

**HEC MONTREAL**

**LIABILITY OF FOREIGNNESS EFFECTS ON INDIVIDUALS:**

**AN ANALYSIS OF THE ATP WORLD TOUR**

**BY**

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## **RÉSUMÉ:**

Le statut d'entreprise étrangère mène à plusieurs difficultés pour une entreprise. Similairement, les individus font face à plusieurs problèmes d'adaptation qui peuvent être considérés comme le désavantage lié à l'origine de l'individu (ILOF) et l'analyse de ce phénomène est le motif primaire de ce travail. Le désavantage que confrontent les individus peut être lié à plusieurs facteurs comme la distance, la discrimination, le manque de familiarité et les problèmes interpersonnels. L'analyse de ces facteurs est une des principales contributions de cette étude. En effet, cette étude s'insère dans une littérature où le problème du désavantage lié à l'origine (LOF) au niveau de l'individu a été très peu approfondi. Afin d'explorer ce phénomène, le cas du championnat de l'ATP (Association du tennis professionnel) est utilisé. La méthodologie utilisée repose sur des données quantitatives et sur la régression linéaire multiple. L'étude porte sur 2648 observations sur la performance des joueurs pour l'année 2014 (pour tous les tournois). La performance des joueurs a été étudiée en lien avec plusieurs facteurs comme la distance géographique, les particularités locales et la langue. Les résultats de l'analyse suggèrent que les joueurs de tennis professionnels sont en effet affectés négativement par le désavantage lié à l'origine de l'individu (ILOF) et la relation est modérée par les habiletés personnelles et autres facteurs externes (distance, particularités locales et langue). Les résultats proposent donc que les habiletés du joueur sont une variable modératrice clef dans la relation entre leur performance et le désavantage lié à l'origine de l'individu (ILOF).

**Mots-clés:** Désavantage lié à l'origine, Discrimination, familiarité, distance, relationnel performance, ATP.

## **ABSTRACT:**

The status of being a foreigner attracts a lot of difficulties for a firm. Likewise, the individuals face a lot of adjustment difficulties in a host country which can be attributed as individual liability of foreignness (ILOF) and the analysis of this phenomenon is the primary motive of this work. The liabilities faced can be attributed to various factors like distance, discrimination, unfamiliarity or relational hazards. The explanation of these factors, in the ILOF sector, is one major contribution of this study. This will be one of the very few studies that performed LOF analysis at an individual level and in this present work, the case of the ATP (Association of Tennis Professionals) World Tour is taken to explain this particular phenomenon. A multiple linear regression has been performed on a 2648 observation dataset which contains all the players performance for the year 2014 (at all tournaments) and the performance was studied against various factors like geographical distance, home conditions and language. The results from the analysis suggests that professional tennis players suffer from ILOF and this varies with personal abilities and other external factors (like distance, home conditions and language parameters). Results also suggest that a player's level of ability is a key moderator of ILOF.

**Keywords:** Liability of Foreignness, Discrimination, Unfamiliarity, Relational, Distance, Performance, ATP.

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## **1. Introduction**

Operating in domestic markets presents some advantages for local firms (Asmussen, 2009). For instance, a firm in its domestic market knows the market dynamics, has sufficient market knowledge, knows its customers, has good contacts with suppliers and distributors (if external), and receives occasional support from the government both legally and financially (Asmussen, 2009; Griffith et al, 2013). Compared to local firms, foreign firms may not have all those advantages; even when they do, their advantages are not at the level as those enjoyed by the domestic firms (Li, Poppu and Zhou, 2008). This somewhat creates an unbalanced competitive field wherein a foreign firm must face both the competition from domestic firms in the market place as well as the additional costs that come from operating in an unknown environment. Some of these costs can include the time it takes to understand the host country environment and to evaluate its chances. Also local regulations can be a challenge; a different culture or different language can be very challenging; or these firms could be discriminated against by the local authorities (McCarthy and Manolova, 2009). Finding suppliers can be difficult, and targeting the right customer segments can be even more difficult (Moeller et al, 2013). Logistics can pose a serious problem, and even the movement of personnel can be a significant and arduous task (Matsuo, 2000). All these challenges together increase the complexity and costs faced by a foreign firm (Hymer, 1976). These additional costs are not faced by a traditional domestic firm which can be referred to as the liability of foreignness (LOF) (Zaheer, 1995; Eden and Miller, 2001; Mezias, 2002 ).

This LOF is not only limited to firms: it is also observed in the case of individuals. The phenomenon particularly can be termed as individual liability of foreignness (ILOF) (Mezias, 2007; Fang et al, 2013) and is the main focus of this research work. One of the major contributions of this present ILOF analysis is that the individuals also face the same amount of hardship, as like firms, when they go abroad in their professional commitments. By hardships this analysis of ILOF is referring to all the factors related to unfamiliarity, discrimination, relational hazards and also the spatial related factors. The main assumptions of this study are that the performance of the individuals is negatively affected when they move away from their home country while the presence of home conditions and helpful environments aid them in giving better performances. This performance is affected at different levels to different players; while

the top players usually find ways to give good performance, the lower ranked players can succumb to the pressures that can be related to the ILOF.

The case of the ATP (Association of Tennis Professionals) World Tour is taken to justify the assumptions (or the hypothesis) made in this analysis. The professional tennis players travel a lot in their yearlong professional journeys and from time to time play in different host countries. These host countries can be far away from a player's home country and can also additionally provide him with conditions that are challenging enough to impact his final performance. The players that better adjust to the environment and deal with the ILOF factors emerge as victors in their yearlong commitments (Ovaska and Sumell, 2014). Hence the ATP makes for a good sample to test if this ILOF phenomenon applies to sportsmen and more importantly to tennis players in particular.

A detailed discussion of both LOF and individual liability of foreignness (ILOF) is provided in the sections that follow. The drivers that cause the LOF are also discussed, while the case of ILOF is further explained with data collected from the ATP World Tour (Association of Tennis Professionals). In the drivers section apart from the regular parameters namely uncertainty, discrimination and relational hazards, distance parameter whose impact is usually a little underplayed finds an in depth analysis in this present study. This is followed by a hypothesis section wherein the impacts which are related to the major external parameters like distance, unfamiliarity, discrimination and relational hazards are explained. The hypothesis is followed by a methodology and an analysis section. The research work is concluded with a discussion section and also the avenues for further research are suggested at the end.

## **2. Liability of Foreignness (LOF)**

### **2.1 What is Liability of Foreignness?**

LOF consists of those additional costs encountered by foreign firms that a domestic firm does not face (Hymer, 1974). These costs have a number of adverse impacts on firms that compete in an external environment. These could be anything ranging from lack of resources, capital, competencies, or capabilities; or they could just face discrimination or unfamiliar conditions

(Cuervo-Cazurra, Maloney and Manrakhan, 2007). Since the inception of this concept into the international business literature, many authors have given different definitions on a number of various bases. Table 1 shows different authors' definitions in chronological order. In the following subsection, a description of each of these definitions is provided.

## **2.2 Various definitions of Liability of Foreignness**

**Table 1: Definitions of LOF**

<b><u>Author</u></b>	<b><u>Definition</u></b>
Hymer (1974)	A phenomenon causing foreign firms to operate at a disadvantage relative to domestic firms. Referred to as the costs of doing business abroad (CDBA)
Zaheer (1995)	Costs of doing business abroad that result in a competitive disadvantage for a MNE subunit
John M. Mezas (2002)	A phenomena that causes foreign firms to incur costs that domestic firms do not; or to incur costs to a greater extent than domestic firms; or to be denied those benefits that domestic firms usually receive
Eden and Miller (2001)	LOF refers to the sociopolitical and relational hazards that are associated with being a stranger in a strange land
Cuervo-Cazurra, Maloney and Manrakhan (2007)	Definition takes a resource perspective stating that LOF is the lack of complementary resources needed to operate in a new institutional environment
Perez-Batres and Eden (2008)	The added difficulties or liabilities that arise from changing the geographical space (from home country to host country)
Sethi and Judge (2009)	The additional costs that arise within a host country and addition of the costs that occur outside the country completes the whole costs of doing business abroad
Moeller et al (2013)	The additional costs firms face when operating abroad. These additional costs arise due to spatial factors, unfamiliarity or

All of these definitions explain LOF, although each takes a different perspective from the others. While some define the LOF considering the additional costs incurred, others consider the resources or advantages that are denied. In the next few paragraphs a critical review of the definitions is given.

Hymer's (1960) definition is considered seminal. He explains costs of doing business abroad (CDBA) as those costs faced especially by foreign firms going abroad. This definition has been the cornerstone for many later definitions. For instance, Zaheer (1995) builds on this definition by attempting to identify these costs and consider the actual effects of these additional costs. She hypothesizes that these costs can result in a competitive disadvantage for the foreign firm. These competitive disadvantages complicate the internationalization path of a foreign firm, which can have serious consequences in the future. These additional costs can be identified in many different ways. For instance, Mezias (2002) notes that the LOF is not only restricted to the single-level definition that foreign firms incur costs that a domestic firm does not. These foreign firms incur those costs to a greater extent than domestic firms and are also denied those benefits that a domestic firm generally receives. He also broadly extends this definition, stating that these are also the difficulties that arise from a deficit in the knowledge base of a foreign firm with respect to the host country's legal and cultural systems. By legal, he means to include all government-related rules, regulations, and so on.

These liabilities can also be associated with hazards faced by a foreign firm in a foreign country. In the words of Eden and Miller (2004), LOF refers to those sociopolitical and relational hazards that come from being a stranger in a strange land. Again, being a stranger can mean that a firm is unfamiliar with the environment, which creates additional costs for them. This is because it might need to invest in market study, depend on a local partner, or plan to solve logistic related problems. Eden and Miller (2004) also include the problems implied by the movement of the staff from the home country. It is also worth noting here that the liabilities are not always the costs incurred; they can also be identified from a resource perspective. Sometimes firms lack the essential resources needed to operate in a new institutional environment (Cuervo-Cazurra, Maloney and Manrakhan, 2007). This is because the firms need specific resources when

competing in an external environment and any shortage or absence of these resources adversely affect the internationalization process of the firm. It is also plausible that even distance-related factors can play a role in LOF. In this regard, a rather simpler definition of LOF has been given by Eden and Perez-Batres (2008), which states that these are the added difficulties that a firm has to face because of a change in geographical space from home to host country.

Sethi and Judge (2009) have attempted to be specific with regards to the geographical parameter of the definition by saying that the LOF consists of the additional costs incurred by firms operating within a host country. They argue that doing business abroad and doing business within a host country are two different cases, and that the region should be limited to within a host country when the LOF is considered. Another modern definition was put forward by Moeller, Harvey et al. (2013). According to them, the LOF consists of the additional costs faced by firms when operating abroad and these additional costs arise due to spatial factors, unfamiliarity, or discrimination-based hazards. They identified four basic types of additional costs: the extra costs are those that come from the fact that the firm is operating in a country which is far away from their home; costs that come from being unfamiliar with the host country conditions and environment; costs that arise from economic and legal problems; and costs that originate from restrictions on sales in a specific host country. These factors can also be looked upon as the drivers of LOF.

The following section deals with the drivers of LOF in detail.

## **2.3 Drivers of LOF**

There are four important drivers of LOF: unfamiliarity, discrimination and relational hazards are the three major drivers, and distance is the fourth one. These four drivers are described in detail in the coming subsections,

### **2.3.1 Unfamiliarity Hazards**

Firms are required to go to different countries in the process of internationalization. And the environment at these host countries can be different from the firms' home country environment, thereby presenting the firm with different challenges. For instance, firms face unfamiliarity in

understanding the legal and cultural systems of a host country, which creates LOF (Mezias,2002). Unfamiliarity with these systems can have a significant impact on the performance of a firm. For instance, if the legal and cultural systems of the host country are very different from that of a firm's home country, then they may find it difficult to adjust to the host country surroundings. This can be because certain things which are acceptable in their home country might seem unacceptable in the host country.

Understanding the environment and getting used to the local dynamics is important in determining the success of firms in a new host country environment. Some strategies work and some backfire because firms often do not give adequate amount of importance to this unfamiliarity issue. For example, firms use expatriates in addressing the LOF issue (Matsuo, 2000). They consider that their home country's managers are generally more skilled and helpful in developing strategies that can help them to perform better abroad. However, overreliance on expatriate managers and underutilization of local managers can again unnecessarily increase the LOF that a firm experiences (Berger, Choi and Kim, 2011).

### **2.3.2 Discrimination Hazards**

Foreign firms must contend with the fact that they face discrimination at various levels due to the fact that the firms do not belong to the host country in question. One important situation in which firms face discrimination is with regards to regulations put forward by the host country government, which play a crucial role in increasing the impact of this liability (McCarthy and Manolava, 2009). This is because home country governments usually impose some regulations in order to protect their local players from additional competition resulting from the entry of new foreign players. The excessive regulation can sometimes have an adverse impact by making the local companies complacent. This significantly impacts the level of innovation of these companies, thereby presenting an advantage (or opportunity) for foreign firms to compete in that specific host country (Miller and Richards, 2002). However, firms entering a host country occasionally find it difficult to become involved in the domestic market. This lack of embeddedness may translate into additional hurdles (LOF) for a foreign firm (Schmidt and Sofka, 2009).

One other major problem a firm faces in a foreign market is with regards to the perception that locals develop on the firm (Moeller et al, 2013). For instance, a firm can face discrimination from the suppliers' side. They may be charged with higher prices by the suppliers or given a lesser preference when compared with their domestic competitors. These perceptual effects can also be observed from the clients' side as well (Moeller et al, 2013). The clients can develop a certain affinity towards their domestic companies and without their knowledge start to discriminate against the foreign firm and its products. This specific dimension of LOF can also moderate the positive effects of certain strategies apart from the general discrimination directed towards the foreign firms. To overcome such problems, these firms mostly develop certain managerial ties in markets abroad, but they still lag behind domestic firms in realizing the advantages that comes from these ties (Li, Poppo and Zhou, 2008). This is because even though they develop certain capabilities through the ties formed in the host country, they are still seen as outsiders and not given complete benefits that could have supported their survival in the host country.

### **2.3.3 Relational Hazards**

The knowledge flow between the headquarters (HQ) and the domestic unit can be much simpler than the knowledge transfer between HQ and a subsidiary abroad (Dobrai et al, 2012). This comparative or relational risk that is associated with managerial procedures are categorized under relational hazards. Internationally diversified firms are difficult to manage due to operational complexities and informational asymmetries (Hitt, Hoskisson and Duane Ireland, 1994). This makes both the knowledge transfer path and managing the subsidiary complicated. Distribution of various activities across different regions also has an effect on the performance of a firm, which can be related to LOF (Kudina, 2012). Apart from this, it prevents foreign firms from achieving seamless integration and coordination in their foreign operations (Schmidt and Sofka, 2009). For instance, knowledge transfer between the different units can be difficult; hence, integration and coordination of business activities becomes difficult. They also face relatively greater hurdles in acquiring market information than a local firm (Dau, 2013). The institutional distance between the home country and host country can sometimes make the

knowledge transfer process difficult, which influences R&D returns and impacts a firm's productivity and performance (Antolin and Higon, 2012).

Cultural factors are also sometimes considered relational hazards (Calhoun, 2002). Cultural distance between the host country and home country can be one of the reasons why firms face LOF (Chen and Mezias, 2002). It is important to note here that this cultural distance exists at both the national level (i.e., between countries) and the firm level. Culture is not necessarily a singular concept; many other factors add up to complete the cultural sphere. For instance, linguistic components is one other cultural factor that adds a whole new dimension to the LOF problem (Kuznetsov and Kuznetsova, 2014; Brannen, 2004).

#### **2.3.4 Spatial Distance**

Luo, Nyaw and Shenkar (2002) state that the distance between the headquarters (HQ) and the foreign subsidiary is positively correlated with the operational problems faced by a firm. This implies that higher the distance between the HQ and the foreign unit, the higher the operational problems a firm faces. Operational problems refer to those management-level problems that are faced by the firm when it moves out from its home country. For instance, logistics and the movement of goods and products can be a problem. The firm also must examine human resources in the host country and may need to move some of its home country personnel to the host country, which can again cause a problem in overall operations. The firm may need to understand and follow the local regulations, which is both time-consuming and problematic from a company's perspective. In other words, these operational activities become complex possibly because of this distance between the HQ and the various subsidiaries (Hitt, Hoskisson and Duane Ireland, 1994). Perez-Batres and Eden (2008) additionally coined the term liability of localness. They are of the opinion that LOF occurs because of the geographical distance between the two operating markets (home country and host country).

### **3. Consequences of LOF**

The LOF has been found to negatively affect a firm's performance (Kudina, 2012; Lu and Hwang, 2010; Schmidt and Sofka, 2009). This negative performance takes multiple forms and affects firms in different ways. It can affect the general strategy of the company or its organizational structure, or it could completely change the approach of the firm towards its internationalization activities (Ref). LOF, alongwith home country specific advantages, determines the performance of a firm abroad (Miller and Parkhe, 2002). However, a firm must also realize that this LOF decreases over time as they gain knowledge and become accustomed to the host country environment.

First, LOF can influence the market entry strategy of firms (Chen, Griffith and Hu, 2006). LOF, along with market entry barriers, influences a firm's internationalization strategy (Kwon and Hu, 2004). They either choose an evolutionary or revolutionary path. The evolutionary path is more of a wait-and-watch approach, whereas the revolutionary path is more dynamic. This sets up the future operations of the firm abroad. Modes of entry, types of ownership, and cultural distance all have an impact on the performance of foreign subsidiaries (Guisinger and Li, 1991). Second, foreign subsidiaries tend to diversify a great deal in hopes of mitigating this liability of foreignness (Elango, 2009). However, this increased focus on internationalization and diversification can also have a strong negative effect on a firm's innovation and performance (Hitt, Hoskisson and Duane Ireland,1994). Foreign units that diversify too much from the company's core products have a higher probability of exit from a host country (Li, 1995). However, it is important to note that firms still benefit from international expansion and learning from other competitors.

Second, LOF plays a part in the exit of a firm from a country; although it can be that LOF is just one of many reasons for a firm to exit (Hennart, Roehl, and Zeng, 2002). Foreign firms exit at a higher rate than domestic firms due to LOF (Mata and Freitas, 2012), but this is more of a temporary phenomenon because LOF experienced by a firm decreases over time. Footloose phenomenon comparatively is considered to be more predominant than LOF in a foreign firm's exit. Footloose is that phenomenon in which a foreign firm feels no attachment to the host country environment and hence keeps open an option of exit from the country if things go wrong. This LOF varies across countries (Miller and Richards, 2002) because different countries

have different market situations and each market environment is unique. For instance, assume an Indian firm is going to both Singapore and France. The two market environments are different and the firm is now presented with two different and unique challenges. Therefore, the firm needs to prepare in the first place as per the market situation in the host country. This leads to firms becoming more local than global (Rugman and Verbeke, 2004) because, as mentioned above, every market environment is unique. The firm prepares itself according to the local environment, which makes it a localized company rather than a truly global firm. If the host country market conditions are too complex for the firm, then they might plan to stay in their home country and instead attempt to outsource some of their important operations abroad (Bunyaratavej, Hahn and Doh, 2007).

Third, LOF also significantly and negatively impacts a firm's propensity to form inter-organizational relationships which could have otherwise helped the firm in overcoming LOF (Nachum, 2010). The presence of LOF creates a resource mismatch between foreign and domestic firms, which renders insignificant the phenomenon of complementing resources in the case of a strategic alliance (Li, 2014). This also reduces the level of advantages that a firm might have from any managerial ties it forms abroad, thereby making the internationalization process more difficult (Li, Poppo and Zhou, 2008).

Fourth, Zaheer (1996) states that foreign firms lag behind the domestic firms (from the host country) due to the fact that the foreign firm managers are slow in understanding and adapting to the institutional and organizational differences between their home country and the host country. They need to understand the environment, become accustomed to the culture, and comprehend the legal system and regulations. This creates a liability at both the firm level and an individual level (detailed discussion presented in the following sections) and the final performance of both is affected.

So far only MNEs (Multinational Enterprises) that have a certain amount of capabilities and resources have been considered, but the impact of this problem on much smaller SMEs (Small and Medium Enterprises) has not been covered. Beamish and Lu (2001) have found that SMEs face a higher level of LOF than a regular MNE due to their limited resources and capabilities. Mezas (2002) has found that foreign subsidiaries in the US faced higher labor lawsuit judgments than US-owned subsidiaries. Miller and Parkhe (2002) in their research found that efficiency of a

foreign subsidiary in the host country depends on the competitiveness of both the host and home countries. They also find that in some environments, US-owned banks are more efficient than a foreign-owned subsidiary. A great deal of research has been done (Barnard, 2010; Miller et al, 2008) on firms from emerging countries because they are generally representative of the subset mentioned above: they have some limitations in resources and capabilities when compared to those firms from developed countries. In such cases, market-based resources are more important than firm-specific capabilities for smaller MNE's in overcoming LOF and achieving better performance.

#### **4. Strategies to Overcome LOF**

The first step in solving a problem lies in the identification of that particular problem (Mezias, 2002; Cazorra, Maloney and Manrakhan, 2007; Joardar and Wu, 2011). For instance, examining demographic variables with a firm's foreignness can help in understanding the reasons for this liability and thus helps in designing better strategies (Newburry, Gardberg and Belkin, 2006). Or the firms, which intend to internationalize, could have greater product variety and this partly helps in offsetting LOF as Elango (2009) noted. He also suggested that firms can benefit from choosing those specific markets with high potential and hence minimize the disadvantages that LOF creates.

First, the internationalization of a firm begins with choosing the right mode of entry to perform its operations in the host country. An effective selection of the mode of entry helps limit the problem of LOF for the firm (Elango, 2013; Elango and Sambharya, 2004; Klossek, Linke and Nippa, 2012). For instance, Duarte and Garcia-Canal (2004) point out that firms can resort to joint ventures or acquisitions (Beamish and Lu, 2001) in order to overcome LOF because through this mode of entry they are given access to resources in the host country, which helps them adjust to the local environment more easily and rapidly. The LOF experienced can also be reduced to some extent if the firm goes to countries that are institutionally or culturally similar to its home country (Moriatti, Piscitello, and Elia, 2014). If the home country and the host country environments are similar, there is a possibility that the firm is better prepared to tackle the new environment because it resembles its home conditions.

Second, the timing and the implementation of these strategies also plays a role in mitigating LOF. For instance, simply making an earlier entry into the markets helps to reduce the LOF (Casillas and Gallego, 2014; Eden and Molot, 2002). This is because by moving first, the firm has a higher amount of market at its disposal without much competition; it also has that extra space to implement its operational plans and strategies without having to worry excessively about its competitors.

Third, some of the basic strategies that a firm can use to overcome LOF are reputation building and reputation enhancement (Klossek, Linke and Nippa, 2012). Improving the reputation component helps in obtaining a positive image for the firm which consequently helps them in integrating seamlessly into the business environment of the host country. A firm can also follow certain effective strategies like bonding, signaling, organizational isomorphism, and third-party endorsements as noted by Bell, Filatotchev and Rasheed (2012). All the above mentioned strategies are different types of partnerships a firm could form in a host country. Apart from these specific strategies, firms can resort to both defensive and offensive approaches in overcoming LOF (Luo, Nyaw and Shenkar, 2002). Under defensive approaches, contract protection, parental control, parental service, and output standardization are listed; while the offensive approaches include local networking, resource commitment, legitimacy improvement, and input localization. For instance, contracts (defensive) help in overcoming LOF by protecting invested resources, covering up operational uncertainty, and reducing coordination costs; while the local networking (offensive) neutralizes LOF by increasing adaptability, improving organizational legitimacy, and improving cooperation with the local business community. It is important to note that contracts reduce production and marketing costs but have no effect on sales revenue, whereas the opposite is true in the case of local networking.

Fourth, firms tend to develop complimentary abilities through experience and as well as from the organizational learning they carry out over time (Thomas, 2006; Belkin et al, 2006 and Dau, 2013), thereby overturning their negative performance after an initial rocky period (Beamish and Lu, 2001; Zaheer and Mosakowski, 1997). When firms go abroad, they face additional costs, which initially results in a negative performance; after a while, when they get used to the environment, firms tend to turn that negative performance curve into a positive one (Contractor, Kumar and Kundu, 2007). From a host country perspective, certain distinctive characteristics of

large global cities such as global interconnectedness, cosmopolitanism, and the presence of advanced services help foreign MNEs to overcome at least some of the additional costs that come from doing business abroad (Asmussen, Goerzen and Nielsen, 2013). Hence, specific localization strategies within a country can help in overcoming LOF. Regional economic stress has a great deal of influence on potential LOF (Sofka and Zimmermann, 2008). Regions within a country that are economically depressed imply less LOF for a firm. These kind of regions provide foreign firms with less domestic competition and hence give them the extra space to launch themselves into the host country. If multiple sub-units of a firm are present in a country, then a new sub-unit will benefit from such a situation because there is a possibility of knowledge transfer between the different sub-units (Miller et al, 2008).

Fifth, corporate citizenship is one important method by which firms gain legitimacy, reputation, and competitive advantage and thereby overcomes LOF (Gardberg and Fombrun, 2006). However there is a possibility that this liability can be magnified if this particular phenomenon is not carried out correctly. For instance, through corporate social responsibility (a non-market mechanism), foreign affiliates can increase the social legitimacy component by showing their social commitment to the host country (Campbell, Eden and Miller, 2012). However, some MNEs can engage in much less CSR-related (Corporate Social Responsibility) activity because they are not emotionally attached to the host country constituents or because they are skeptical of the returns from CSR-related activities. Gaining legitimacy is an important part in overcoming LOF; to obtain that, foreign firms can either depend on CSR-related activities or on external institutional devices (Elango, 2009).

Sixth, Zaheer (1995) states that in an effort to overcome LOF, firms can either import their already successful home country capabilities (strategies) or attempt to replicate the successful practices of domestic firms. She shows that the first option is helpful in overcoming LOF whereas the second is difficult to perform. The same point was also proven by Hwang and Lu (2010). Additionally, domestic joint venture firms have a role to play in mitigating LOF for their foreign subsidiaries (Barkema et al, 1997). They prepare firms for cross-border joint ventures, which helps them understand external environments. Prior learning or obtaining knowledge before entering a market helps these firms overcome LOF. Various firms have different levels of willingness to learn; they therefore become accustomed to the market at different rates. These

LOF and CDBA (Cost of Doing Business Abroad) decrease over time as firms become accustomed to the foreign market (Petersen and Pedersen, 2002). With this knowledge, foreign firms tend to be more product diversified and more likely to be affiliated with a business group rather than a domestic firm.

Seventh, firms with limited capabilities can resort to developing certain competencies like IT skills in order to overcome LOF (Zhang, Sarker and Sarker, 2008) and thereby improve performance which can help them in their foreign operations. Specifically, firms develop certain competencies by series of foreign expansions which helps them in overcoming specific expropriation hazards (Delios and Henisz, 2000). As a side note, using expatriates can help in addressing the LOF issue (Matsuo, 2000). The general assumption is that these parent company managers are more skilled and tend to follow the same successful strategies as in the home country. This strategy is intended to reduce the LOF in terms of the cultural factors (i.e. specifically firm's managerial and work practices). It also helps to overcome some of the spatial distance hazards. However, there is also a differing view. Sometimes too many expatriates in the host country environment can create unwanted unfamiliarity issues and the firms will have to hire local people to help solve this problem (Goodall and Roberts, 2003).

However, an alternative explanation is given for firms that have limitations in capabilities and resources. For instance, MNEs coming from emerging countries fall into that category. Due to either low competition or lesser international exposure, MNEs from emerging countries usually have capability and resource limitations as compared to their peers from developed countries (Sim and Pandian, 2003). These MNE's also need to counter late mover disadvantages (the disadvantages that a firm encounters by moving late into a host country market) because these firms tend to enter a host country market environment late. In order to tackle these problems, EMNEs (Emerging Multinational Enterprises) resort to acquisitions (Chittoor, Aulakh and Ray, 2015), which provide them with the necessary market support to succeed in the host country. Additionally, these EMNE subunits can also draw upon their ethnic identities, which serve as an effective and valuable competitive advantage to help them compete in the host country market environment (Miller et al, 2008). Ethnic identity refers to the unique identity that the firm carries into the host country, which can either be cultural or institutional.

## **5. Individual Liability of Foreignness (ILOF)**

The previous sections have addressed LOF from a firm's perspective. This LOF is not restricted to only firms; it is also seen at an individual level, as Fang et al. (2013) noted. These liabilities are the disadvantages that individuals encounter when competing against their counterparts from the host country. This liability is present at both an individual level and a firm level, and both of them are severely affected by it. The sources of LOF, its consequences, and the strategies that would help a firm overcome these liabilities have already been described in the previous sections.

Foreigners, when compared to natives from the host country, face disadvantages which can be contributed to Individual Liability of Foreignness (ILOF). Millar and Choi (2008) attributed this liability to the fact that foreigners lack legitimacy in conforming to the host country environment and this leads to lower level of success in the job market for them. Fang et al (2013) develops further on this idea stating that the LOF effects have varying impact on immigrant job seekers depending on the way they search for jobs in the host country. For instance, if the mode of job search is through recruitment agencies, there is every possibility that the immigrant job seekers are discriminated and stereotyped by the agencies. Another alternative explanation also exists that the agencies find it difficult to access both educational and work experiences of the immigrant job seekers which acts negatively in the job search process. Mezias (2007) further identifies that ILOF is created because of the difficulties that arise from trying to adjust into a host country environment. A foreigner needs to make cultural, institutional and organizational adjustments to enable their survival in a host country. These adjustment difficulties, he noted, are even greater for a low level employee which shows that abilities play a role in determining the impact of LOF on an individual.

Foreigners on an average received less salaries when compared with their US counterparts which points out to ILOF according to Mezias (2007). Additionally, foreigners face problems because they fail to understand the legal environment of the US wherein the locals are better equipped. From an individual point of view, the time present in the host country and the position an individual holds, both have an impact on ILOF (Mezias, 2007). Also, very often people tend to develop either a positive or negative perception for a product (Insch and Miller, 2005) which further increases the span or range of LOF.

Also, LOF at an individual level can be observed in a workplace where foreign employees work in a specific domestic environment (Mezias and Mezias, 2007 and Fang et al, 2013). Another case of ILOF is that of entrepreneurs. ILOF is an additional disadvantage to them because they already face the challenges posed by a new business (Joardar and Wu, 2011). Sports is another area where ILOF can be observed. For example, Kwauk (2007) noted that being a foreigner affects the life and thereby the performance of a sportsman. The author discusses the issue of immigration and how it affects the life of a normal sports person.

However, despite the depth of the ILOF concept, a complete study that focuses systematically on the general drivers behind the phenomenon is lacking in the literature. In most major studies done in this area, the distance parameter is not given its due importance and the discussion generally revolves around the three major drivers: unfamiliarity, discrimination, and relational hazards. The Distance parameter was considered an important parameter in this analysis and hence covered in a major detail. Also in the present study, apart from the distance effects on ILOF, certain other exclusive factors like language and home conditions and their consequent impact on ILOF were also studied. Most of the previous work done on ILOF focuses more on a low-stakes environment. For instance, immigrant job seekers seek success in a subdued low stakes environment. However, in this scenario, the case of professional tennis players presents an opportunity to visualize this phenomenon in a higher-stakes competitive environment. Apart from the incentives at stake, major other parameters like importance of the tournament and player specific ability were also included in the analysis. This presents an opportunity to study if ILOF is present irrespective of parameters like income, ability and status to name a few.

In the next section, the sources and drivers of ILOF are examined in a specific context: the ATP World Tour. Analyzing ILOF from a sports perspective can make the entire study more compelling. There is a parallel between the general business world and that of sports. In a general business world, firms fight each other in the domestic markets and also tend to compete against each other in the foreign markets. The firm that better adapts to the foreign market and conditions will emerge as victor (Pedersen & Petersen, 2002). The same phenomenon also occurs in the area of sports. Players fight in both their home and host countries to gain supremacy over one another, and the player who better adapts to a certain place or conditions can become successful. Understanding players' performance, in a way, can help in understanding

firms' internationalization process. The strategies developed, the adjustments made to better adapt to the playing environment, the preparation that goes into playing a regular ATP tournament; all give an idea about the similarities that can be observed between the internationalization process of both a player and a firm. This paper hence reviews the unfamiliarity, discrimination, and relational hazards, apart from the distance parameter, that tennis players face in their year-long professional journeys. A detailed explanation of the ATP World Tour and the case of ILOF in ATP is given in the upcoming sections.

## **6. The ATP World Tour**

### **6.1 Overview**

The ATP (Association of Tennis Professionals) is the official governing body of all the men's professional tours: the ATP World Tour, the ATP Challenger Tour, and the ATP Champions Tour (the first two count towards the official rankings, while the third is a tour for retired professionals). The ATP World Tour takes care of the organizational responsibilities required in scheduling and maintaining the tournaments that allow the best tennis players to compete in some of the finest venues. It hosts 65 tournaments in 32 countries on all major continents (About, n.d.). The tournaments are all spread across major cities. The ATP stars compete in prestigious events that are further divided into subgroups. There are Grand Slams, 1000 masters, and 500 and 250 events. Grand Slams are not ATP events and are organized separately by an external individual body, but they are part of the ATP schedule and the points that players earn in Grand Slams always count towards the official rankings. Towards the end of the season, the top eight players in both singles and doubles based on the points accumulated over tournaments played during the year qualify for a one-off event called the ATP World Tour Finals, which is held in round-robin format unlike other tournaments. Currently held at the O2 Arena in London, the official world number one in the ATP rankings is crowned here.

### **6.2 Countries**

The ATP is truly international. It hosts 34 tournaments in the European region, 14 tournaments in the Americas, eight in Asia, four each in South America and Australia, and one

event in Africa. As mentioned already in the previous sections, these tournaments are spread over 32 countries on six continents. The general season begins in Asia and Oceania, where the majority of events take place in Australia; it then moves to Europe for a longer stretch of tournaments with a minor stop in the Americas. The proceedings then move to North America for a short period before a month-long Asian swing (sub-season). The season then continues again in Europe, where it culminates in the prestigious World Tour Finals. Table 2 below gives the complete 2014 ATP calendar in detail. This calendar is best explained in terms of the major tournaments that take place in the regular season. There are 14 major tournaments in total: four Grand Slam events (GS), nine ATP 1000 Masters (1000M), and one season-ending World Tour Finals (WTF). Table 3 contains the list of 14 events alongwith the cities and countries in which they are held. The month in which the tournaments are held is also included.

**Table 2: 2014 ATP Calendar**

Week no.	Starting Date	Tournament City	Tournament Country	ATP Points	Surface	Environment
1	Dec 30 (2014)	Brisbane	Australia	250	Hard	Outdoor
		Doha	Qatar	250	Hard	Outdoor
		Chennai	India	250	Hard	Outdoor
2	Jan 6	Sydney	Australia	250	Hard	Outdoor
		Auckland	New Zealand	250	Hard	Outdoor
3,4	Jan 13	Melbourne	Australia	2000	Hard	Outdoor
5	Jan 27	Multiple	Multiple	Davis Cup	-	-
6	Feb 3	Montpellier	France	250	Hard	Indoor
		Zagreb	Croatia	250	Hard	Indoor
		Vina del Mar	Chile	250	Clay	Outdoor
7	Feb 10	Rotterdam	Netherlands	500	Hard	Indoor
		Memphis	US	250	Hard	Indoor
		Buenos Aires	Argentina	250	Clay	Outdoor
8	Feb 17	Rio de Janeiro	Brazil	500	Clay	Outdoor
		Marseille	France	250	Hard	Indoor
		Delray Beach	US	250	Hard	Outdoor
9	Feb 24	Dubai	UAE	500	Hard	Outdoor
		Acapulco	Mexico	500	Hard	Outdoor
		Sao Paulo	Brazil	250	Clay	Indoor

10,11	Mar 3	Indian Wells	US	1000	Hard	Outdoor
12,13	Mar 17	Miami	US	1000	Hard	Outdoor
14	Mar 31	Multiple	Multiple	Davis Cup	-	-
15	Apr 7	Casablanca	Morocco	250	Clay	Outdoor
		Houston	US	250	Clay	Outdoor
16	Apr 14	Monte-Carlo	Monaco	1000	Clay	Outdoor
17	Apr 21	Barcelona	Spain	500	Clay	Outdoor
		Bucharest	Romania	250	Clay	Outdoor
18	Apr 28	Estoril	Portugal	250	Clay	Outdoor
		Munich	Germany	250	Clay	Outdoor
19	May 5	Madrid	Spain	1000	Clay	Outdoor
20	May 12	Rome	Italy	1000	Clay	Outdoor
21	May 19	Dusseldorf	Germany	250	Clay	Outdoor
		Nice	France	250	Clay	Outdoor
22,23	May 26	Paris	France	2000	Clay	Outdoor
24	Jun 9	Halle	Germany	250	Grass	Outdoor
		London	UK	250	Grass	Outdoor
25	Jun 16	s-Hertogenbosch	Netherlands	250	Grass	Outdoor
		Eastbourne	UK	250	Grass	Outdoor
26,27	Jun 23	London	UK	2000	Grass	Outdoor
28	Jul 7	Bastad	Sweden	250	Clay	Outdoor
		Stuttgart	Germany	250	Clay	Outdoor
		Newport	US	250	Grass	Outdoor
29	Jul 14	Hamburg	Germany	500	Clay	Outdoor
		Bogota	Colombia	250	Hard	Outdoor
30	Jul 21	Atlanta	US	250	Hard	Outdoor
		Gstaad	Switzerland	250	Clay	Outdoor
		Umag	Croatia	250	Clay	Outdoor
31	Jul 28	Kitzbuhel	Austria	250	Clay	Outdoor
		Washington D.C.	US	500	Hard	Outdoor
32	Aug 4	Montreal	Canada	1000	Hard	Outdoor
33	Aug 11	Cincinnati	US	1000	Hard	Outdoor
34	Aug 18	Winston-Salem	US	250	Hard	Outdoor
35,36	Aug 25	New York	US	2000	Hard	Outdoor
37	Sep 8	Multiple	Multiple	Davis Cup	-	-

38	Sep 15	Metz	France	250	Hard	Indoor
		St. Petersburg	Russia	250	Hard	Indoor
39	Sep 22	Kuala Lumpur	Malaysia	250	Hard	Indoor
		Bangkok	Thailand	250	Hard	Indoor
40	Sep 29	Beijing	China	500	Hard	Outdoor
		Tokyo	Japan	500	Hard	Outdoor
41	Oct 6	Shanghai	China	1000	Hard	Indoor
42	Oct 13	Moscow	Russia	250	Hard	Indoor
		Stockholm	Sweden	250	Hard	Indoor
		Vienna	Austria	250	Hard	Indoor
43	Oct 20	Valencia	Spain	500	Hard	Indoor
		Basel	Switzerland	500	Hard	Indoor
44	Oct 27	Paris	France	1000	Hard	Indoor
45	Nov 4	-	-	-	-	-
46	Nov 10	London	UK	1500	Hard	Indoor
47	Nov 17	Single	Single	Davis Cup Final	-	-

**Table 3: Major events on ATP World Tour and the corresponding Cities, Countries and Month held**

<u>Event Type</u>	<u>Event</u>	<u>City</u>	<u>Country</u>	<u>Month</u>
<b>Grand Slam</b>	Australian Open	Melbourne	Australia	January
<b>Masters 1000</b>	BNP Paribas Open	Indian Wells, California	United States	March
<b>Masters 1000</b>	Miami Open	Miami, Florida	United States	March
<b>Masters 1000</b>	Monte Carlo Rolex Masters	Monte Carlo	Monaco	April
<b>Masters 1000</b>	Mutua Madrid Open	Madrid	Spain	May
<b>Masters 1000</b>	InternazionaliBNL d'italia	Rome	Italy	May
<b>Grand Slam</b>	Roland Garros (French Open)	Paris	France	May
<b>Grand Slam</b>	Wimbledon	London	Great Britain	June
<b>Masters 1000</b>	Rogers Cup	Toronto	Canada	August
<b>Masters 1000</b>	Western & Southern Open	Cincinnati, Ohio	United States	August

<b>Grand Slam</b>	US Open	New York	United States	August
<b>Masters 1000</b>	Shanghai Rolex Masters	Shanghai	China	October
<b>Masters 1000</b>	BNP Paribas Masters	Paris	France	October
<b>World Tour Finals</b>	Barclays ATP World Tour Finals	London	Great Britain	November

It is evident how the pattern of the regular ATP World Tour has evolved. It begins in Oceania, centering on the Australian Open; and then it moves to Europe, where several Grand Slam and 1000 Masters events are held. There is a short stop in the United States because of the 1000 Masters events that take place in North America. After the European swing, the season again shifts towards the Americas, where the final Grand Slam event and the two 1000 Masters events are held. The Asian swing comes next owing to the presence of the Shanghai Masters; finally, the proceedings finish in Europe with the Paris Masters and the Tour Finals. It is the players' responsibility to determine their own schedules and move to different countries as part of their season-long journeys to earn some crucial points which help them advance in the official ATP Rankings.

### **6.3 Calendar and Schedule**

The general calendar starts in the first week of January and end around the last week of October, after which a one-off event, the World Tour Finals and the Davis Cup Final (a competition between countries) take place. Usually there is atleast one event each week of the year. Exceptions arise when a Grand Slam event, an ATP Masters 1000 event, or a Davis Cup tie takes place. As demonstrated in the previous paragraph, the calendar can be explained through the major events that take place. It can also be broadly divided by the type of surface the tournament is played on. It begins with the hard court swing, and then it moves on to clay courts and grass courts. Finally it returns to hard courts and then ends with indoor hard courts. Table 4 and Figure 1 give a detailed view of the sub-seasons in the ATP World Tour.

**Table 4: Major swings (or sub-seasons) in the ATP Calendar**

<b>No</b>	<b>Swing</b>	<b>Major Events</b>	<b>Duration</b>	<b>Major stops (Cities)</b>	<b>No of Events</b>
1	Oceania	Australian Open	1 month (January)	Auckland, Brisbane, Melbourne, Sydney	4
2	North American Hard Court	Indian Wells and Miami Master's	2 months (February and March)	Acapulco, Delray Beach, Houston, Indian Wells, Memphis, Miami	6
3	Latin American Clay Court	Rio Open (500 Event)	1 month (February)	Buenos Aires, Rio de Janeiro, Sao Paulo, Vina del Mar	4
4	European Hard Court	Monte Carlo, Madrid and Rome Masters, French Open (Roland Garros)	2 months (April and May)	Barcelona, Bucharest, Dusseldorf, Madrid, Monte Carlo, Munich, Nice, Oeiras, Paris, Rome	10
5	Grass court	Wimbledon	1 month (June)	Eastbourne, Halle, London, s-Hertogenbosch	5
6	North American Hard Court	Rogers Cup, Western & Southern Open	2 months (July and August)	Atlanta, Cincinnati, New York, Toronto, Washington, Winston-Salem	6
7	Asian	Shanghai Rolex Masters	1 month (September and October)	Beijing, Kuala Lumpur, Shanghai, Shenzhen, Tokyo	5
8	Indoor Hard Court	Paris Masters, World Tour Finals	1 month (October and November)	Basel, London, Moscow, Paris, Stockholm, Valencia, Vienna,	7



**Figure 1: A Map of the sub seasons on the ATP World Tour**

**6.4 ATP Points System**

The ATP Rankings follow a 52-week period system. In other words, a ranking at any point in time is defined as the points that the particular player has earned over the past 52 weeks. Only 18 of the total number of tournaments played by a player in that period are considered. Some governing rules dictate which 18 tournaments are selected for the rankings table. For instance, if a player has played all the tournaments (Grand Slams, 1000 Masters, 500s, and 250s), only the four Grand Slam events, eight mandatory masters (all masters are mandatory except the Monte Carlo Masters), and the best six of the remaining tournaments are considered. There is a different pattern for the ranking points earned depending on the type of the tournament. Table 5 gives the complete set of points earned across all types of tournaments.

**Table 5: Points Distribution across different tournament types**

<b>Result</b>	<b>G.S</b>	<b>WTF</b>	<b>1000 M (D-96)</b>	<b>1000 M (D-56 or 48)</b>	<b>ATP 500 (D-48)</b>	<b>ATP 500 (D-32)</b>	<b>ATP 250 (D- 56 or 48)</b>	<b>ATP 250 (D- 32 or 28)</b>
<b>Winner</b>	2000	1500*	1000	1000	500	500	250	250
<b>Runner up</b>	1200		600	600	300	300	150	150
<b>Semi Finalist</b>	720		360	360	180	180	90	90
<b>Quarter Finalist</b>	360		180	180	90	90	45	45
<b>Rd of 16</b>	180		90	90	45	45	20	20
<b>Rd of 32</b>	90		45	45 (10)	20 (0)	0	10 (0)	0
<b>Rd of 64</b>	45		25 (10)	10	0	-	0	-
<b>Rd of 128</b>	10		10	-	-	-	-	-

\* 1500 for the Undefeated Champion (Round Robin Format, 200 for each win in Round robin matches, 400 for the SF win, 500 for the Final win)

\*\* Points in brackets are the points earned by players who lose in that particular round after earning 1st round byes.

### **6.5 Prize Money (or Total Financial Commitment)**

Prize money is one other important parameter to consider because it has a considerable influence on why a player chooses one tournament over the other and hence chooses one city over the other. Total financial commitment is the phrase used by the ATP circles to refer to the sum of all the money given to all players who participate in the tournament. It is the total financial expense that goes into the tournament. Detailed data regarding the financial commitment across different types of tournaments is provided in Table 6.

**Table 6: Total Financial Commitment across different types of events**

<b>Event Type</b>	<b>Event</b>	<b>Total Financial Commitment (in USD)</b>
Grand Slam	Australian Open	\$ 13,353,860
	Roland Garros	\$15,875,798
	Wimbledon	\$19,401,446
	US Open	\$ 17,851,868
WTF	ATP World Tour Finals	\$ 6,500,000
Masters 1000	Indian Wells, Miami, Monte Carlo, Madrid, Rome, Rogers Cup, Western & Southern Open, Shanghai, Paris	\$ 3,766,270 - \$ 6,959,295
ATP 500	Rotterdam, Rio Open, Acapulco, Dubai, Barcelona, Hamburg, Washington, Beijing, Tokyo, Basel, Valencia	\$ 1,373,420 - \$ 3,755,065
ATP 250	Multiple	\$ 459,140 - \$ 1,112,625

In light of this important basic information regarding the ATP World Tour, the next subsection details how the ILOF applies in the ATP; i.e., how ILOF pertains to the players on the ATP World Tour.

## **6.6 The Case of ILOF in ATP**

The factors which impact a player's final performance have been touched upon in the previous sections. The amount a player travels, the points or prize money he earns in a tournament, and the presence of home conditions all explain a player's performance. The initial introduction also defines the factors that drive LOF. These four factors, namely unfamiliarity, discrimination, relational hazards, and spatial distance, are all present in the ATP World Tour as well. These factors affect the performance of a professional athlete in various ways. Some instances, in the words of players themselves, can be seen below;

### **6.6.1 Quotes relating to unfamiliarity hazards**

*"It is unacceptable that a tournament is held in these conditions. The bounce of the ball is too irregular, the lines are falling off and the balls are far too soft. You cannot have any long rallies here."* - **Rafael Nadal** (Sao Paulo, 2013).

*"I came here early; got used to the courts because they are not really straight. They are like playing on a mountain."* - **Ernests Gulbis** (Madrid, 2010; Ricky, 2013).

*"For sure, that was a bad decision in that moment. I believe that the clay is red. We don't have 100 tournaments on clay per year. The clay is part of the history of our sport. I don't see red grass, so I don't like blue clay."* - **Rafael Nadal** (Madrid, 2016; Rothenberg, 2016).

*"To me that's not tennis. Either I come out with football shoes or I invite Chuck Norris to advise me how to play on this court. It took me at least a week to try to get used to this surface and somehow find a way to win matches and play a decent level of tennis. There is no discussion in my eyes, it's very simple. No blue clay for me"* - **Novak Djokovic** (Madrid, 2012; Reporter, 2012).

**Unfamiliar** conditions harm a player's performance to some extent. Conditions, such as the surface and the altitude can be quite new to a player, and the level of adjustment that the player makes to those conditions largely determines his performance. For instance, when the organizers of the Madrid 1000 Masters decided to switch to blue clay from the traditional red clay, there was a significant outcry among the top players who criticized the unfamiliar surface on the grounds that it was slippery. Additionally, the presence of an unfamiliar or unknown opponent can affect a players' performance because he does not know exactly what to expect from the new player. Even the language spoken in a place can determine the familiarity component. For instance, playing in an English-speaking country can be beneficial for a player by helping him adjust to the environment. Playing in his home country, playing on his home continent, or playing in a country that shares a common official language can all matter in deciding a player's final performance.

#### **6.6.2 Quotes relating to discrimination hazards**

*"I think the Canadians support their athletes a little better than the Australians do," - Nick Kyrgios (Montreal, 2016).*

*"Murray, meanwhile, played his fourth consecutive match on Centre Court, against France's Richard Gasquet. The 12th seed and British No 1, who has never reached the quarter-final of a Grand Slam tournament, has played all his matches there," - Caroline Gammell (Wimbledon, 2008; Gammell, 2008).*

*"But I don't think just because you're from the home country you should necessarily get preferential treatment, but I hope that I play my next few matches on Centre." - Andy Murray (Wimbledon, 2012; Crooks, 2012).*

**Discrimination** is another important factor that can affect a player's performance. This discrimination often comes in the form of crowd support for a home country's champion or a crowd favorite. For example, an American player can find much more home support in the US Open tournament than a top Japanese player can. The crowd can support a player and motivate him to deliver his best performance. Most low-ranked players tend to give their best

performances in front of their home crowd. These home-grown players are also given a plethora of advantages. For instance, some very low-ranked players are given wildcards to participate in home tournaments that otherwise would not be open to them on the basis of their ATP ranking (Bodo, 2017). Every tournament reserves some wildcard entries for its home-grown players so that large crowds come in to encourage local players. These local players are also given undue advantages when it comes to the allotment of show courts (Courts which are accessible by larger number of crowds relatively) (Gammell, 2008). There have been several instances where low-ranked players from home countries find themselves on top show courts at major tournaments while high-ranked players from other countries are relegated to smaller courts.

### **6.6.3 Quotes relating to relational hazards**

*"The chances for greatness in tennis are tiny and decreasing by the year, as the sport takes root in more places around the globe."* - The Wall Street Journal (Perrotta, 2013)

*"Once you find that peace, that place of peace and quiet, harmony and confidence, that's when you start playing your best."* — **Roger Federer (Osborn, 2015).**

*"I feel more comfortable living in Japan. They have much better food."* — **Kei Nishikori (Osborn, 2015).**

There is a difference in the effort put forth by a player when he is playing a domestic tournament and his effort when playing abroad. The home environment can be very soothing for a player compared to being abroad, where he remains a guest although many facilities are provided to him. This relational difference is a form of **relational** hazard. A new place implies a new culture, long travel, and a completely new set of conditions. This requires the players to expend additional effort in order to acclimate to the new environment. Becoming accustomed to the food, language, and place can be very important for a player from a psychological perspective. It is also very important to consider the time that players have to adjust to a new

environment. They move continuously for so many consecutive weeks that they have only a few days to gain a sense of the overall conditions both on and off the court.

#### **6.6.4 Quotes relating to distance related factors**

*"When one pictures professional tennis players, they imagine a life of luxury while circumnavigating the globe. The honest answer is that aside from a few at the tippy top, travel for most on the tour is much more hassle and grind than luxury." - Gilbert Ott (Ott, 2015).*

*"I had signed up for five Challengers, hoping to get into the main draw of one of them. Between here, the one in Granby (Canada) and three in Europe, I ended up getting in here. But the problem was, I got my ticket for Granby before the entry list came out. Initially I was supposed to fly into Chicago, going from Luxembourg to Istanbul with a layover there and then Istanbul to Chicago. We tried to change the ticket and all the flights were full. I ended up flying to Istanbul and Frankfurt and then Frankfurt to Newark." - Dimitar Kutrovsky (Meiseles, 2015).*

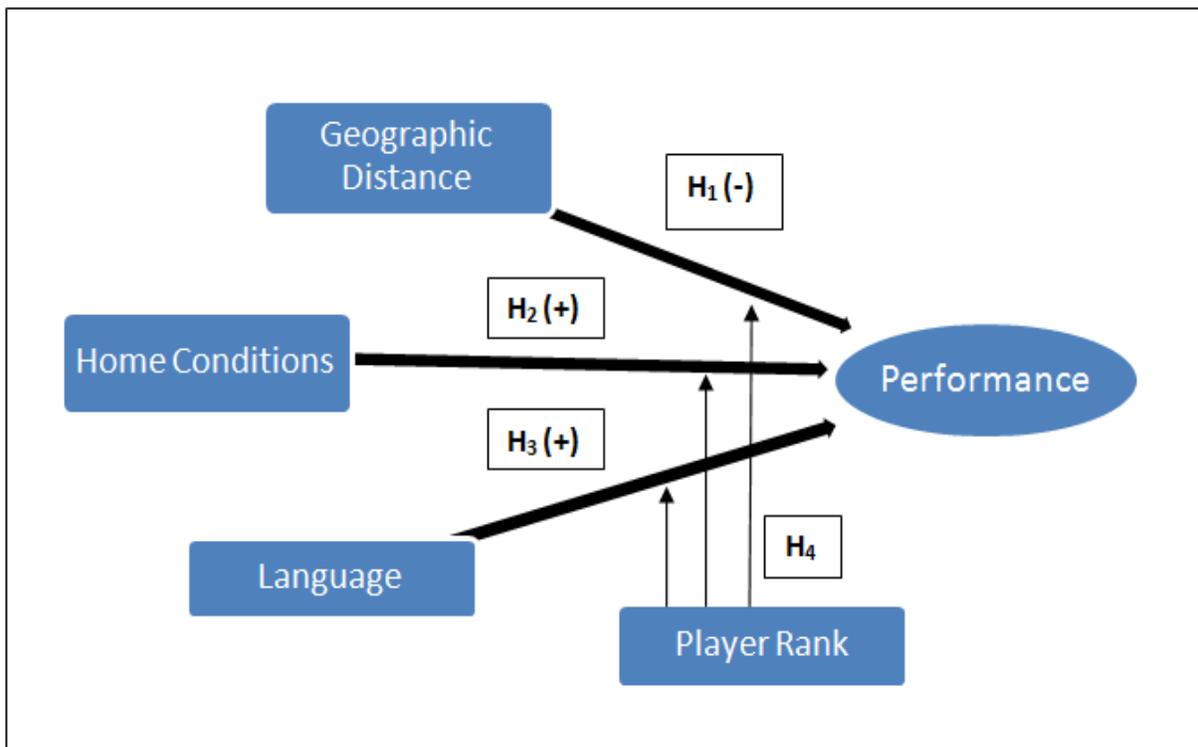
*"I didn't expect it to be that long. The main problem isn't about the journey. It's more about the jet lag. Going there wasn't the issue, coming back was a different thing." - Saketh Myneni (Meiseles, 2015).*

*"I don't have the status to use the lounges in most airports but I would have to say the Lufthansa lounge in Munich was quite nice. My former coach had a few extra lounge vouchers, so he offered me one." - Felip Peliwo (Ott, 2015).*

Another important set of challenges that players face consists of **distance**-related factors. One major challenge is that in a season, a player is expected to travel to many places week after week according to the tournament schedule. For instance, a player can play a tournament in Melbourne one week and another in New York the next. And also certain factors are related to long journeys. For instance, tiredness and jet lag affect tennis players. And to consider that they should be playing a tournament immediately after a long journey and also to be doing this week

in and week out for atleast 30-40 times a year further magnifies the effects of this particular factor. When playing in consecutive tournaments, players are sometimes expected to move within a country, while other times they move between countries and continents. It is also important to consider that the majority of the players in the rankings (outside the top 50) find it difficult to earn enough in prize money to cover the costs involved. This makes the going more difficult for players because they lack the liberty to enjoy better services during their grueling journeys.

## **7. Hypothesis Development**



**Figure 2: Hypothesis mapping**

### **7.1 Geographic distance and performance**

Distance is an important factor in the functioning of a firm. Kudina (2012) notes that the distribution of a company's activities across different regions has an adverse effect on performance, which can be attributed to the LOF. For instance, the place and the distance from the home country influences the type of entry mode a firm chooses, which in turn has a

considerable impact on the LOF that the firm experiences (Elia, Morietti and Piscitello, 2014). Also certain operational problems arise to the firm because of the distance between the Headquarters and the foreign subsidiary unit (Luo, Nyaw and Shenkar, 2002). Operational problems are those management level problems faced by a firm. In this case, the firm can resort to exporting and thereby protect itself from the effects of LOF, or it can choose to form joint ventures to limit the possible effects of the LOF. Also coordination and communication becomes a major problem within a organization. Vernon (1977) noted that additional planning and care needs to be taken to overcome this gap in coordination and communication that is created by the spatial distance. This gap hampers the decision making process within the organization which makes it tough for the firm to realize its actual potential. Also, movement of capital and movement of people becomes a major problem because of the increased distance between the business units (Asmussen, Goerzen and Nielsen, 2013). Especially, the firms might have to rely on expatriates or plan about hiring local people in order to deal with the shortcomings in human resources.

Similarly, distance can have pronounced effects on the performance of a professional tennis player. Distance puts a great deal of pressure, both physical and mental, on a player who has to perform in various tournaments spread across many cities around the globe. After playing a tournament in North America, he could find himself playing in Australia the following week. And the player must adjust quickly to these changes in surroundings and the rigorous nature of the schedule makes it even more complicated for a player to deliver his best performance. Since the majority of the players participate in tournaments in consecutive weeks, they may also suffer from jet lag, which is common after long journeys. Considering that these players do not earn enough prize money to make their travels comfortable, the problems with these long journeys are exacerbated. In these arduous conditions, it can be a daunting task for a player to deliver his best performance. The tight schedule also causes players' performance to suffer. This information leads to this paper's first hypothesis.

***Hypothesis 1: The greater the distance between the host country and a player's home country, the more adversely the players' performance is affected.***

## **7.2 Home conditions and performance**

The difference in conditions between home country and host country is often a very important factor in the degree of LOF experienced by a firm. Christian Geisler Asmussen (2009) finds that firms prefer to work in their domestic environments because they get better returns on their investments with few risks. The company's decision making rests a great deal on the cultural distance between the home country and the host country (Calhoun, 2002; Chen and Mezias, 2002). This can impact the type of entry mode chosen by the firm, or lead it to consider other alternatives such as fielding some expatriates. The larger the distance, the more difficult the firm finds adjusting to the host country. Antolin and Higon (2012) are of the opinion that domestic firms enjoy a certain home advantage over foreign firms and that this disadvantage for foreign firms is related to their international origin. For instance, domestic firms have an advantage over foreign firms because they are culturally better equipped to tackle the local environment (Calhoun, 2002; Chen and Mezias, 2002). The medium of instruction can also play an important role in increasing the degree of LOF component for the foreign firms (Brannen, 2004; Kuznetsov and Kuznetsova, 2014). This difficulty in adjusting to the medium of instruction creates a knowledge deficit for the foreign firms, which makes it difficult for them to understand the legal and cultural systems of the host country and this contributes to the LOF (Mezias, 2002). Occasionally these foreign firms find unexpected help in the host country. For instance, a foreign firm can build managerial ties, which can be very helpful in the long term. However, because of the LOF, the foreign firms fall behind domestic firms in reaping the benefits of these managerial ties (Juan, Poppo and Zhou, 2008).

Discrimination is another important challenge that foreign firms face. It can begin as discrimination against the firm's country of origin and develop into a negative perceptual bias against firms from that specific country (Griffith et al, 2013). However, in some cases a positive perceptual bias can actually make foreignness an asset rather than a liability (Insch and Miller, 2005; Nachum, 2010). All of these negative effects are detrimental to performance and, in some extreme cases, can even lead to the exit of foreign firms (Rocha et al, 2014). These firms can find the host country environment unfit for further activities and return to their home country or choose another country as an alternative. However, not all firms see exit as an option, and some firms consider different methods to spare them the ignominy of an exit. For example, consider

those firms which are limited in their capabilities and facing an unknown environment; these firms attempt to copy the methods they use in their specific home countries in order to succeed in the host countries they get into (Hwang and Lu, 2010). Other firms seek to adapt to the host country environment by constantly learning and improving their strategies (Pedersen, 2002).

Home advantage is very important in the area of sports. In fact, the advantages of playing at home are such that players or teams usually tend to play much better at home than abroad. Because home conditions (or supportive environments) have a positive impact on players' state of mind, and it makes them believe that they are quite aware of the conditions they are playing in and keeps them motivated to perform well in front of their home crowds. This can both motivate players to give their best performances or can sometimes put additional pressure on them, which can disadvantage them in important situations. The same is the case with ATP players. When playing in home conditions, some players tend to exceed expectations and deliver better performances. Also it is possible for the local playing authorities to give additional benefits to their home grown players. It can be allotting best courts to play; or could be better scheduling to the players or they can even provide a main draw berth to their lower ranked local players. This leads to the second hypothesis,

***Hypothesis 2: The presence of home conditions is positively correlated with performance.***

### **7.3 Language parameters and performance**

Cultural factors are also significant in deciding the performance of a foreign firm (Chen and Mezas, 2002). Depending on the cultural and institutional distance between the home country and host country, a firm can change its internationalization strategies or decision making in a host country. It can even consider exiting the host country (Calhoun, 2002). As a consequence, firms tend to pick countries that resemble their home country environments or try to adjust themselves into the host countries in order to make their foreign expansions successful. The medium of instruction also plays a similar role in this regard (Kuznetsov and Kuznetsova, 2014). Language becomes particularly crucial when employees from the home country enter a different host country. If the languages are similar, employees may find it easier to become accustomed to the environment and begin to perform better, which culminates in a better performance for the firm overall. On the other hand, if the languages are different, employees may find it difficult to

adjust. This could force the company to hire locals for some of the more important positions, which they would have otherwise preferred to keep for themselves. This can create organizational problems as the new personnel might find it difficult to keep pace with the working style of the firm.

A regular ATP player is expected to travel around the world as part of his season-long commitments. The very top players tend to play a light schedule because they usually play till the final stages in most of the tournaments they participate in. However, towards the bottom of the rankings, players participate in many tournaments because they are eliminated in the early rounds in most of the tournaments. Playing in more tournaments involves traveling to many countries that have different cultures and languages. This is a routine for most of the players on tour except for the very top players, who have very few stops compared to the low-ranked players. If a player finds himself in a country that shares the same official language as his home country, he experiences very little culture shock and finds it easier to acclimate to the new environment. On the other hand, if the language spoken by the player is different to that spoken in the host country, the player needs to put in additional effort to adjust to the environment, which can affect his final performance. This gives rise to the third hypothesis.

***Hypothesis 3: The language component has a positive impact on performance.***

#### **7.4 Rank and performance**

Firms are impacted by the LOF at different rates depending on their size and the capabilities the firm possesses. For instance, small and medium enterprises, which have limited capabilities, experience LOF differently than a larger MNE (Beamish and Lu, 2001; Barnard, 2010). While bigger firms with better capabilities can follow procedures like reputation building or reliability enhancement to counter LOF (Linke, Klossek and Nippa, 2012), smaller firms or firms with lesser capabilities can resort to exporting their home country capabilities or copying the procedures of the domestic firms in the host country (Zaheer, 1995). Firms therefore develop certain unique organizational capabilities to cover up the incompetencies that arise when working abroad (Elango, 2003). For instance, firms develop IT capabilities in order to improve their performance abroad (Sarker, Sarker and Zhang, 2008). Occasionally, firms resort to their international experience to aid them in difficult situations in a host country (Belkin, Gardberg

and Newburry, 2006; Dau, 2013). This latter option results from the fact that over time, firms develop the necessary competencies to perform better abroad (Mosakowski and Zaheer, 1997).

Similar patterns can also be observed in the ATP World Tour. Many players go on the tour, and one of the major characteristics that differentiates each player is his specific ranking, which can change each week. The ranking is a good measure of a player's abilities. The players with the best rankings are those players with better abilities; these players usually find better ways to give their best in the tournaments they participate in which acts as a testament to their better ranking. Hence a important parameter in this present study is variable rank, which can impact the correlation between some of the independent variables and performance. For instance, the previous hypothesis explains that distance negatively affects a player's performance. Upon considering the player with his specific rank a correlation might be evident, which can differ from our initial hypothesis. The higher-ranked players may not face any distance-related effects, which contradicts with the first hypothesis. This leads to the final hypothesis.

***Hypothesis 4: The ability of a player moderates the correlation between the independent variables (distance, home conditions, and language) and the performance.***

## **8. Methodology**

### **8.1 Sample**

The dataset here comprises all the major data from Men's Professional Tennis for the year 2014. Professional tennis players, as part of their year-long journey, are expected to travel and perform in many different places and environments. One week a player might find himself playing in Paris, and the next week he could find himself in some other city. One day he might play on a grass court, and on another day he could be expected to perform on a clay court. All these new and different situations point towards ILOF.

The various conditions that challenge the players create an element of uncertainty. The surface and place changes can create relative difficulty, which affects their performance. The geographic distance traveled across various cities can affect them physically or mentally, which in turn significantly affects their end results. The events in an ATP calendar year are scheduled in such a way that leaves very few gaps for a player to reflect on his performance. Therefore

unless a player deliberately takes some time off from the tour, there is no way a player can escape from the challenges posed by the arduous demands of the professional journey.

In this dataset, every tournament that is part of the ATP World Tour for the year 2014 is included. All the Davis Cup events are excluded because the event is between countries and not every player receives an equal chance to participate in the event. The year-end ATP World Tour Finals event, which only the top eight players of the year are eligible to participate in, is also excluded. Given that this contradicts the notion of equal opportunity for all players, this tournament has been eliminated from the database. Sixty-three tournaments remain; four Grand Slam tournaments and nine Masters 1000 tournaments are in the dataset, while 11 belong to the 500 class and 39 to the 250 class. In total there are 2648 observations, where each observation includes all the data regarding a player's performance at one specific tournament along with all important information in terms of the geography of the city hosting the tournament. Also included in each row of observation are facts related to the tournament such as the prize money, draw size, surface, and environment.

## **8.2 Data Collection**

Most of the data used has been acquired from the official website of Men's Professional Tennis (the ATP World Tour, <http://www.atpworldtour.com>). The data collected is exclusively for the year 2014. The website gives the rankings of all players and their year-long journeys on the ATP World Tour dating from 1973. The data has been systematically collected from the website in terms of both tournaments and players and has been used to complete the final database. The TRR (Tournament Relative Ranking) and OTRR (Overall Tournament Relative Ranking) have been calculated separately, but the inputs for these calculations (i.e. the ranks of the players entered) have again been taken from the official ATP website.

The prize money parameter was initially obtained in many currencies besides the US dollar. In order to maintain a singular unit, which allows for a comparative scale, all other currencies have been converted to US dollars. Conversion rates as of January 1<sup>st</sup>, 2014 were followed and a currency converter website (<http://www.xe.com>) helped in this process.

The data related to national language has been retrieved from the World Fact Book section of the Central Intelligence Agency (CIA) website. Only the official or the majority spoken

languages were considered from those listed. The country and continent data, which are part of the continental parameter, were taken from World Atlas (<http://www.worldatlas.com>).

Demographia World Urban Areas have supplied data related to city population and area (Demographia World Urban Areas, 2016). Most of the cities were covered in this report except for a select few. For those, another web source called City Population (<https://www.citypopulation.de>) was used. The altitudes of different cities have been retrieved from a specific altitude website (<http://www.altitude.nu>). All data regarding geographic distance has been calculated using the distance calculator website (<https://www.distancecalculator.net>).

### **8.3 Types of Variables**

#### **8.3.1 Dependent Variables**

##### **Performance:**

A player's performance in a particular tournament is captured by this parameter. The final performances of each player in every tournament in the year 2014 are used. This is crucial information for determining whether the player's performance has been impacted by any of the external parameters discussed below.

The player's performance in a tournament is considered and a certain number is assigned for each kind of performance. The ATP season has different types of tournaments, namely Grand Slams, Masters, 500s and 250s; and each kind of tournament has different draw sizes (Number of players participating in a tournament). For instance, all Grand Slam tournaments share the same number of players, whereas the other class of tournaments have varying types of draws. Table 7 better explains the division as well as the number scale assigned for performance.

**Table 7: Number Scale for Performance**

<b><u>Type of Draw</u></b>	<b><u>Type of Tournaments</u></b>	<b><u>W</u></b>	<b><u>F</u></b>	<b><u>SF</u></b>	<b><u>QF</u></b>	<b><u>4R</u></b>	<b><u>3R</u></b>	<b><u>2R</u></b>	<b><u>1R</u></b>
<b>128 or 96</b>	Grand Slams, Master 1000's	8	7	6	5	4	3	2	1
<b>56 or 48</b>	Masters 1000's, 500's, 250's	8	7	6	5	NA	3	2	1
<b>32 or 28</b>	500's, 250's	8	7	6	5	NA	NA	2	1

### Points Earned:

This parameter is almost identical to the performance parameter. Here the player earns some points as a result of his performance in a particular tournament. This parameter therefore has the same implications as the performance parameter. This variable can be used to check the robustness of the model.

The only major difference is that a specific number has been assigned to each kind of performance in the performance parameter, whereas in the points earned parameter, the points are already assigned by the ATP to each type of performance. Table 8 below explains the points distribution in the ATP for all the types of tournaments.

**Table 8: Points Earned table for all the tournaments on ATP**

<u>Type of Tournament</u>	<u>W</u>	<u>F</u>	<u>SF</u>	<u>QF</u>	<u>4R</u>	<u>3R</u>	<u>2R</u>	<u>1R</u>
Grand Slams	2000	1200	720	360	180	90	45	10
Master1000's (96)	1000	600	360	180	90	45	25	10
Master1000's (56/48)	1000	600	360	180	NA	90	45(10)*	10
500's (48)	500	300	180	90	NA	45	20(0)*	0
500's (32)	500	300	180	90	NA	NA	45	0
250's (56/48)	250	150	90	45	NA	20	10(0)*	0
250's (32)	250	150	90	45	NA	NA	20	0
250's (28)	250	150	90	45	NA	NA	20(0)*	0

### 8.3.2 Independent Variables

#### Geographic Distance:

This parameter accounts for one of the most important aspects of this study: the distance-related effects. As explained previously, the geographic distance drives the LOF and impacts the performance of a company or an individual. This parameter accounts for the geographic distance between the player's home country and the country where the tournament takes place. If the home country and the tournament hosting country are the same, the parameter value is set to zero; otherwise the exact distance in air miles is calculated and used.

#### Home Conditions Parameter:

It is important to capture all the minute differences between a player's home country and the country hosting the tournament because of the advantage that home conditions imply. This

parameter therefore attempts to compare the presence and absence of home conditions. This parameter is a binary variable. If the home country of the player and the tournament-hosting country are similar, the parameter value is set to one; if the home country of the player and the host country are different, the parameter is set to zero.

### **Continental Parameter:**

This is a slight extension of the home conditions parameter. This parameter allows for a broader perspective and extends to the continental level. It is intended to convey how much of an advantage a player would receive if he plays on the same continent as his home country.

The notation for the continental parameter is similar to that of the home conditions parameter. The home conditions parameter centers on the countries, while in the case of the continental parameter the focus shifts to the continents. If the continent of the player and of the tournament-hosting country is the same, the parameter is set to one. For all other cases, it is set to zero.

### **English Speaking Parameter:**

The language spoken in a country can have a number of impacts on an individual's performance. English is by far the most widely spoken language in the world. In other words, it is one of the most understood languages everywhere. Knowing the local language may therefore not have a direct impact on performance, but it helps the player acclimate better to the environment, which can have an impact on performance. This can be deemed more psychological than physical. This parameter is also a binary variable. If a player from a country that has English as one of its official languages participates in a tournament that takes place in a country that has English as one of its official languages, then the parameter is set to one. In all other cases, it is set to zero.

### **Language Parameter:**

The English speaking parameter captures only a part of the whole story. For instance, assume an American is playing in the UK. Since an English-speaking player is playing in an English-speaking country, the effects are captured by the above parameter. Now assume a French player is playing in Canada. The above parameter above cannot capture the obvious linguistic advantages that a French player has when playing in Canada (A French-English bilingual

country). It is therefore important to increase the scope of the parameter in order to capture the advantages that a player has by virtue of playing in a country that shares his national official language. This is the sole purpose of the language parameter.

The notation is same as that of the English speaking parameter. This is again a binary variable. If the official language of the player matches the official language of the country that hosts the tournament, the parameter is set to one. In all other cases, the parameter is set to zero.

### **8.3.3 Control Variables**

#### **Week Number:**

The week number refers to the week at which the tournament is happening in the year-long ATP season. This is an important parameter because the week number corresponds to the exact stage of the season and can explain the impact of time on the player's performance. For instance, players' performance tends to decline towards the end of the season.

The first week of the ATP 2014 season is coded as one; and for each subsequent week the parameter increases by one. The parameter goes upto 44, with Paris Masters 1000 being the last tournament considered in the analysis.

#### **Number of Weeks from Majors:**

The weeks from major tournaments parameter corresponds to the number of weeks a specific tournament is from the nearest major tournaments. It is necessary to capture this parameter because players tend to plan their schedules around the four major tournaments in order to peak in performance at the prestigious tournaments. The nearest major tournament therefore serves as a significant motivating force for most players; therefore, there is a need to control for this factor. The week of the major tournament is assigned zero. For the preceding week, i.e., the week before the major tournament, the parameter is set to one; the number increases by one each week in the descending order of the week number. For the tournaments that take place after the fourth Grand Slam (the US Open), there is no nearest major tournament. For these specific observations, the last tournament (the Paris Masters 1000) is considered to be the major tournament because it signals the end of the season. A similar procedure is repeated for these observations.

**Draw:**

The draw size refers to the number of players participating in a specific tournament. There is a great deal of variation in the number of players that enter a tournament. It begins at 28 and can be as high as 128. The number of players in a tournament usually explains the level of importance of the tournament. For example, Grand Slam tournaments with a field of 128 are considered most prestigious, whereas 28-draw tournaments are usually the less important 250s. There are multiple draw sizes for the tournaments that occur during the ATP season. Table 9 below explains this clearly.

**Table 9: Draw Sizes in ATP**

<b>Type of Tournament</b>	<b>Total number of Tournaments</b>	<b>128</b>	<b>96</b>	<b>56</b>	<b>48</b>	<b>32</b>	<b>28</b>
<b>Grand Slams</b>	4	4	0	0	0	0	0
<b>Masters 1000</b>	9	0	2	6	1	0	0
<b>500's</b>	11	0	0	0	3	8	0
<b>250's</b>	39	0	0	1	1	5	32

**ATP Points:**

ATP points serve as one important motivating factors for a player's performance; for that matter, they are also a factor in motivating the player to participate in a particular tournament. The ATP points earned in a tournament are usually significant in deciding a player's year-end ranking. This motivating factor therefore needs to be controlled for in the analysis.

There are four different classes of tournaments, as has been stressed many times in the previous sections. These tournaments could give four different numbers of points, so there are four different classes of tournaments. The Grand Slam events give 2000 points to the winner while the Masters 1000, 500s, and 250s give the winner 1000, 500, and 250 points respectively.

**Prize Money:**

This is the parameter that corresponds to financial motives in the ATP World Tour. Again, it varies widely: the prestigious tournaments provide greater financial incentives than the lesser tournaments.

On the official website, the amount of prize money is given in more than one currency. Though most tournaments use US dollars, some award euros or pounds sterling, among other

currencies. With the help of a currency converter website (xe.com), all the currencies have been given in a single currency (US dollars). All the currencies have been converted to US dollars according to the exchange rates as of January 1<sup>st</sup>, 2014.

### **Surface:**

In a year-long ATP season, multiple surfaces are used; these usually correspond to the major Grand Slam tournaments. Hard court, clay, and grass are the traditional surfaces that correspond to the Australian Open and the US Open, the French Open, and Wimbledon respectively. The type of surface has a major impact on the players' performance because the surface they train on is usually a key factor in determining a player's final performance in that particular tournament. For this reason, controlling for the type of surface allows for a better analysis of performance.

There are three different types of surfaces as explained previously. Each of the three types of surface is indexed with a number. Hard court is assigned the number zero, clay courts are coded as one, and grass courts are given the number two.

### **Environment:**

Professional tennis players are expected to perform in two kinds of environments: indoors and outdoors. Although there are fewer indoor to outdoor tournaments, the environment is still an important factor in determining a player's performance.

The parameter environment is a binary variable. Outdoor tournaments are numbered zero while indoor tournaments are numbered one.

### **TRR (Tournament Relative Ranking):**

This parameter explains the competitiveness of the tournaments. This parameter in particular explains the relative competitiveness of a tournament among the similar class of tournaments. In other words, for each different type of tournament, namely Grand Slams, Masters, 500s, and 250s, a separate relative ranking numbering is given.

TRR measures the relative competitiveness of tournaments of the same type. The top eight players that enter a tournament are the first factor taken into consideration in calculating this parameter. The eight ranks of the players are then added and the weighted score obtained is noted. The lower the weighted score obtained, the tougher or more competitive the tournament.

In the case of a tie for the top eight weighted sums, the next eight ranked players are also taken into consideration for those tied tournaments; i.e., the top 16 weighted sums are considered in all those tied cases. This process is applied separately to all the types of the tournaments; separate numbering lists are prepared for Grand Slams, for Masters 1000s, for 500s, and for 250s.

### **OTRR (Overall Tournament Relative Ranking):**

This is also a similar parameter to the one explained above; they both explain the relative competitiveness of the tournaments. The only difference is that the above parameter gives separate numbering for each type of tournament, whereas in the OTRR parameter, only one numbering is given for the tournaments. In other words, all the tournaments that take place in a season, irrespective of the class or type of the tournament, are considered.

The OTRR measures the relative competitiveness of all the ATP tournaments that occur during a calendar year. The procedure followed for assigning the numerical order for the tournaments in this case is the same as that followed for the calculation of TRR. The top eight ranks are considered; then their weighted sums are taken and a number order is assigned wherein the least weighted sum receives the lowest number (i.e., 1). In the case of a tie, the weighted sum of the top 16 that enter the tournament is considered and the numerical order is given.

### **Population Density:**

The external environment can have an impact on a player's performance. For instance, performing before a large crowd on a Wimbledon Centre Court can be very different from playing in a Chennai 250 tournament. The external atmosphere encourages a player and motivate him to perform better; however, occasionally the pressure in such a situation can affect him negatively. The population density parameter is therefore relevant in this analysis.

Here the population of the city hosting the tournament is divided by the total square area of the city hosting the tournament. The total area is given in the unit of square meters. The unit used in the analysis is therefore population per square meter.

**Altitude:**

Altitude has a very important place in the realm of sports. Some players can use to it to their advantage, although it can be disadvantageous for some others. Controlling for this external parameter can improve the results obtained from the analysis.

The altitude parameter has been given in meters. All the data regarding altitude has been retrieved from altitude.nu, which provides the exact altitude at a given location.

**Player Rank:**

The ability of a player is significant in determining his performance in a tournament regardless of where it takes place. The player rank is one measure of ability that explains a player's superior or inferior performance. Relative ability needs to be controlled for in the analysis in order to observe the actual impacts of external factors on performance.

As is the norm with rank notation, the players are numbered starting from one. The ranking numbers in this analysis have gone upto 2000. The lower the number, the better the player is. In other words, the player ranked first has the greatest ability and players' abilities tend to decrease as the ranking number increases.

**8.4 Methodology**

In order to understand the exact correlation between the variables defined above, a regression needs to be performed. Since the model contains many independent variables (5 independent variables in the model), a multiple linear regression needs to be performed in this case. The regression equation of the model can be written as,

$$Y = C_0 + C_1X_1 + C_2X_2 + C_3X_3 + C_4X_4..... + C_{17}X_{17} + \varepsilon$$

where  $C_0, C_1, C_2.... C_{17}$  are coefficient terms while  $\varepsilon$  is an error term with a mean zero and variance  $\sigma^2$ .

$Y$  = Performance (Scale from 1 to 8)

$X_1$  = Week Number

$X_2$  = Weeks from Majors

$X_3$  = Draw Size

X<sub>4</sub> = ATP Points  
X<sub>5</sub> = Prize Money in USD  
X<sub>6</sub> = Surface (Categories - 0,1,2)  
X<sub>7</sub> = Environment (Binary Variable)  
X<sub>8</sub> = Tournament Relative Ranking (TRR)  
X<sub>9</sub> = Overall Tournament Relative Ranking (OTRR)  
X<sub>10</sub> = Population Density (Population per square meter)  
X<sub>11</sub> = Altitude in meters  
X<sub>12</sub> = Player Rank  
X<sub>13</sub> = Distance in Airmiles  
X<sub>14</sub> = Home Conditions Parameter (Binary Variable)  
X<sub>15</sub> = Continental Parameter (Binary Variable)  
X<sub>16</sub> = English Speaking Parameter (Binary Variable)  
X<sub>17</sub> = Language Parameter (Binary Variable)

In the analysis part, Model 1 dealt with regression for all the Control Variables alone (X1 to X12) while Model 2 to Model 6 were regressions of all the control variables plus the independent variables (X13 to X17) taken one at a time. Model 7 includes all of the Control and Independent Variables.

Now Player Rank is an important parameter which was expected to have a varied impact on performance. So in order to see if the player rank parameter had any impact on the actual (or initial) correlation between the performance and the independent variables, a new interaction term was included in the analysis. This new interaction term is formed by multiplying player rank to each of the independent variable and then Model 2 to Model 6 are repeated. These new models are numbered from Model 8 to Model 12.

## **8.5 Results**

Table 10 indicates that all the models are significant (p-value); hence every model can be used to address the hypothesis. All the coefficients of the independent and control variables are given in the table.

### **Control Variables:**

Each variable has its own unique correlation with the performance variable. As expected, player rank has a negative but very significant correlation with performance. This is no surprise because as rank number decreases, the player's ability increases, so he should be in a better position to deliver a good final performance. Week number has a negative but insignificant correlation with performance, which means that as the ATP season progresses, a player's performance tends to decline. On the other hand, the parameter of weeks from majors also has a negative and insignificant correlation with performance, which means that a player tends to peak when the Grand Slam Tournaments are approaching.

Draw size and prize money have a positive and insignificant correlation with performance; it follows that the bigger or more prestigious the tournament, the better the player's performance. However, there is a slight contradiction given the fact that ATP points have a negative (again insignificant) correlation with performance. Even competitiveness is similarly contradictory. TRR has a negative correlation with performance while the OTRR has a positive but significant correlation; this again establishes that the less competitive the tournament, the better the performance of the player. In terms of geographic features, the altitude and population density parameters have insignificant positive and negative correlations respectively. Higher altitudes are therefore expected to favor better performances, while highly populated places might attract comparatively below par performances on the whole.

### **Independent Variables:**

Distance has a positive and significant correlation with performance (Model 8), which suggests that the greater the distance of tournaments from the players' home countries, the better their performance. This somewhat contradicts **Hypothesis 1**. The correlation is slightly significant, but it can be concluded that professional players are very accustomed to traveling. The home conditions (Model 9) and continental parameters (Model 10) are very significant; they

are negatively related to performance, which again contradicts one of the hypotheses (**Hypothesis 2**). The English speaking parameter has a negative and insignificant correlation with performance, while the language parameter has a positive and significant correlation (Models 8,9, and 10). This is consistent with Hypothesis 3, which posits that the language parameter has positive impact on performance.

As explained in the methodology section, an interaction term has been introduced by multiplying player rank by each of the independent variables. In the presence of this interaction term, it is evident that the correlation between a specific independent variable and performance has become very significant. For instance, the correlation between the language parameter and performance is positive and significant in both cases. However, three other parameters experience a complete shift in their correlations. If the distance parameter moves from a positive correlation to a negative correlation with performance, it is the opposite with the home conditions and continental parameters. It is important to note that all of these correlations are highly significant. However, the English speaking parameter maintains a negative and insignificant correlation. It is very interesting to observe that after the addition of the interaction term, all of the hypotheses hold.

**Table 10: Results obtained for Performance**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
<b>p-value</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Adj-R<sup>2</sup></b>	0.0684** *	0.0684** *	0.0683** *	0.0684** *	0.0682** *	0.0689** *	0.0680** *	0.0796** *	0.0905** *	0.0786** *	0.0680** *	0.0801** *
<b>Week Number</b>	0.00002	-0.0004	3.12e <sup>-06</sup>	-0.00007	-0.00024	-0.00009	-0.00076	-0.00037	-0.00081	-0.00085	-0.00066	-0.00046
<b>Weeks from Majors</b>	0.00095	0.00017	0.00065	0.00068	-0.00035	-0.00007	-0.00221	-0.00188	-0.00133	-0.00296	-0.00208	-0.00106
<b>Draw</b>	-0.00004	0.00024	0.00002	0.00032	0.00116	-5.47e <sup>-06</sup>	0.00147	0.00282	0.00353	0.00268	0.00121	0.0031
<b>ATP Points</b>	-0.00021	-0.00019	-0.00022	-0.00024	-0.00029	-0.00025	-0.00032	-0.00033	-0.00033	-0.00033	-0.00031	-0.00029
<b>Prize Money</b>	7.01e <sup>-09</sup>	5.22e <sup>-09</sup>	7.67e <sup>-09</sup>	8.51e <sup>-09</sup>	9.08e <sup>-09</sup>	1.04e <sup>-08</sup>	1.14e <sup>-08</sup>	9.98e <sup>-09</sup>	1.15e <sup>-08</sup>	1.09e <sup>-08</sup>	1.16e <sup>-08</sup>	7.05e <sup>-09</sup>
<b>Surface</b>	-0.03102	-0.0533	-0.03283	-0.05485	-0.04146	-0.0375	-0.06471	-0.04098	-0.05201	-0.04752	-0.06215	-0.05662
<b>Environment</b>	-0.0033	-0.02941	-0.00927	-0.03171	-0.01905	-0.00718	-0.03737	0.02714	0.0133	0.02672	-0.03711	0.00626
<b>TRR</b>	-0.01481	-0.01609	-0.01456	-0.01451	-0.01331	-0.01374	-0.01311	-0.01245	-0.01626	-0.01408	-0.01259	-0.01585
<b>OTRR</b>	0.0185	0.01971*	0.01826	0.01844	0.01754	0.01766	0.0176	0.01894	0.02325*	0.01976	0.01727	0.02219*
<b>Population Density</b>	-4.34e <sup>-06</sup>	-3.95e <sup>-06</sup>	-3.29e <sup>-06</sup>	-3.26e <sup>-06</sup>	-6.99e <sup>-06</sup>	-2.81e <sup>-06</sup>	-6.20e <sup>-06</sup>	-4.94e <sup>-06</sup>	-0.00001	-4.04e <sup>-06</sup>	-6.31e <sup>-06</sup>	-9.23e <sup>-06</sup>
<b>Altitude</b>	0.00007	0.00007	0.00007	0.00006	0.00007	0.00006	0.00005	0.00007	0.00011	0.00007	0.00005	0.00008
<b>Player Rank</b>	- 0.00392* **	- 0.00396* **	- 0.00399* **	- 0.00396* **	- 0.00392* **	- 0.00402* **	- 0.00402* **	- 0.00307* **	- 0.0076** *	- 0.00756* **	- 0.00378* **	- 0.00697* **
<b>Distance</b>		-0.00001					-0.00001	0.00005*	-0.00001	-0.00001	-0.00001	-0.00001
<b>Home Conditions</b>			0.09177				-0.09874	-0.2034	- 0.71988* **	-0.19258	-0.09525	-0.20715
<b>Continental</b>				0.07432			-0.01438	-0.01162	-0.02376	- 0.34481* *	-0.01389	-0.02442
<b>English Speaking</b>					-0.07135		-0.08004	-0.09229	-0.1182	-0.08828	-0.02061	-0.10974
<b>Language Parameter</b>						0.13106	0.181	0.22043*	0.23597* *	0.21061*	0.18232	-0.1248
<b>Distance*Rank</b>								-7.73e <sup>-07***</sup>				
<b>Home Conditions*Rank</b>									0.00547* **			
<b>Continental*Rank</b>										0.00443* **		
<b>English Speaking*Rank</b>											-0.00067	
<b>Language Parameter*Rank</b>												0.00418* **

NOTE: \* p ≤ 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## **8.6 Robustness Checks**

In this section, an additional test is performed to check for the robustness of the findings obtained so far. In this specific analysis, the initial dependent variable of performance was replaced with the points earned variable. This is because both performance and points earned are increasing parameters; i.e., for both parameters, the higher the number, the better the parameter. The results obtained in the first analysis should therefore hold for the second analysis as well. Table 11 shows the results of that analysis.

It is clear that for most of the independent variables, the results are almost identical in terms of significance. For the variables with interaction terms, it is evident that the significance as well as the coefficients have improved in the second analysis as compared to the first analysis (performance as dependent variable).

**Table 11: Results obtained for Points Earned**

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Adj-R <sup>2</sup>	0.0479** *	0.0481** *	0.0476** *	0.0483** *	0.0476** *	0.0479** *	0.0472** *	0.0568** *	0.0626** *	0.0548** *	0.0488** *	0.0576** *
Week Number	0.1432	0.10861	0.14257	0.13289	0.14235	0.13835	0.12193	0.14741	0.11878	0.11588	0.13728	0.14174
Weeks from Majors	0.28256	0.21812	0.27129	0.25242	0.27838	0.23729	0.22669	0.24875	0.27953	0.18107	0.24831	0.30412
Draw	- 0.59843* *	- 0.57506* *	- 0.59609* *	- 0.55746* *	- 0.59455* *	- 0.59683* *	- 0.57887* *	-0.48985	-0.45563	-0.50441	- 0.6198**	-0.46954
ATP Points	0.05845*	0.05995*	0.05805*	0.05492*	0.05818*	0.05663*	0.05581*	0.05482*	0.05491*	0.05491*	0.0574*	0.05811*
Prize Money	-4.93e <sup>-07</sup>	-6.41e <sup>-07</sup>	-4.68e <sup>-07</sup>	-3.23e <sup>-07</sup>	-4.86e <sup>-07</sup>	-3.43e <sup>-07</sup>	-2.93e <sup>-07</sup>	-3.85e <sup>-07</sup>	-2.87e <sup>-07</sup>	-3.23e <sup>-07</sup>	-2.59e <sup>-07</sup>	-5.84e <sup>-07</sup>
Surface	-1.00271	-2.85512	-1.07177	-3.69014	-1.03646	-1.29233	-4.1393	-2.57506	-3.37827	-3.08327	-3.72673	-3.59579
Environment	-2.27341	-4.44431	-2.50052	-5.47814	-2.32431	-2.44678	-5.31604	-1.06344	-2.28002	-1.3783	-5.27399	-2.38501
TRR	1.02809	0.92131	1.03774	1.06242	1.03295	1.07578	1.03327	1.07703	0.84453	0.97393	1.11653	0.84883
O	-0.86897	-0.76817	-0.87816	-0.87535	-0.87206	-0.90642	-0.84783	-0.75945	-0.50931	-0.71518	-0.9009	-0.53998
Population Density	0.00017	0.00021	0.00021	0.0003	0.00017	0.00024	0.00033	0.00041	0.00002	0.00046	0.00031	0.00013
Altitude	0.00017	-8.68e <sup>-06</sup>	0.00005	-0.00095	0.00015	-0.00038	-0.00121	-0.00035	0.00198	-0.00037	-0.00196	0.00051
Player Rank	- 0.17265* **	- 0.17656* **	- 0.17547* **	- 0.17762* **	- 0.17266* **	- 0.17738* **	- 0.17717* **	- 0.11439* **	- 0.39157* **	- 0.39479* **	- 0.13895* **	- 0.37500* **
Distance		-0.00109					-0.00037	0.00362*	-0.0004	-0.00031	-0.00039	-0.00043
Home Conditions			3.49555				-9.5092	- 16.40838	- 46.72822 ***	- 15.27433	-8.94614	16.79205
Continental				8.38333			7.79735	7.97911	7.23555	12.50351	7.87673	7.12309
English Speaking					-0.2306		1.32135	0.5137	-0.96529	0.81528	10.89923	-0.67392
Language Parameter						5.85585	7.82606	10.42524	11.11994	9.64548	8.03817	12.71814
Distance*Rank								- 0.00005* **				
Home Conditions*Rank									0.32748* **			
Continental*Rank										0.2723** *		
English Speaking*Rank											- 0.10806* *	
Language Parameter*Rank												0.28108* **

NOTE: \* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

## **9. Discussion**

The major finding of this study is that ILOF is relevant in the ATP world tour and the players get impacted by it depending on their rank and also on several external factors like distance, home conditions and language related parameters. For instance, the distance parameter initially is positively correlated with performance. This suggests that as the distance increases, the players performance tends to get better. This is particularly intriguing considering that as the distance increases from the home country, the players are supposed to counter different environments which consequently affects their performance. This is in contradiction to our first hypothesis and gives way to some possible implications. Firstly, the analysis contains performance results of all the players and the final results could have been influenced by the results of the top ranked players who give better performances irrespective of the distance of the tournament from the host country.

Secondly, as the distance increases, the players might actually experience conditions which are actually similar to their home country environment. For instance, for the French players, playing in Quebec (Canada) can be more easier than playing in Italy (which is just beside France). This is because the two places mentioned share the same language which makes it easier for the players to adjust to the local external environment. Or it could be that the playing conditions are more helpful to them at these distant host countries. For example, Spanish players are very much used to clay courts (Lewit, 2014) and traditionally deliver better performances on the red clay. So it can be said that the Spanish players tend to deliver better performances on clay courts irrespective of the distance of the tournament from the host country because of the helpful playing conditions. However, after the inclusion of the interaction term rank, the new relation agrees with our initial hypothesis that distance actually plays a negative role in performance.

The presence of home conditions initially has a negative correlation with performance. The continental parameter also follows the same suite and both these in combination contradict our initial hypothesis that the presence of home conditions actually aid the player. This suggests that that home conditions do not guarantee a better performance for the home country player. However, in this study the presence of top ranked players again could actually influence the final results. But an alternative suggestion can also be made that the presence of home conditions can sometimes increase the pressure component on a player which hampers his performance. The

analysis with the interaction term however reverses the initial relation and ties us back to the initial hypothesis which states that the presence of home conditions is positively correlated with performance. This possibly suggests that players with lower rank find home conditions very helpful and comparatively give a better performance when at home. It can be noted here that the home conditions parameter and the level of the competitors play different and significant roles in determining a player's performance. It can therefore be concluded from the analysis that for players with limited capabilities, the pressure of performing outside their home country is more significant than that experienced by players with greater abilities. And hence it might be recommended for the lower ranked players to play as many home tournaments as possible to improve their ranking on the ATP world tour.

Surprisingly, playing on the same continent was also relevant. To expect home conditions to have some impact on performance is a little plausible, but the fact that the continental parameter also acts in the same way as the home conditions parameter stresses the importance of helpful conditions even further. Even the language spoken had an impact on the players' performance. This has to do with the fact that becoming comfortable with the medium of instruction of the host country makes them feel more at home, which strengthens them psychologically and in turn helps them to deliver a better performance.

The performance versus competition dependence is also evident in the analysis. Higher level competition deters better performance because of the difference in the abilities of the player and his rival. When the competitive level of a tournament increases, a player tends to encounter better ranked players in the earlier rounds, which can diminish his chances of progressing further in a tournament. A similar case can be observed with firms, which tend to exit a host country when they are unable to cope with the intense competition (Mata and Freitas, 2012).

The relation between rank and performance is an inverse correlation. This suggests that as the player rank number goes up, the performance tends to go downwards. This follows that in general, players with limited capabilities tend to give comparatively sub-par performances. This finding seems to agree with the finding of Mezias (2007) that foreign workers working in the United States experience LOF due to the adjustment difficulties created and this effect is more severe on lower level employees. Also from the analysis, the language parameter is positively correlated with performance which means that the cultural components have a positive impact on

performance. This important finding also agrees with the case of immigrant workers whose performance is widely affected by the failure to understand the cultural and institutional environments; the effects of which can be attributed to ILOF. Fang et al (2013) and Mezias (2007), in their study of the Canadian and the United States job markets respectively, find that the foreign workers working in the home country job environment earn less when compared to their counterparts from the host country. This ILOF effect is also observed in the case of the ATP players who find it tough to give better performances in the tournaments that take place in different host countries. Fang et al (2013) further suggests, in his analysis on the Canadian job market, that external factors have an impact on the amount of ILOF experienced by the immigrants. He specifically focuses on the mode of search (external factors) in his analysis.

We had already seen previously that for the lower ranked players moving away from home country might be detrimental to their performance and these players need to plan their schedule keeping in mind the distance related effects which gives way to ILOF. It might be important to note here that, playing in those tournaments away from home country, can also be financially demanding for a lower ranked player considering that he is limited financially to fund his foreign tours. This financial liability can limit the player from delivering his best performance. This leads us to the findings of Matsuo (2000) who shows that to overcome distance related effects (both spatial and cultural), the Japanese firms in the United States depend on expatriates to specifically transfer their home managerial practices and also to monitor firm specific assets. Also the scheduling is very important from a player's perspective. For a lower ranked player, all the factors that affect his performance should be addressed while putting forward a annual schedule. Likewise the integration of the in-patriate managers into the host country environment is very important for the firms in developing a global mindset and strategy (Harvey et al, 2005).

The case of entrepreneurs is another area where the findings from this study can be important to relate to. Joardar & Wu (2011), through their multiple case studies, demonstrate that foreign entrepreneurs with high entrepreneurial orientation always find numerous ways to overcome ILOF and deliver better performances. They additionally find that the level of individual entrepreneurial orientation will have more pronounced effect on performance than ILOF. In a similar way, the players with high capabilities (i.e. the top ranked players) neutralize the effects posed by ILOF and find ways to deliver better performances. The internal drive to achieve better

results, which is reflected in their rankings, helps them overcome the negative effects caused by ILOF.

## **10. Limitations and Scope for Further Research:**

The geographic distance parameter has been prepared at a country level. This is because it seemed that the LOF parameter is very significant at the country level. If this parameter had been prepared at the city level, the study would have been more complex because of the large number of observations in the dataset (2648). Further studies in this area could perform this analysis at a city level to see if the LOF is also significant at the level mentioned.

Also, further studies could attempt to determine whether the results obtained here also hold true for the WTA (Women's Tennis Association). WTA is the organizational parallel for the ATP for women. Such a study could determine whether some of these effects could also be generalized to professional women's tennis players and hence to tennis players on a whole.

The presence of home conditions and its impact on performance has been studied in this analysis. But an in depth analysis taking into consideration only the rank of the player and the home conditions could have been interesting which was beyond the scope of this present study. For instance, the players can be segregated into different ranges on the basis of their ranks (ranks 1-20, ranks 21-50 so on and so forth) and home conditions parameter can be tested on each rank range to see the importance of the presence of home conditions and its consequent impact on performance. Future studies can look into this particular section of the analysis.

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