available | Available | Possible |

* 1. **Considering only those R&D employees who joined foreign MNC subsidiary in India soon after graduating**

In the paper, we argue that MNCs need to make significant training investments to prepare recently graduated engineers for R&D work, because most of them lack even the basic skills required in R&D departments (Aspiring Minds, 2019; Borah et al., 2019, 2021). Thus, if R&D employees leave the MNC subsidiary early, it receives little return on the investment. That is also the reason why we considered only newly graduated R&D employees for analysis, i.e., those who joined an MNC’s subsidiary in India on a permanent full-time contract immediately after their highest university education. Hence, we rejected those R&D employees who joined a local firm or a start-up after graduation. For instance, R&D Employee-V was eliminated because an MNC subsidiary was not his/her first place of work after graduation.

Table A5 Example of an R&D employees because of not working for a MNC subsidiary soon after graduating

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employment/ education history  | Company/ university name | Position/ education level | Employment/ education period | Tenure (months) |
| Education | Local University | UG  | Available | Possible |
| Employment-1 | Local firm | Available | Available | Possible |
| Employment-2 | MNC | Available | Available | Possible |

Further, we rejected those R&D employees who joined a foreign firm soon after graduating but outside of India. This was particularly the case when Indians study abroad (e.g., USA) and then join a firm there. LinkedIn profiles often include information on the job locations, and we used this information to identify where the employee was positioned when he/she started his/her employment. For example, R&D Employee-VI was eliminated because he/she joined an MNC in the USA after graduation.

Table A6 Example of an R&D employees because of joining a firm outside of India

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employment/ education history  | Company/ university name | Position/ education level | Employment/ education period | Tenure (months) |
| Education | Foreign University | PG  | Available | Possible |
| Employment-1 | MNC-1 [Location: USA] | Available | Available | Possible |
| Employment-2 | MNC-2 | Available | Available | Possible |

**1.4 Considering only those R&D employees leave an MNC subsidiary and joins another firm in India**

For the purpose of this paper, only mobile R&D employees were considered in order to measure exact tenure. An R&D employee was considered as mobile if the R&D employee leaves the MNC subsidiary (which they joined soon after graduating) and joins another firm in India by December 31st, 2016. Below, we provide some examples of LinkedIn profiles that were rejected based on this criterion:

a] We rejected R&D Employee-VII because his/her LinkedIn profile showed that although he/she joined a MNC subsidiary in India after completing studies, he/she did not leave the subsidiary until December 31st, 2016.

Table A7 Example of identification of immobile R&D employees

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employment/ education history  | Company/ university name | Position/ education level | Employment/ education period | Tenure (months) |
| Education | Foreign University | PG  | Available | Possible |
| Employment-1 | MNC | Available | Available | Possible |

b] We rejected those R&D employees who left the MNC subsidiary in India to join academia as students or faculty members because the decision to join academia for an R&D employee may be driven by factors other than institutional distance, e.g., post graduate higher education and independent research ambitions. For instance, R&D Employee-VIII, after having worked in a MNC subsidiary in India for more than five years, joined an Indian university as a PhD candidate. Therefore, R&D Employee-VIII was not considered in the sample.

Table A8 Example of an R&D employees because of joining a firm outside of India

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employment/ education history  | Company/ university name | Position/ education level | Employment/ education period | Tenure (months) |
| Education-1 | Local University | UG | Available | Possible |
| Employment-1 | MNC | Available | Available | Possible |
| Education-2 | Local University | PhD | Available | Possible |

c] We rejected those R&D employees who left the MNC subsidiary in India to join another firm which is located outside of India because such transnational mobility events (and end to tenure at MNC subsidiary) could be driven by factors other than institutional distance, such as desire to settle down in a foreign country. Again, we used the job location information on LinkedIn to identify such cases. For instance, R&D Employee-IX was not included in the sample as he/she left an MNC subsidiary to join a company in Europe.

Table A9 Example of an R&D employees joining a firm outside of India after leaving a MNC subsidiary in India

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employment/ education history  | Company/ university name | Position/ education level | Employment/ education period | Tenure (months) |
| Education-1 | Local University | UG | Available | Possible |
| Employment-1 | MNC-1 [Location: India] | Available | Available | Possible |
| Employment-2 | MNC-2 [Location: Europe] | Available | Available | Possible |

 d] We also made sure that changes in employer that occurred as a result of merger or acquisition (M&A) between the hiring and source firm were not considered as cases of mobility. To ensure that a change in employer due to M&A is not counted as an event of mobility, we checked the relationship between the source and the hiring firm in the year in which the R&D employee changes the job. If the employer name changes for an R&D employee from Employer A to Employer B because of acquisition of Employer A by Employer B, the event is not considered as a mobility event. For instance, R&D employee-X changed two jobs during his professional career until December 31st, 2016 (see Table A10). However, the job-change from MNC-1 to MNC-2 happened possibly because of the acquisition of MNC-1 by MNC-2 and therefore, this job change was not counted as a mobility event. In this case, we assumed that the employee was still working for MNC-1 until he/she decided to join the local firm.

Table C7 Example of identification of mobility events (end of tenure) caused by mergers and acquisitions between the source and hiring firm

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Employment/ education history  | Company/ university name | Position/ education level | Employment/ education period | Tenure (months) |
| Education | Local University | Available (UG) | Available | Possible |
| Employment-1 | MNC-1 | Available | Available | Possible |
| Employment-2 | MNC-2 | Available | Available | Possible |
| Employment-3 | Local firm | Available | Available | Possible |

 **1.5** **Considering only those R&D employees leave the MNC subsidiary ‘voluntarily’ and joins another firm in India**

Although LinkedIn profiles do not usually indicate whether a job change was forced or voluntary, we assumed a job change to be forced if the employee leaves a traineeship/internship position due to the end of the traineeship contract. All remaining mobility events were considered as voluntary mobility events. For the purpose of this paper, we considered only the voluntary mobility events.

**Table A11** Distribution of R&D employees across MNCs from different home countries

|  |  |  |  |
| --- | --- | --- | --- |
| Sr No | Country | No of MNCs | No of R&D employees |
| 1 | Australia | 3 | 13 |
| 2 | Austria | 1 | 1 |
| 3 | Barbados | 1 | 1 |
| 4 | Bermuda | 4 | 8 |
| 5 | Belgium | 1 | 11 |
| 6 | Canada | 7 | 12 |
| 7 | China | 2 | 20 |
| 8 | Croatia | 1 | 1 |
| 9 | Demark | 1 | 1 |
| 10 | Finland | 1 | 13 |
| 11 | France | 10 | 59 |
| 12 | Germany | 10 | 54 |
| 13 | Hong Kong | 3 | 21 |
| 14 | Ireland | 3 | 18 |
| 15 | Israel | 6 | 22 |
| 16 | Japan | 12 | 26 |
| 17 | Kenya | 1 | 1 |
| 18 | Malaysia | 1 | 1 |
| 19 | Netherlands | 13 | 64 |
| 20 | Panama | 1 | 1 |
| 21 | Philippines | 1 | 1 |
| 22 | Russia | 4 | 10 |
| 23 | Singapore | 6 | 25 |
| 24 | South Africa | 1 | 1 |
| 25 | South Korea | 2 | 39 |
| 26 | Spain | 1 | 11 |
| 27 | Sweden | 2 | 13 |
| 28 | Switzerland | 7 | 60 |
| 29 | Taiwan | 6 | 14 |
| 30 | UAE | 1 | 1 |
| 21 | UK | 18 | 24 |
| 32 | USA | 125 | 392 |
|   | Total | 256 | 939 |

**References used in the Appendix**

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1. That said, autonomous subsidiaries may try adopting local institutional values (Rabbiosi and Santangelo, 2019). However, this might be difficult when subsidiaries are new to the host country and the institutional distance is high, because subsidiaries may struggle to comprehend the local institutional values/routines, let alone adopting them—a problem known as the ‘liability of foreignness’ (Zaheer, 1995). [↑](#footnote-ref-1)
2. In the empirical model, we control for economic distance. [↑](#footnote-ref-2)
3. We performed additional tests by controlling for gender, since employees’ gender may influence the job/mobility opportunities they receive. The results were consistent with those without this variable. [↑](#footnote-ref-3)
4. As this study focuses on R&D employees’ tenure in MNC subsidiaries, we measured the host country experience of MNC subsidiaries only, not the experience accumulated by the companies acquired by MNCs. [↑](#footnote-ref-4)
5. Salomon and Wu (2012) did not find any significant difference between host country experience accumulated across R&D and non-R&D subsidiaries. [↑](#footnote-ref-5)
6. We consider a subsidiary to be situated in an industrial cluster if its location is within 60 km radius from the cluster’s main train station. In the case of Delhi NCR region, a larger radius (80 km) was considered as it includes multiple cities/sub-clusters e.g. Delhi, Noida, Gurgaon and Faridabad. [↑](#footnote-ref-6)
7. India is generally recognised as a highly power distant, highly collectivistic, moderately masculine, moderately uncertainty accepting and highly long-term oriented society. To know how India fares compared to other countries on Hofstede’s five cultural dimensions, visit <https://www.hofstede-insights.com/country-comparison>. [↑](#footnote-ref-7)
8. Without the premium subscription, one can do only a handful number of searches each month on LinkedIn. [↑](#footnote-ref-8)
9. https://www.linkedin.com/help/linkedin/answer/77 [↑](#footnote-ref-9)
10. In several instances, we found that only initials of the surname were written in USPTO patents. We eliminated such employees from our sample. [↑](#footnote-ref-10)
11. Cut-off date for our data collection. [↑](#footnote-ref-11)
12. We calculate an employee’s birth year by subtracting 18 years from the year in which the employee joins the undergraduate programme. Usually, in India, the average age of students at the start of their UG degree programmes is 18 (Scholaro, n.d.). We had to use this approach to measure R&D employees’ age because LinkedIn profiles do not include birth year information. [↑](#footnote-ref-12)