

Hotel Wars: A Study on the Competition Effects of the Hotel Tourism Industry

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Abstract: This paper investigates whether higher multinational hotel concentrations negatively impact the sales of independent, domestic hotels within a country. I use Ordinary Least Squares with country/year fixed effects as my identification strategy. Overall, this study finds that foreign hotel concentration causes a decrease in domestic hotel sales, both when defining a particular hotel market as a whole country and after restricting the hotel market to the country's capital city. Furthermore, I do not find significant evidence that a primary driver of these results is due to domestic hotels' lack of easy access to communication-related technologies.

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I Introduction

Tourism is a significant component of many countries' economies: it creates employment opportunities, increases revenues, and supports local infrastructure. Hotels are one of the main beneficiaries of a thriving tourism industry: the more popular a country's tourism offerings, the more prosperous the multinational and local hotel industry. However, as international tourism has risen in the last few decades, intergovernmental organizations and international development scholars have raised concerns about the sustainability of countries' local hotel industries due to two reasons. The first concern pertains to multinational hotels employing anti-competitive practices, such as the use of exclusive distribution systems, to gain unfair advantages over competing local, domestic hotels. The second relates to multinational hotels outcompeting local hotels due to domestic hotels' lack of easy access to online communication technologies which hinders effective targeting of potential foreign tourists.

This paper studies the impact of foreign hotel concentration on domestic hotel sales using Ordinary Least Squares (OLS) with fixed effects as the main identification strategy. Overall, I find that concentrated multinational hotel markets do harm the domestic hotel industry on both the country and capital city level. However, I do not find significant evidence that these results are primarily driven by domestic hotel's lack of easy access to email, the Internet, and other telecommunication technologies.

The rest of the paper is organized as follows. Section II provides an overview of this paper's contributions to three strands of related literature. Section III describes the data, while Section IV explains the methodology and presents the baseline results. Section V further analyzes whether access to communication technologies is a primary driver of multinational

hotels' negative impact on domestic hotel sales. Section VI includes a robustness check that restricts the boundaries of the hotel market from a country to the country's capital city. Lastly, Sections VII and VIII discuss this paper's limitations, policy implications, and suggestions for further studies.

II Literature Review and Related Theory

In 2001, the World Trade Organization found that there is an asymmetric distribution of benefits favoring multinational over domestic hotels, especially when there is a high concentration of large multinational hotels located in a tourist area (Benavides 2001). There are a few channels through which high multinational hotel concentration could affect the revenues of domestic, independent hotels in tourism destinations.

First, multinational hotels could fairly outcompete domestic hotels by offering superior quality and experiences like renovated amenities, larger spaces, and better guest services. Thus, tourists tend to choose these foreign hotels over other hotels, causing domestic hotel sales to suffer. On the other hand, higher multinational hotel concentrations may boost domestic hotel revenues through the "balloon effect". This framework suggests when large multinational hotels raise their prices, it leaves room for smaller, local hotels to also increase their prices without losing market share. While the balloon effect is not an official, well-established economic theory, it is still useful to consider this framework as a possibility.

The third channel is that high multinational hotel concentration negatively impacts domestic hotel revenues, primarily due to anti-competitive tactics practiced by foreign hotels. One way this occurs is when a group of multinational hotels agrees to exclusive deals with each other that weaken local, domestic hotels' abilities to compete (Federal Trade Commission).

My study contributes to three strands of literature. The first relates to sustainable tourism studies within the international development field, which findings align with the third channel mentioned above. The United Nations Conference of Trade and Development published a paper admitting that while the competitive landscape of hotel industries is complex, multinational firms engage in anti-competitive behaviors undermining independent hotels' business (Evans 1999).

Many of these papers agree that the most harmful practices consist of implementing an exclusive distribution system that features mostly international chain hotels, allowing them direct access to booking agents and more efficient targeting of potential foreign tourists when compared to domestic hotels (Benavides 2001). Meanwhile, these local hotels lack easy access to online communication technologies, leaving them with few channels to effectively reach tourists who often have little information about foreign destinations to begin with (Evans 1999). A specific analysis of the Chinese hotel industry finds that international hotels enjoy global network support *and* increasing foreign direct investments from US and Singapore that make growth challenging for domestic hotels (Gu et al., 2012). Furthermore, national competition agencies are unlikely to have the power or resources to stop these acts of collusion because of the large political influence exerted by multinational hotel chains (Rodriguez 2011).

The second strand of related literature addresses corporate management studies pertaining to foreign versus domestic firm survival strategies. A paper by Mata and Portugal (2002) published in the Strategic Management Journal compares the success of foreign and domestic firms in Portugal, using a comprehensive dataset that includes both small and large firms in various industries from 1982-1992. Ultimately, they find no significant effect of concentration on

the failure probability of foreign versus domestic firms and no significant differences in the survival rates between the two types of firms overall.

The third strand of empirical research relating to my question focuses on hotel industries within the Industrial Organization field. Davies (1999) analyzes panel data of 36 UK firms over a five-year period to conclude that higher market concentration reduces hotel profitability. However, his analysis is likely biased due to omitting important variables such as location and ratings that affect market concentration and hotel profitability. Other papers take into account the impact of hotel locations, economies of scale, and business agglomeration while arriving at varying conclusions about the relationship between hotel concentration and profitability (Lado-Sestayo et al. 2016, Marco-Lajara et al. 2014, Pan 2004).

This paper contributes to these three literature strands in different ways. The international development studies provide comprehensive theory motivating this paper, but they lack empirical evidence supporting their claims. Other papers within this field that draw links between the concentration of international hotel chains and domestic hotels' revenues present original, aggregated data but do not intend to draw any conclusions of causality (Dunning & McQueen 1982). Providing an econometrics approach to this question is one of the major ways I will contribute to the literature.

Meanwhile, my paper extends the analysis of strategy management studies by exploring whether their conclusions (that market concentration does not affect firms' survival) generalize beyond one country and apply to the hotel tourism industry. I also use more recent data that account for customers and hotels' increased ease of access to the Internet and technology that may help local hotels more easily reach potential foreign customers.

Lastly, many industrial organization studies focus on specific geographical locations like Spain, Taiwan or the Spanish coasts. They also analyze how variables like hotel size and quality affect all hotels' profitabilities. Therefore, my paper expands their analysis covering multiple countries and differentiates these variables' effects on multinational hotel concentration and domestic hotel revenues.

III Data

The primary data source I use is the World Enterprise Surveys from the World Bank. My data range from 2007-2022 and covers 2,092 hotels in 128 countries. Each observation unit is a country-year pair, and there are 228 observations in my dataset. I categorize multinational hotels based on Mata and Portugal's (2002) 10% foreign ownership threshold: this is the threshold that allows a foreign owner to designate a member to the hotel's board of directors.

Furthermore, this dataset comprehensively represents the underlying global tourism industry and the diverse range of worldwide tourist experiences. For example, it includes countries whose tourist offerings include less modern and more original experiences of ancient religious sites, like the relatively untouched Monastery of Geghard in Armenia, built in the fourth century. However, the data also includes countries that showcase its rich history through a more contemporary tourist experience, like the Neuschwanstein Castle in Germany, originally built in the 17th century but undergoing a six-year, labor-intensive restoration effort (Bavarian Palace Administration).

This study's dependent variable is domestic hotel sales. [Figure 1](#) shows that the means of log domestic hotel sales range from approximately 14 to 18, which translates to \$1.2 to \$65.6 million in sales. The independent variable is the Herfindahl Index, which is also heavily used in

Industrial Organization research fields. It is calculated by summing the squared market shares of multinational hotels within a given country-year observation. A low Herfindahl Index generally indicates a more competitive market and weaker multinational hotel market power. In contrast, a higher Herfindahl Index indicates a less competitive market and more dominance of multinational hotels in a particular country.¹

For example, the data contains 19 firms in Croatia in 2019. Eight multinational firms captured 38% of the market share that year. The resulting Herfindahl Index is a lower number, 0.042, indicating a hotel market less concentrated with multinational firms. On the other hand, six hotels in Cyprus are included in the analysis in 2019. Two of these hotels are multinational hotels that captured 71% of the market share. This results in a higher Herfindahl Index of 0.45, implying a market more dominated by foreign firms. [Figure 2](#) shows a map of the Herfindahl Indexes by country in 2019. Most countries with data have Herfindahl Indexes between 0.04 and 0.06. Some extreme cases include Cyprus, Zambia, with an extremely low Herfindahl Index of 0.0005.

Lastly, I include controls relating to hotel size, quality, informal market competition effects, business licensing obstacles, crime/theft obstacles, and GDP. Many of these variables are drawn from literature within the Industrial Organization field and deemed significant in affecting hotels' profitability and market concentration.²

¹ The Herfindahl Index does not directly indicate the level of any firm's anti-competitive practices. However, it is a suitable proxy for the degree of anti-competitive practices employed within a hotel market as this paper assumes, per past literature's findings, that most multinational hotels use exclusive booking systems that suppress competition from local hotels.

² [Table 1](#) shows the summary statistics for the multinational Herfindahl Index, log domestic sales, and controls

IV Methodology and Baseline Results

A Methodology

The null hypothesis is there is no impact of higher multinational hotel concentration on domestic hotel sales. My main empirical specification is

$$(1) \quad \ln(DS_{ict}) = \beta_0 + \beta_1 HHI_{ct} + \delta_i + \gamma_t + X_{ict} + \varepsilon_{it},$$

where i indexes hotels, t indexes years, and c indexes a particular country. HHI_{ct} is the Herfindahl Index of multinational firms in one country c in year t . X_{ict} is the set of hotel and country level control variables. Since my analysis compares firms within different countries across years, there are time and country-specific invariant factors that can be correlated with the unobserved error term. Therefore, I use a fixed effects model for my baseline specification. I do not use country-year pair fixed effects because this would control for all variation between country-year pairs, which I would need to exploit to analyze the question at interest. Instead, I use separate country (δ_i) and year (γ_t) effects.

Country-fixed effects account for the tourist destinations that differ between countries but do not change over time. I assume that many countries' offerings and sightseeing destinations popular amongst tourists do not dramatically change in appearance or location between this study's years of interest. For example, the sample includes Egypt in 2013 and 2016, where their main tourist destinations include the Pyramids of Giza and the Valley of Kings. It is reasonable to assume that these attractions mainly stayed the same over three years, and it is unlikely that tourists' experiences at both these attractions in 2013 were much different than in 2016.

More nuanced scenarios include seasonal tourist destinations like spring climbing seasons at Mount Everest in Nepal (Highland Expeditions). Climbing seasons in Nepal contribute to a large part of their tourist industry, and the number of climbers expected in any given month can affect the offering of accompanying services, like better sherpas or renovated tea houses. However, I assume the degree and timing of these monthly fluctuations are relatively constant from year to year, and therefore, country-fixed effects control for these variations.

I use year-fixed effects to account for two significant events that affected the global economy within my data range. The first is the Great Recession which began in 2007. Most countries' tourism and hotel industries were negatively affected as potential tourists lost savings they would typically use for international travel. Therefore, most hotels suffered from significant declines in business (HSMAI 2020). The second event is the COVID-19 pandemic: the global shutdown of hotels and tourism negatively impacted domestic hotel sales in most countries and is therefore captured by year-fixed effects. Both these events may have affected domestic hotels more than established multinational hotels because of unobserved factors, and the relative differences in impact between foreign and domestic hotels may have varied across countries. However, year-fixed effects capture a significant portion of this variation.

Year-fixed effects also capture technological changes that affected most countries similarly. For example, 2007-2022 is defined by the growing popularity of smartphones, higher-speed internet, and online streaming platforms, all of which have transformed the global hotel industry. However, while the impact of these technologies is relatively similar across countries, the adoption of these technologies may differ between multinational and domestic

hotels within each country in a particular year. I undergo further analysis of this circumstance in Section V of this paper.

B Baseline Results

Column 1 of [Table 2](#) shows the OLS result between the independent and dependent variables without fixed effects. The estimated coefficient is statistically insignificant (standard error = 0.361), so the null hypothesis (that hotel concentration has no impact on domestic hotels' sales) cannot be rejected. [Figure 3](#), which graphs the relationship between these two variables, also confirms little correlation at first glance.

I then add country and year fixed effects, which I now define as my baseline regression. I also cluster standard errors at the country level which accounts for heteroscedasticity between countries but allow for hotel observations within each country to be correlated. The results are shown in Column 2 of [Table 2](#). The estimated coefficient for domestic sales is now negative (-1.582). Even though the standard deviation increases to 0.565 since I clustered my standard errors, the results are still statistically significant at the 1% level. For every 0.01 unit increase in the Herfindahl Index, domestic hotels' sales decreased by approximately 0.0158 in log sales or 1.5% in sales. The magnitude of the effect is moderate since the mean log domestic sales are 25.66 and its standard deviation is 2.22, which implies that the effect of this increase is around 0.68 standard deviation of domestic hotel sales.

The baseline result remains robust even when adding all other controls. Column 9 of [Table 2](#) shows the complete regression results which includes most controls and results in a coefficient (-1.734) similar to the fixed effects baseline regression. GDP is excluded because I only obtained GDP data from 2007-2021. Since more than a third of my data is from 2022, the

resulting coefficient that accounts for GDP may be unreliable. Ultimately, these results reject the null hypothesis and provide evidence that higher multinational hotel concentrations do cause decreases in sales of competing domestic hotels. They also suggest that the baseline fixed effects regression accounts for the significant sources of potential biases in this OLS regression.

V Further Analysis: Online Communication Access

Past literature has indicated that one of domestic hotels' main disadvantages is their lack of access to communication-related technologies. My baseline regression does not control for these factors, allowing their variation to affect the results between highly and sparsely concentrated hotel markets. To test the magnitude of these factors' effects on the baseline fixed effect result, I run an alternate regression that controls for three variables relating to online communication usage. If the coefficient after controlling for these three variables is similar to the baseline regression's coefficient, these technology-related variables have little effect on the baseline results. Therefore, it would pose conflicting evidence with past literature's claims regarding use of communication-related technologies. However, if the alternate regression produces a less negative result, it would align with past literature's claims that domestic hotels are outcompeted by multinational hotels especially in concentrated multinational hotel markets, partially due to difficulties accessing online communication channels. The alternate regression is

(2)

$$\ln(DS_{ict}) = \beta_0 + \beta_1 HHI_{ct} + \beta_2 Email_{it} + \beta_3 Website_{it} + \beta_4 TechBarrier_{it} + \alpha_{it} + \varepsilon_{it},$$

where $Email_{it}$ indicates whether a hotel currently communicate with customers or suppliers by email, $Website_{it}$ indicates whether they have their own website, and

$TechBarrier_{it}$ measures the degree of difficulty domestic hotels face when trying to access online communication technologies. These are all measured in year t (year / country fixed effects are combined into α_{it}).³

Column 2 of [Table 4](#) shows that controlling for these three variables results in a coefficient of -2.741. While the alternate coefficient is less negative than the baseline results and thus aligns with what the past literature suggests, the alternate regression's coefficient (standard error = 0.745) is not significantly different from the baseline results. This coefficient suggests that domestic hotels' lack of access to communication-related technologies do not meaningfully drive this study's baseline results.

However, these three technology-related variables also contain many missing values: over half of the observations were dropped to run this regression, including observations from 2017-2021. To determine whether there are differences between the sample after dropping missing data compared to the full set of data, I compare the baseline fixed effect regression coefficient with the missing data shown in [Table 4](#)'s Column 1 (sample size = 932) to the coefficient without the missing data shown in [Table 4](#)'s Column 3 (sample size = 2,092). These results confirm a significant difference in the composition of the subsample compared to the larger, full sample, and this variation could potentially drive these results rather than the technology-related controls. Therefore, while domestic hotels' lack of access to online communication channels may not be a significant cause of the baseline results, this analysis cannot confidently support this hypothesis.

³ [Table 3](#) shows the summary statistics of these technology-related control variables

VI Robustness Check: Restricting Hotel Markets to Capital Cities

Since the Herfindahl Index variable measures multinational hotel concentrations within a particular hotel market, the boundaries of the hotel market must be carefully defined. So far, I have defined one hotel market as a whole country for my analyses because I would sacrifice a large portion of my sample size by restricting the sample to a smaller region. However, using this market definition can be misleading because the boundaries may be too large. The issue arises when a country with a majority of its multinational hotel concentration in one region could have the same market share, and therefore the same Herfindahl Index, as another country where its multinational hotels are spread across the country. Multinational hotels' impact on domestic hotel sales, when mainly concentrated in one region, may differ if they are instead spread out across the country.

However, I still attempt to account for this issue and focus on observations only in the country's capital cities. I chose capital cities because they are often tourist destinations or where most tourists visit or stay when visiting the country. Therefore, it is likely that the multinational hotel concentration in capital cities is the most different from the rest of the country. The most direct way I can measure the difference between the two Herfindahl measures is by running the fixed effects regression on observations only in the country's capital cities and comparing the coefficient with the baseline fixed effect results. I call this Option 1.

However, only 419 out of 2,092 hotels are located in capital cities in my dataset, which renders the output almost certainly biased based on the small number of observations. To avoid this situation, I instead group hotels in capital cities separately from those not in capital cities within each country year-pair. Then, I compare how the Herfindahl Indexes on domestic hotel

sales differ within these two groups. Admittedly, this method is only as robust as the assumption that the survey is representative of the underlying population of firms in the whole country *and* capital cities in each country-year pair. However, this is a superior method to Option 1 because even though there are still only 419 total hotels in all capital cities in my sample, the power of my sample increases by including hotels not in the capital city in the analysis.⁴

The specification is

$$(3) \quad \ln(DS_{ict}) = \beta_0 + \beta_1 CC_{it} * HHI_{ct} + \alpha_{it} + \varepsilon_{it}$$

where the interaction between CC_{it} (whether the hotel is in a capital city) and Herfindahl Index is the coefficient of interest. [Figure 4](#) shows that the multinational hotel concentration in each country's capital city is higher than the concentration outside of the capital city by around 0.09 within each year. However, the difference is not statistically different as their means overlap each other's standard deviations. Furthermore, [Table 5's](#) result implies that while multinational hotels cause more of a decrease in domestic hotel sales than in non-capital cities, the result is statistically insignificant. Overall, the hypothesis that multinational hotel concentration has no impact on domestic hotel sales can be rejected whether measured on the country or capital city level.

VII Limitations

The first limitation pertains to the study's methodology. While the country and year fixed effects account for much of the variation over time and across countries, it does not account for effects that occurred in only a few countries in a particular year. The fact that richer countries are

⁴ I compare the power of Option 1 in [Table 6](#) with Equation 2's power in [Table 7](#). As expected, the power of Option One is extremely low at 0.17. The power of Equation 2 is much greater (0.56). Power analysis of Equation 1 in [Table 8](#) for reference.

more likely to adapt quickly to sudden economic shocks may be driving a portion of the study's regression results and, therefore, a source of bias in this study.

Furthermore, I deleted many observations with missing data and dropped some countries from my sample because only one observation was recorded for that country in a year. For example, Sweden in 2015 only had one hotel observation: a Herfindahl Index on only one hotel observation is nearly meaningless. This issue introduces the potential for sampling bias. I am uncertain in which direction this sampling bias may occur, but the fact that there may exist a correlation between the World Enterprise Survey only obtaining one sample from a particular country and their composition of multinational and domestic firms may be a limitation to this study.

Relatedly, there were some country-year pairs with only a few hotel observations. For example, Estonia only had four hotel observations in 2019. I did not drop these observations to avoid sacrificing my regression's power. I instead analyzed this data set based on the assumption that any country-year pair with over 1 sample represents the underlying hotel market well. However, the lower the number of hotels in each country-year pair, the less likely that assumption holds, which is a further limitation of this analysis.

VIII Conclusion and Policy Implications

This paper supports claims that higher multinational hotel concentration negatively impacts domestic hotel sales on both the country and capital city level. While this study cannot confidently support claims that domestic hotels' lack of access to online communication channels partially drives these results, these technologies still cannot be ruled out as an essential medium through which multinational hotels outcompete domestic hotels.

Further studies should analyze whether these multinational hotels are pull factors for the country's tourism industry. In other words, it is possible that these hotels help attract foreign tourists who would not have visited the country if these multinational hotels were not there. If so, the extra revenues they generate due to their pull factor may at least partially compensate for their negative impacts on the domestic hotel industry and help boost the country's overall growth. Especially for developing countries' economies that rely heavily on tourism, there are significant economic and societal consequences if these countries do not benefit enough from the tourism revenues they generate. Thus, this study also confirms the need for governments to consider their country's hotel market structures and its composition of domestic and multinational hotels when planning investments in their hotel industries.

Lastly, this paper emphasizes the importance of implementing fair antitrust competition laws within the hotel industry, even as corruption, lobbying, and lack of resources in developing countries can make enforcing these laws difficult. Further studies should examine the best channels to implement pro-competition policies and regulatory processes to improve and maintain sustainable growth of countries' hotel markets within the tourism industry.

IX Figures and Tables

Figure 1: Mean of Log Domestic Hotel Sales from 2007-2022

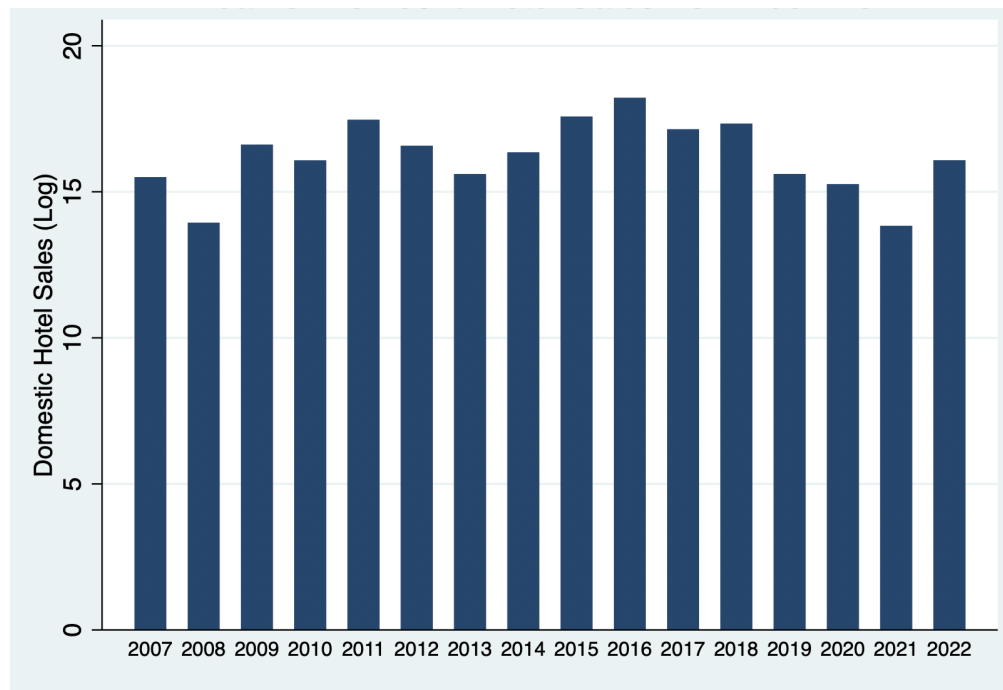


Figure 2: Global Map of Herfindahl Indexes of Multinational Hotels in 2019

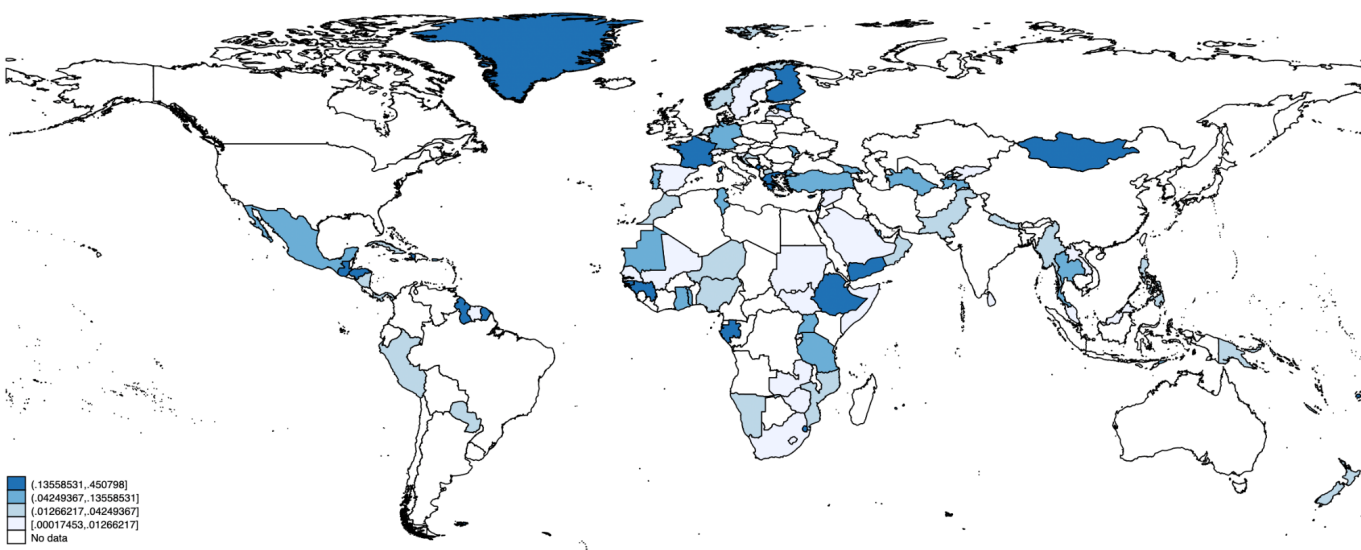


Figure 3: Correlation between Multinational Hotel Concentration and Log Domestic Sales

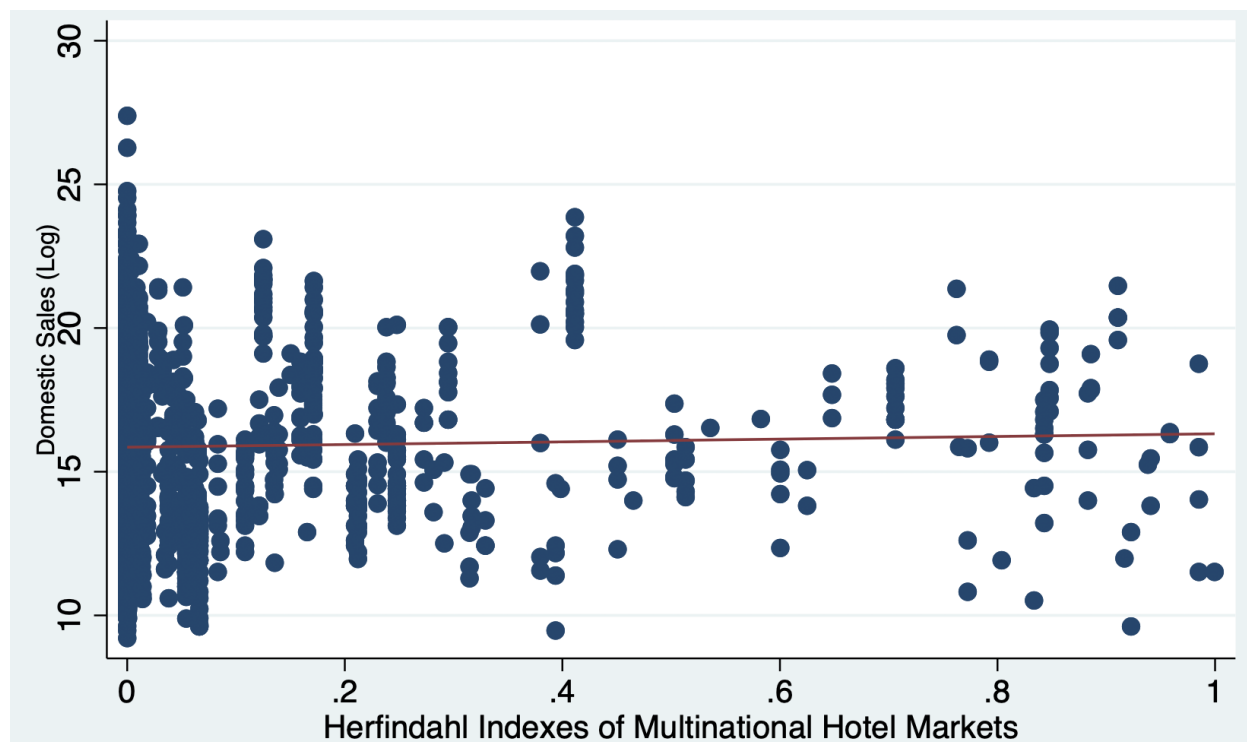


Figure 4: Difference in Means of Hotel Concentrations for Multinational Hotels Within and Outside Capital Cities in Each Country-Year Pair (Mean Calculated Across All Country-Year Pairs)

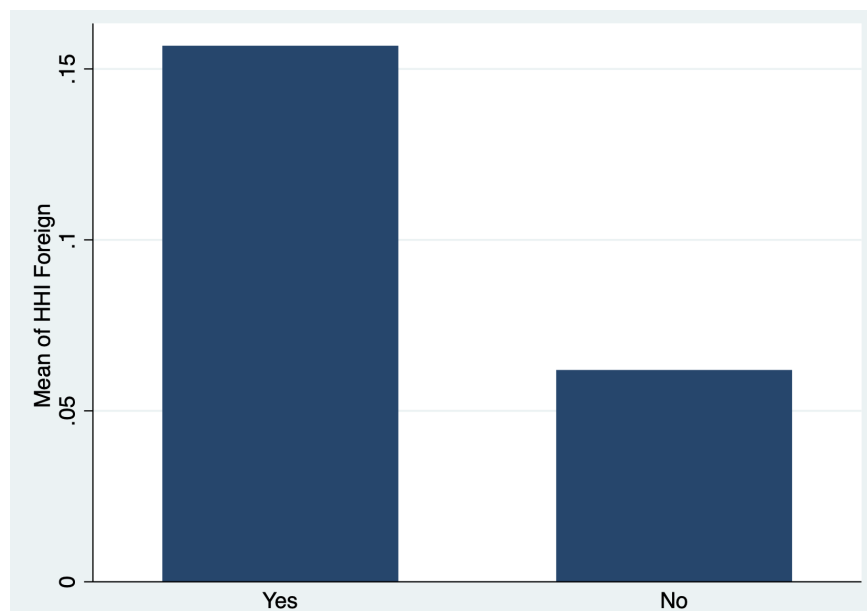


Table 1: Summary Statistics of the Herfindahl Index, Log Domestic Sales, and Controls

Variable	Obs	Mean	Std. dev.	Min	Max
HHI_foreign	2,387	0.0798013	0.183889	0	0.9995558
Log Domestic Sales	2,092	15.88442	2.757226	9.21034	27.38767
Has Quality Certification	2,274	1.199208	0.399493	1	2
Hotel Size	2,387	1.770004	0.738344	1	3
Licensing Obstacles	2,327	0.9157714	1.137852	0	4
Crime/Theft Obstacle	2,329	.9287248	1.198182	0	4
Log GDP	1,748	25.55006	2.206451	20.3171	29.82003

Table 2: Baseline OLS and Fixed Effect Specification Results for Log Domestic Sales

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	OLS		Fixed Effects							
HHI Foreign	0.468 (0.361)	-1.582*** (0.565)	-1.003* (0.530)	-2.106*** (0.408)	-1.610*** (0.565)	-2.158*** (0.434)	-2.166*** (0.420)	-2.493*** (0.432)	-1.561*** (0.390)	-1.734*** (0.382)
Hotel Size			1.505*** (0.0628)						1.462*** (0.0606)	1.494*** (0.0738)
Has Quality Certification				0.773*** (0.0944)					0.384*** (0.0826)	0.341*** (0.0856)
Licensing Obstacles					0.111** (0.0425)				0.0334 (0.0325)	0.0784** (0.0318)
Informal Market Obstacles						-0.0836** * (0.0280)			-0.0259 (0.0223)	-0.0367 (0.0240)
Crime/Theft Obstacle							0.00677 (0.0286)		0.00435 (0.0322)	0.0321 (0.0289)
Log GDP								1.532* (0.906)		1.468** (0.636)
Constant	15.85*** (0.0647)	16.79*** (0.649)	13.78*** (0.549)	15.40*** (0.252)	16.64*** (0.637)	16.29*** (0.268)	16.10*** (0.255)	-23.07 (23.03)	12.94*** (0.170)	-24.65 (16.19)
Observations	2,092	2,092	2,092	2,006	2,042	1,934	2,075	1,538	1,835	1,354
R-squared	0.001	0.707	0.819	0.741	0.708	0.733	0.728	0.725	0.848	0.848

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 3: Summary Statistics of Online Communication-Related Technology Control Variables

Variable	Obs	Mean	Std. dev.	Min	Max
Communicates with Email	1,079	1.762743	0.4255982	1	2
Has Own Website	1,079	1.666358	0.4717323	1	2
Telecommunications Barrier	1,079	0.8952734	1.135188	0	4

Table 4: Baseline Fixed Effect Results with Technology Adoption Controls

	(1)	(2)	(3)
HHI Foreign	-2.751*** (0.691)	-2.741*** (0.745)	-1.582*** (0.565)
Communicates with Email		0.589*** (0.129)	
Has Own Website		0.732*** (0.139)	
Telecommunications Barrier		0.0189 (0.0664)	
Constant	13.86*** (0.386)	11.85*** (0.517)	16.79*** (0.649)
Observations	932	932	2,092
R-squared	0.727	0.753	0.707

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5: Comparing the Impact of Multinational Hotel Concentration on Log Domestic Sales of Hotels Located Inside versus Outside Capital Cities

	(1)
In Capital City	-0.387***
	(0.111)
In Capital City * HHI_Foreign	-0.934
	(0.585)
Constant	13.34***
	(0.556)
Observations	1,850
R-squared	0.728

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6: Power Analysis of Option 1

alpha	power	N	delta	b0	ba	sdx	sderror	sdv
.05	.114	419	.03605	0	.5956	.191	3.155	3.157

Table 7: Power Analysis of Equation 2

alpha	power	N	delta	b0	ba	sdx	sderror	sdv
.05	.5662	1,850	-.04947	0	-.934	.1431	2.701	2.705

2Table 8: Power Analysis of Baseline Regression: Equation 1

alpha	power	N	delta	b0	ba	sdx	sderror	sdv
.05	.9981	2,092	-.1061	0	-1.582	.1839	2.742	2.757

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