

The importance of online payment on Travel and Tourism incomes

A Cross-Country Panel Data Study

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Abstract

Digital facilities are changing the way companies market to consumers. The use of smartphones and what we called Internet of Things (IoT) are changing the way citizens consume. In this article we perform a cross-country panel data study to analyze how the implementation of business Internet use for buying/selling goods and services, and for interaction with customers influences, for example, the international travel and tourism incomes. Our results show that the use of electronic commerce attracts international tourism and increases tourism revenue, as well as decreases the degree of tourism specialization in the country's export structure, the relative capability of tourism in generating foreign revenues decrease compare with the other sectors that become more powerful. Besides, we present one of the main political and governmental inhibitor that in this issue the companies must deal with in an international context, the currency exchange control, not yet greatly studied in previous literature.

Keywords: E-commerce; E-Payment; tourism competitiveness; foreign exchange control.

Introduction

Digital facilities are changing the way companies market to consumers. Internet and e-commerce development have changed the way companies offer, charge and deliver their services and products. We work now in a digital market where other variables should be studied under a multidisciplinary perspective.

Smartphones and internet penetration in the world

Smartphones and internet penetration growth are changing business models around the world. According to GSMA Intelligence, by the end of 2018, 67% of the global population subscribed to mobile services.

In the information and communication age, there are many available data about internet penetration. The raw smartphone penetration data is below, ranked by the number of users within each market. The United Arab Emirates has the highest smartphone penetration, whereas Bangladesh has the lowest (Bankmycell).

RANK	COUNTRY/MARKET	TOTAL POPULATION	SMARTPHONE USERS	SMARTPHONE PENETRATION	RANK	COUNTRY/MARKET	TOTAL POPULATION	SMARTPHONE USERS	SMARTPHONE PENETRATION
1	China	1.393.686.000	775.028.000	55,60%	26	Pakistan	200.663.000	23.228.000	11,60%
2	India	1.358.138.000	386.934.000	28,50%	27	Saudi Arabia	33.300.000	22.748.000	68,30%
3	United States	328.836.000	235.156.000	71,50%	28	Malaysia	31.571.000	20.980.000	66,50%
4	Brazil	212.873.000	91.191.000	42,80%	29	Colombia	49.469.000	20.352.000	41,10%
5	Russian Federation	143.261.000	84.075.000	58,70%	30	Australia	24.967.000	17.292.000	69,30%
6	Indonesia	266.357.000	67.570.000	25,40%	31	Taiwan, China	23.611.000	17.050.000	72,20%
7	Japan	125.738.000	65.282.000	51,90%	32	Algeria	41.730.000	15.887.000	38,10%
8	Mexico	131.788.000	60.870.000	46,20%	33	Morocco	35.652.000	13.995.000	39,30%
9	Germany	80.561.000	57.200.000	71,00%	34	Peru	32.554.000	13.765.000	42,30%
10	United Kingdom	65.913.000	46.639.000	70,80%	35	Venezuela	32.328.000	12.964.000	40,10%
11	Turkey	81.086.000	44.771.000	55,20%	36	Ukraine	44.170.000	12.649.000	28,60%
12	France	65.206.000	44.225.000	67,80%	37	Netherlands	17.085.000	12.129.000	71,00%
13	Italy	59.788.000	40.938.000	68,50%	38	Romania	19.105.000	11.575.000	60,60%
14	South Korea	50.897.000	37.114.000	72,90%	39	Chile	18.493.000	11.166.000	60,40%
15	Nigeria	196.753.000	36.445.000	18,50%	40	Iraq	39.751.000	9.627.000	24,20%
16	Egypt	97.007.000	35.622.000	36,70%	41	Bangladesh	166.735.000	8.921.000	5,40%
17	Iran	81.810.000	35.366.000	43,20%	42	Belgium	11.513.000	8.020.000	69,70%
18	Spain	46.117.000	32.069.000	69,50%	43	Kazakhstan	18.256.000	7.934.000	43,50%
19	Thailand	68.416.000	30.486.000	44,60%	44	United Arab Emirates	9.543.000	7.845.000	82,20%
20	Vietnam	96.357.000	29.043.000	30,10%	45	Sweden	9.987.000	7.391.000	74,00%
21	Philippines	105.341.000	28.627.000	27,20%	46	Czech Republic	10.563.000	7.106.000	67,30%
22	Canada	36.958.000	26.531.000	71,80%	47	Azerbaijan	10.070.000	6.961.000	69,10%
23	Poland	38.523.000	25.635.000	66,50%	48	Portugal	10.229.000	6.954.000	68,00%
24	Argentina	44.692.000	23.668.000	53,00%	49	Greece	10.872.000	6.896.000	63,40%
25	South Africa	55.867.000	23.242.000	41,60%	50	Switzerland	8.524.000	6.268.000	73,50%

Table 1. Smartphone penetration by countries ranked by the number of users, 2019.¹

In the following table and chart, world internet usage and population statistics by regions. Challenging continents according to penetration rate are Africa and Asia, with data lower than the average, but on the other hand with a higher level of growth. Sub-Saharan Africa is the fastest growing mobile market (GSM Association, 2017), although 40% of the population in the region are under the age of 16, a demographic segment that has significantly lower levels of mobile ownership than the population as a whole (GSM Association, 2018).

¹ Source: Bankmycell from Newzoo data

WORLD INTERNET USAGE AND POPULATION STATISTICS MARCH, 2019 - Update						
World Regions	Population (2019 Est.)	Population % of World	Internet Users 31 Dec 2018	Penetration Rate (% Pop.)	Growth 2000-2019	Internet Users %
Africa	1,320,038,716	17.0 %	464,923,169	35.2 %	10,199 %	10.8 %
Asia	4,241,972,790	54.7 %	2,160,607,318	50.9 %	1,790 %	50.1 %
Europe	866,433,007	11.2 %	705,064,923	81.4 %	571 %	16.3 %
Latin America / Caribbean	658,345,826	8.5 %	438,248,446	66.6 %	2,325 %	10.2 %
Middle East	258,356,867	3.3 %	170,039,990	65.8 %	5,076 %	3.9 %
North America	366,496,802	4.7 %	345,660,847	94.3 %	219 %	8.0 %
Oceania / Australia	41,839,201	0.5 %	28,437,577	68.0 %	273 %	0.7 %
WORLD TOTAL	7,753,483,209	100.0 %	4,312,982,270	55.6 %	1,095 %	100.0 %

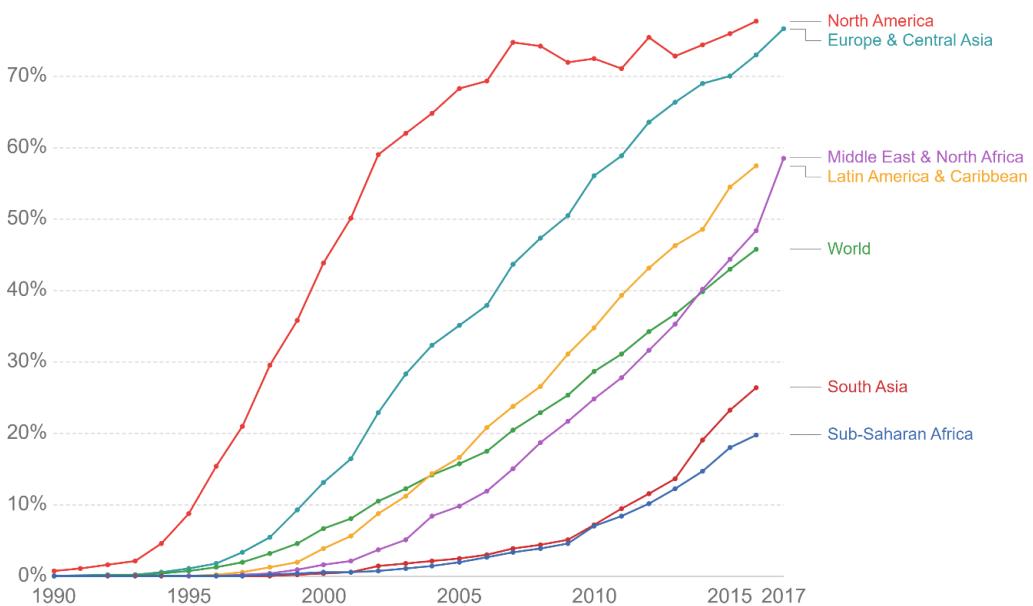
NOTES: (1) Internet Usage and World Population Statistics estimates in Dec 31, 2018. (2) CLICK on each world region name for detailed regional usage information. (3) Demographic (Population) numbers are based on data from the [United Nations Population Division](#). (4) Internet usage information comes from data published by [Nielsen Online](#), by the [International Telecommunications Union](#), by [GfK](#), by local ICT Regulators and other reliable sources. (5) For definitions, navigation help and disclaimers, please refer to the [Website Surfing Guide](#). (6) The information from this website may be cited, giving the due credit and placing a link back to [www.internetworldstats.com](#). Copyright © 2019, Miniwatts Marketing Group. All rights reserved worldwide.

Table 2. World internet usage, 2019.²

Share of the population using the Internet

Our World in Data

All individuals who have used the Internet in the last 3 months are counted as Internet users. The Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV etc.



Source: World Bank

OurWorldInData.org/technology-adoption/ • CC BY

Chart 1. Share of the population using the Internet, 1990-2017.³² Source: Internet World Stats³ Source: Our World in Data

Internet and economic activities

Google's annual Consumer Barometer Study asks detailed questions about the digital habits of people around the world. In 2017, the survey polled 79,000 people in 63 countries. Such breadth of coverage allows for identification of global trends, while recognising regional diversity. As a result, it's possible to draw a detailed picture of how adoption of mobile is influencing behaviour across a range of common online activities (Google, 2017).

As you can see below, smartphone ubiquity across the world enables consumer engagement in numerous use cases.

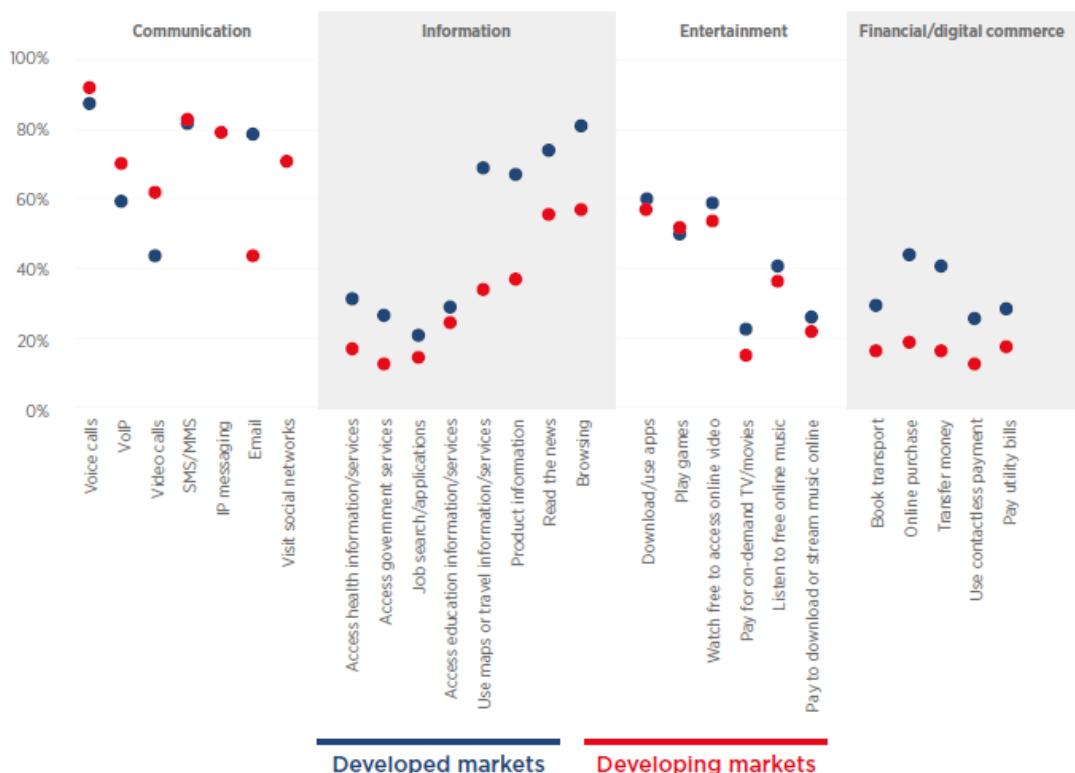


Chart 2. Percentage of smartphone users engaging at least once per month, 2018.⁴

In developing countries, there is a growing opportunity for mobile operators to target the business sector and governments with mobile enabled solutions that enable efficiencies by streamlining operations.

Digitising in some sectors, such as agriculture (GSM Association, 2019), education as well as healthcare, are more difficult to reach and is in process of being addressed.

⁴ Source: GSM Association (2019)

In agriculture sector for example, farmers face several challenges in agricultural supply chains in emerging economies that contribute to extreme levels of poverty. One common challenge is that farmers only have access to one channel, often an auction, for which to sell their crops. Recently, e-intermediaries have emerged as alternate, technology-driven posted-price channels (Ferreira et al., 2017). The last advances will be webs of relationships and transactions between buyers and the farmers who produce and sell their crops without the necessity of another intermediaries that are not carriers and developers of computer applications.

In the health sector, the latest advances could be described as the set of processes for the continuous and adaptive delivery of healthcare services to patients, which involve interactions and coordination between a broad range of systems, such as patient records and platforms for doctor booking and payment. In the same way, it is already possible to carry out medical diagnosis and assistance through the internet.

As well as healthcare and agriculture, internet based tools and solutions to address key challenges such as access, cost and quality of service are increasingly important for other key sectors of the economy, such as public services (Moreno-Enguix et al. 2019).

Internet and tourism.

The World Tourism Organization (2001), accepted the idea that internet and tourism are ideal partners. Internet supports the most recent developments in the Tourism sector providing the tourists of 21st century with the information they need in an increasingly sophisticated sources.

Liberato, et al. (2017) concluded that the tourism agents that use the internet become more competitive because they are chosen by users who prefer to opt for destinations, make hotel reservations more independently, faster and cheaper. The promotion of the use of technologies in search of information about destinations and tourism enterprises will be decisive for the tourism sector management, investments in the professionalization of human resources with special emphasis on the enhancement of technological skills.

An increasing number of countries have opened up and invested in tourism development, making tourism a key driver of socio-economic progress through export revenues, the creation of jobs and enterprises, as well as infrastructure development.

Because tourism was one of the first sectors to embrace e-commerce, in this paper we will review the role of online payment play in influencing the shape and nature of tourism and its associated development outcomes.

The key question that will underlie our discussion is whether online payment solutions can bring about a revolution in the ability of travel and tourism industry to create

and sustain more competitiveness. Besides, we will present one of the main political and governmental inhibitor that in this issue the companies must deal with in an international context, the currency exchange control.

Importance of Indexes for Benchmark studies in the Tourism Sector

Now we are going to analyze the most used tourism indicators to date in the literature, as well as we are going to make a small statistical comparison analyzing if there is any relationship between them. These indicators are summarized in the following table.

Indicators	Source	Periodicity	Economies	Items	Indicators
Doing Business	World Bank	Annual	190	11	41
TTCI	World Economic Forum	Biannual	136	14	90
ETIS	European Commission	Permanent	UE	4	27 principal 40 optional

*Table 3. Summary of tourism indicators analysed*¹⁵

Since 2004, the World Bank publishes the Doing Business ranking, an annual index that, based on the study of national laws and regulations, orders the different countries in a ranking according to the ease of doing business, without discriminating by sectors. The higher the index of a more propitious country is the regulation of that country for business activity.

The facility to do business is obtained, from eleven items: (1) Opening a business; (2) Management of construction permits; (3) Obtaining electricity; (4) Property registration; (5) Obtaining credit; (6) Protection of investors; (7) Tax payment; (8) Cross-border trade; (9) Compliance with contracts; (10) Insolvency resolution; (11) Regulation of the Labor Market.

The Travel and Tourism Competitiveness Report, elaborated by the World Economic Forum every two years, analyses the performance of economies through the Travel and Tourism Competitiveness Index (TTCI).

The TTCI provides a vision of the strengths and potential development areas of each country in order to improve the competitiveness of the industry. It measures the set of factors and policies that allow the sustainable and inclusive development of the tourism sector, which in turn contributes to the development and competitiveness of a country.

The TTCI is a measure of the factors that make investments attractive or help develop business in the travel and tourism sector of a specific country, therefore, this index

¹⁵ Source: Ruiz-Rúa y Lorente Bayona (2019)

should not be confused with a measure of the attraction of the country as a tourist destination.

TTCI was first published in 2007. The first report analyzed 124 economies. In its last edition it analyzed 136, classified in macro regions. It study 4 sub-indexes, 14 pillars and 90 individual indicators distributed between the different pillars.

In the Travel and Tourism Competitiveness Report, the countries are classified according to the Tourism and Travel Competitiveness Index (TTCI), with a rating that reflects the performance of each country in each specific sub-index. The general index is composed of four main subscripts: (1) Environmental Aptitude; (2) Tourist Policy and Enabling Conditions; (3) Infrastructure; and (4) Natural and Cultural Resources.

The 14 pillars of the TTCI are standardized on a 1-7 scale and are calculated on the basis of data derived from the Executive Opinion Survey, carried out by the World Economic Forum, as well as other quantitative data from independent and internationally recognized sources.

The Executive Opinion Survey is the most extensive survey that captures the opinions of business leaders from around the world on a wide range of topics.

Finally, the European Tourism Indicators System (ETIS) is designed as a process directed and controlled by the local population for the monitoring, management and improvement of the sustainability of tourist destinations. It was launched by the European Commission in 2013 to help destinations monitor and measure the results of their own sustainable tourism, using a comparable common approach.

It could be said that, although ETIS is a powerful source of information at a European level, at an international level it would not be comparable or representative, since it is a self-assessment tool for the management itself.

The ETIS is a voluntary management tool. The results of the follow-up are based on the self-assessment, the observations, the data collection and the analysis of these by the destinations themselves. The ETIS does not set the minimum values that must be achieved or provide any type of certification. However, by identifying a set of key indicators, it provides basic information to track sustainability and thus manage tourism more effectively.

Below, Table 4 includes the groups of concepts or elements that are measured in each indicator, all of which can be used to the decision-making process, the strategic comparison between countries, as well as for the application, for example, of policies for the development and improvement of the strategic positioning of the tourism sector.

TTCI	ETIS	Doing Business
Fitness of the Environment		
Business Environment	Destination management	Opening a business
Protection and security	Social and cultural impact	Management of construction permits
Health and Hygiene	Economic value	Obtaining electricity
Human Resources and Labor Market		Property registration
Preparation of ICT		Obtaining credit
Tourist Policy and Enabling Conditions		Protection of investors
Prioritization of Travel and Tourism		Tax payment
International opening		Cross-border trade
Competitive prices		Contract compliance
Environmental sustainability		Insolvency resolution
Infrastructure		
Air Transport Infrastructure		
Terrestrial and port infrastructure		
Tourist Service Infrastructure		
Natural and Cultural Resources		
Natural resources		
Cultural Resources and Business Trips		

Table 4. Summary of tourism indicators analysed II⁶

After conducting an exploration of the latest available information, with the aim of detecting information gaps and other possible relationships between the indicators do not contemplated before, below, the positive correlation between TTCI and Doing Business, both in scale 1-7, proves that there is a direct relationship between both indexes. Any barrier to the creation of companies is also a barrier to tourism competitiveness.

. regress ttc2017 doingbusiness						
Source	SS	df	MS	Number of obs = 136 F(1, 134) = 212.59 Prob > F = 0.0000 R-squared = 0.6134 Adj R-squared = 0.6105 Root MSE = .43183		
Model	39.6422016	1	39.6422016			
Residual	24.9877017	134	.186475386			
Total	64.6299033	135	.478740025			
ttc2017	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
doingbusin~s_cons	.6484884 .8499538	.0444769 .2064646	14.58 4.12	0.000 0.000	.5605209 .4416029	.7364558 1.258305

Table 5. Results of the TTCI / Doing Business Correlation Analysis, 2017.⁷⁶ Source: Ruiz-Rúa y Lorente Bayona (2019)⁷ Source: Ruiz-Rúa y Lorente Bayona (2019)

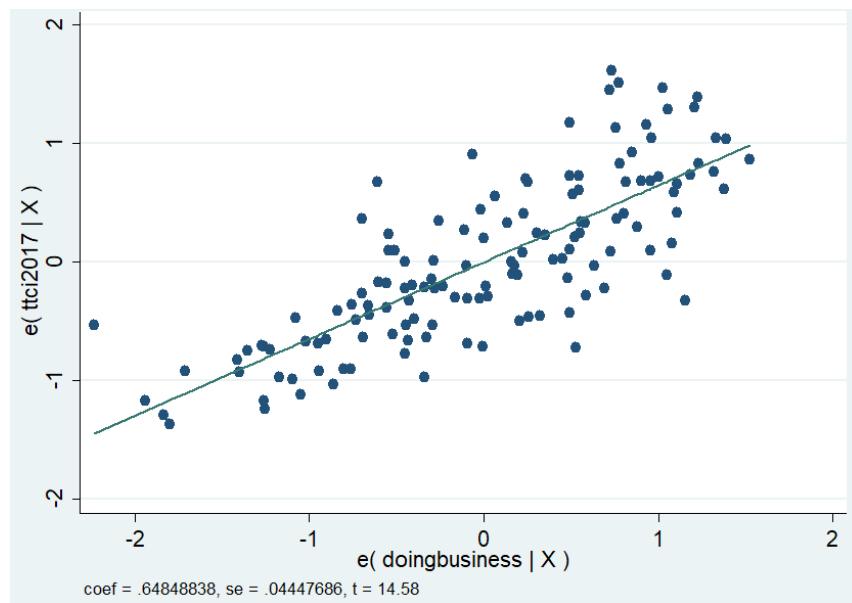


Chart 3. Point cloud, TTCI Correlation / Doing Business, 2017.⁸

If we take into account some concepts or elements that are measured by these indicators, for example, the greater or lesser environmental strength of a country is directly related to its income from tourism (World Economic Forum 2017), we observe that the Doing Business ranking, although it is interesting in order to make a first approximation about the ease of doing business in the different countries, in the tourism sector are many other variables involved.

Related to the above, country natural environment is increasingly interesting for tourists. Therefore, as natural capital runs out, destinations lose interest and with that income. On the other hand, although tourism is often negatively affected by pollution, it is also important to recognize that activities associated with tourism could harm the environment (World Economic Forum 2017).

In tourism sector we have to take in account that the number of people today moving is unprecedented. If historically most movements were carried out from north to north, this reality is changing, and it is expected that departures from Africa, the Middle East and Asia-Pacific will grow exponentially in the coming decades (World Economic Forum 2017).

In fact, since the global financial crisis, the tourist spending of developing nations has grown faster than that of advanced economies, this situation forces us to question some review of the tourism indicators used, including perhaps other restrictions not

⁸ Source: Ruiz-Rúa y Lorente Bayona (2019)

contemplated so far such as, for example, the control of currency exchange (Anato y González Agra undated) due to the impossibility or more difficulty of contracting services over the Internet since their currency is not quoted internationally. For this, we will later make a little discussion about it.

Information and Communication Technologies development, as well as social networks, have made possible a change in tourism management, one of the sectors where a greater amount of free information is available in the "cloud", immediate, without filters and without the need to "move from home". Forums, blogs, as well as social networks, help us not only to evaluate upcoming destinations, but also to hire them.

Globalization and advances in new technologies, especially on the Internet, have given rise to a series of initiatives and demands of an interactive nature that are subjecting tourist companies from all over the world to an important pressure to innovate and change the way they relate to the clients.

As the IV Industrial Revolution expands, digital is increasingly becoming a basic requirement to be competitive in any industry, and it has been demonstrated that especially in tourism, the use of new technologies is key to boost its growth (World Economic Forum 2017).

Likewise, governments are responsible for other restrictions. Countries that do not integrate technology (such as secure payment through Paypal or others) and improve their connectivity will be left behind. In recent years, all countries have significantly increased their infrastructures in telecommunications, the use of mobile phones as well as Internet services has skyrocketed while until very recently, in many places there was no telephone coverage.

In 2017, eMarketer predicted that the number of tourist reservations made through mobile devices would exceed 40% of the total digital reservations made that year by users of all the world. This highlights the importance of improving the quality and competitiveness of tourism companies, in the context of a highly competitive market and with much more demanding customers when making the decision to make a reservation.

If we take into account the concept of benchmarking and efficiency as the possibility of reach the best results with the own resources, the analysis in depth of these data could help us to highlight deficiencies by countries, being useful in the decision-making process, not only by the private sector but also by the governments.

International comparative techniques have proved efficient in international analysis to detect good practices and to analyze their possible implementation in another country. These indices could help us to analyze the trends by country.

For example, if we focus on the case of Spain, leads the TTCI ranking since 2015 due to redirecting tourism from the Middle East and Eastern Europe for security reasons; to its cultural and natural heritage; as well as good air connectivity and infrastructures. It must work instead at the level of business bureaucracy. For its part, Asia-Pacific and Latin American regions are following a good path, gaining ground to other historically competitive European destinations.

Literature Review

The role of e-commerce in the tourism industry cannot be underestimated and it is crucial driving force in the current information driven society (Shanker 2008). The role of e-commerce is to market the destination as a safe and preferable one to the international tourists. New global markets and international partnerships can be accessed, resulting in new business models that add customer value and increase profitability, as well as more effective segmentation, targeting, and positioning strategies (Akehurst 2009). Subsequently, online travel bookings and associated travel services are recognized as one of the most successful e-commerce implementations.

Social media are playing an increasingly important role as information sources for travelers (Xiang and Gretzel 2010). Particularly, mobile commerce makes it possible for consumers to do purchase at anytime from anywhere (Pantano and Priporas 2016).

Total amount of digital travel sales worldwide is around 690 billion U.S. dollars in 2018 (Statista 2018a). According to Eurostat (2016), in 2014, rented tourist accommodation was booked online for more than 50% of the trips made by residents of the European Union. Furthermore, the prevalence of online booking was a bit higher for trips abroad.

It is evident that e-commerce is an essential prerequisite for successful organizations in the emerging, globally networked, internet-empowered business environment, especially for the tourism industry (Law et al. 2009).

E-commerce has its advantages, such as speed of access to information, and a wider selection of goods and services, not only in the national market, but also in an international reach (Xiang and Jing 2014). Exclusivity, do it yourself concept, differentiation and customized service are now closer than ever thanks to the use of Internet.

Thanks to the e-commerce development, our expectations over recent years have changed. Consumers can now purchase endless amounts of items online and expect to organize by their own any wish trip they desire.

We can not only compare prices online and look for a restaurant or a hotel by using information from different sources, but also book a reservation, and even make payments in just one quick click and with a discount. Online payment is an efficient transaction and should be integrated into any consumer marketing strategy.

E-commerce market grows rapidly with the growth of the Internet across the world (Wang et al. 2008), and mobile payment is quickly making its way into becoming a consumer habit. In fact, mobile payments have grown exponentially in last years. According to Statista (2018b) and TrendForce (2016), worldwide mobile payment revenue in 2015 was 450 billion U.S. dollars and is expected to surpass 1 trillion U.S. dollars in 2019.

With the increase in smartphone owners over the years, mobile devices have caused a shift in the way e-commerce now operates. Shoppers conduct online research before they make a purchase by using a search engine, as well as by reading product reviews to reduce the risk of buying (Kim and Srivastava 2007). The growth of safety sources to e-pay, such as PayPal, also transformed the way that consumers could make payments and shop online, while offered trust, security and privacy.

In the most developed regions of the world, it is designed to make consumers' shopping easier and allows cost savings for producers and merchants, while mobile payment innovation in some Asian and African countries has largely been driven by services. This is an important difference in the e-commerce behavior that has not been considered sufficiently.

Some Asian and African countries have taken the leap directly to mobile services in absence of the widespread availability of bank accounts, creating a positive impact on the local economies. In the developing world, mobile payment accounts are the primary in-store payment, alternative to cash and credit cards (KPMG 2015).

As of February 2017, mobile devices accounted for about 50% of web page views worldwide, with mobile-first markets such as Asia and Africa leading the pack. Kenya registered the highest rate of internet traffic coming from mobile devices; followed by Nigeria, India, Singapore, Ghana, and Indonesia. Therefore, the importance of studying not only online payment, but also mobile payment (Statista 2018c).

The success of proximity mobile payment adoption in Asia is due to the country's mobile-first culture, as well as a booming middle class. These newly banked individuals are choosing to open mobile payment accounts as opposed to signing up for traditional credit cards. In 2019, nearly half of China's population is expected to use mobile payments (KPMG 2015).

For all the above, we believe online payment technology has a positive impact on tourism sector and by an empirical analysis, we will study the importance of Internet use for business to consumer transaction on tourism incomes.

Internet has become more accessible than ever before, even in previously underserved corners of the world. As the worldwide web becomes truly worldwide, the e-commerce market is expanding its reach into new and increasingly important markets. Global

e-commerce giants as well as smaller companies have taken notice of the increasing importance and opportunity of non-western markets, and they are moving in to take advantage. However, companies should tailor for different languages, currencies, brand representation online, logistic, as well as seasonal trends, between others.

Literature reveals many significant factors inhibiting adoption of e-commerce. Together with organizations internal barriers, we can highlight a set of impediments that arise due to infrastructure (technological and economic), political, legal, social and cultural barriers that exist in the country, the external barriers (Kapurubandara and Lawson 2006).

Even though most of the barriers are well described by the literature and directly related in cause-effect relationships, we have made a discussion about a key factor that has not been considered before, the foreign exchange control.

Citizens of countries with foreign exchange controls cannot buy, nor book a reservation or pay foreign products by Internet if they don't have a credit card in a foreign currency.

Because it is vital to understand the barriers that inhibit companies in developing countries, how they could overcome these barriers if they are to take advantage of the benefits from e-commerce, below we will present the exchange restrictions problem of several economies.

A currency exchange control discussion

Currency controls, foreign exchange controls or currency exchange controls are a set of restrictions applied by some governments to ban or limit the sale or purchase of foreign currencies by nationals or residents and the sale or purchase of local currency by foreigners or nonresidents.

Common foreign exchange controls include banning the use of foreign currency within the country; banning locals from possessing foreign currency; restricting currency exchange to government-approved exchangers; fixed exchange rates; as well as restrictions on the amount of currency that may be imported or exported.

Such controls used to be common in particularly poorer countries, until the free trade and globalization started a trend towards economic liberalization on 90's. Today, countries that still impose exchange controls are the exception rather than the rule.

In a context of free trade, the value of currencies fluctuates continuously according to dynamics of demand and supply. In order to limit the volatility of their exchange rate and provide greater economic stability to their countries, monetary authorities may implement foreign exchange controls.

Economists refer to capital control as a range of policies that are designed to manage global capital flows. Such policy initiatives can take many forms. For instance, restrictions can be placed on foreign investment in certain sectors, on capital outflows, or on access to the domestic or foreign currencies.

Capital control received more support following the East Asian crisis in 1997-1998 since previous policies of capital liberalization as a result of International Monetary Fund (IMF) pressures resulted in a huge inflow of foreign capital into the East Asian economies, which was reflected in a lending boom and domestic banks taking greater risks. The government failed to prevent funds from being used to finance speculative activities (Dymski 2010).

Policy can place restrictions on foreign capital investment in domestic assets, or on domestic capital moving abroad. As extreme measures to control market forces, the government may impose control over international transactions. If the government wants to have virtual control over foreign exchange, it can decide who they would like to distribute those foreign currencies, the advantage being that with such measures it can influence the markets. Capital control can provide greater options for economic matters and policies, especially fiscal and monetary policies (Dymski 2010). The balance of payments can also be influenced by capital control measures.

Those in favor of capital liberalization argue that capital will flow from the developed countries, where it provides low marginal returns, to developing countries where it is assumed that it is scarce, meaning that free capital movement would imply high marginal returns (Crotty and Epstein 1999; Siddiqui 2016).

Following such policies was expected to increase investment in developing countries, meaning that ultimately, they would have higher growth rates.

According to Gallagher and Tian (2017), the IMF, since early 1980s, was skeptical of the regulation of cross-border financial flows. However, after the 2008 global financial crisis, it extended support to Brazil and Iceland for the use of capital control on outflows to both prevent and mitigate financial crisis.

In terms of the financial crisis, the capital control are important macroeconomic measures that a country can use to prevent and mitigate financial crisis (Gallagher and Tian 2017). On the other hand, social benefits of capital inflows has unclear results (Robinson 1971). The Robinson's study also argues that the restrictions on capital mobility will enable developing countries to exercise monetary autonomy and stable exchange rates.

Furthermore, In the face of the 2008 global financial crisis, India and China, for instance, slowed down their plans to liberalize their capital account (Siddiqui 2010).

India, like China, has not fully liberalized capital flows and short-term debt inflows in particular have remained under tight control. This helped them maintain stability during the global financial crisis of the 2008.

To minimize the frequency of financial crises, some developing countries could adopt measures towards controlling capital inflows and outflows. Inflows control might prevent large inflows and also reduce excessive lending and short-term speculation and borrowing. Outflows control would reduce the risk of sudden capital outflows if foreign capital decides to pull out of the country not only for financial crises, but also for other reason such as political problems and risks.

Siddiqui, 2017, argue that financial liberalization strengthens international capital and by assigning complete authority to the central banks, governments have little policy control over monetary and exchange rate. Increased power is transferred to bureaucrats and financiers who control international financial institutions.

On the other hand, we have also to notice that foreign exchange controls often can result in the creation of black markets to exchange the weaker currency for stronger currencies. This leads to a situation where the exchange rate for the foreign currency is much higher than the rate set by the government, and therefore creates a shadow currency exchange market. As such, it is unclear whether governments have the ability to enact effective exchange controls.

Currency controls are a challenge for international companies as they hinder their ability to trade in local currencies. These restrictions often entail further processing efforts for the company and increase the costs of FX operations and cross-border payments.

Payments and collections made through the Internet are easily verifiable by Public Administrations and could reduce the risk of tax fraud, so it could be interesting to study the evolution of these indicators over time.

In the era of the e-commerce, lot of developing countries have currency exchange control and their residents are not allowed to buy by Internet international products and services. The countries that today are subject to capital control are an important potential market, which as soon as they can access to make purchases over the Internet, will modify the volume of electronic transactions.

Even this a dynamic list, those countries with higher foreign exchange controls are Algeria, Angola, Armenia, Bahamas, Cameroon, China, Cuba, Ethiopia, Ghana, India, Iran, Libya, Morocco, Myanmar, Mozambique, Namibia, Nepal, Nigeria, North Korea, Russia, Samoa, South Korea, South Africa, Sudan, Tunisia, Ukraine, Uzbekistan, Venezuela, Zimbabwe.

Data

This research enables us to draw a general picture of the impact of the level in which companies use the Internet for business to consumer transactions and expenditure of both, inbound visitors and outbound visitors.

To have a consistent panel data analysis, we needed data on similar constructs across all the years, and this was the key factor that determined the time period we examined. Further, as the variables used in this study were taken from different sources, it was essential to consider only those countries for which data were available in all the reports. Consequently, we were left with data from 128 countries in the period 2007-2013.

Main dependent variable data were collected from Travel and Tourism Competitiveness Report (World Economic Forum). The World Economic Forum has, for the past 11 years, engaged leaders in travel and tourism to carry out an in-depth analysis of the Travel and Tourism competitiveness of 136 economies across the world.

The Travel and Tourism Competitiveness Index -briefly presented previously- was developed between September 2005 and October 2006 by the World Economic Forum in close collaboration with other international organizations, such as the International Air Transport Association (IATA), the World Tourism Organization (UNWTO), and the World Travel & Tourism Council (WTTC), World Economic Forum 2017.

The Travel & Tourism Competitiveness Index (TTCI), aims to measure the factors and policies that make it attractive to develop the Travel and Tourism sector in different countries. The TTCI is composed of several "pillars", one of them ICT infrastructure.

Mathematically, ICT infrastructure indicator is an unweighted average of three (normalized) scores -extent of business Internet use; Internet users (hard data); telephone lines (hard data)-

In our models, the main independent variable is extent of business Internet use (*EBIU*), a proxy of the level in which companies use the Internet extensively for buying/selling goods and services, and for interaction with customers. Data are Survey data from the World Economic Forum's annual Executive Opinion Survey.

This Survey is carried out among CEOs and top business leaders in lot of economies covered by the study. The Survey data range from 1 to 7. Sample minimum and sample maximum are the lowest and highest values of the overall sample, respectively.

variable	Obs	Mean	std. Dev.	Min	Max
EBIU	498	4.441165	.9301848	2.1	6.6
TO	487	6.443121	5.501357	.2	31.5
LnITR	509	21.43219	1.895971	14.34614	26.11003
LnITE	508	21.1542	1.942597	15.57337	25.59194
intrcptxp	500	11.32659	11.32891	.3593912	65.77409

Table 6. Descriptive statistics

EBIU extent of business Internet use, *TO* country tourism openness, *LnITR* international tourism receipts (natural logarithm), *LnITE* international tourism expenditures (natural logarithm), *intrcptxp* importance of tourism as an internationally traded service.

Country tourism openness (*TO*) is measure by tourism expenditure and receipts as a percentage of GDP. Data were collected from the hard data that the World Economic Forum collects from the World Tourism Organization and publish in the Travel & Tourism Competitiveness Report each two years.

International tourism receipts, natural logarithm (*LnITR*), are the expenditures by international inbound visitors, including payments to national carriers for international transport. These receipts include any other prepayment made for goods or services received in the destination country. They also may include receipts from same-day visitors, except when these are important enough to justify separate classification. For some countries, they do not include receipts for passenger transport items. Data are in current U.S. dollars. Data were collected from the World Bank, who collect data from the World Tourism Organization.

International tourism expenditures, natural logarithm (*LnITE*), are the expenditures of international outbound visitors in other countries, including payments to foreign carriers for international transport. These expenditures may include those by residents traveling abroad as same-day visitors, except in cases where these are important enough to justify separate classification. For some countries, they do not include expenditures for passenger transport items. Data are in current U.S. dollars. Data were collected from the World Bank, who collect data from the World Tourism Organization.

Importance of tourism as an internationally traded service (*intrcptxp*) is measure by international tourism receipts as a percentage of total exports. As an internationally traded service, inbound tourism has become one of the world's major trade categories. For many developing countries, it is one of the main sources of foreign exchange income and a major component of exports, creating much needed employment and development opportunities. This measure reflects the importance of tourism as an internationally traded service relative to other categories of exports. Such a measure

reveals the degree of tourism specialization in a country's export structure and the relative capability of tourism in generating foreign revenues.

Econometric Specification

Within the social sciences, panel data analysis has enabled researchers to undertake longitudinal analyses in a wide variety of fields.

Panel data have both, benefits and limitations. According to Pindado and Requejo (2015), the panel data methodology should be used if the unobservable heterogeneity problem arises. But panel data analysis has other benefits, such as more informative data, more variability, less collinearity among the variables, more degrees of freedom and more efficiency. Panel data are better suited for studying the dynamics of adjustment, are better able to identify and measure effects that are simply not detectable in pure cross-sections or pure time-series data, allow us to construct and test more complicated behavioral models than purely cross-section or time-series data, and are usually gathered in micro units, like individuals, firms and households.

On the other hand, among the limitations we can highlight design and data collection problems, distortions of measurement errors, selectivity problems and short time-series dimension.

In our case, we have used static models, in both fixed and random effects, as this methodology allows the control of unobservable heterogeneity and avoid biased estimators. In this case it is important, as each country has its own culture and its own way of managing tourism sector.

The t tests associated with the regression coefficients can be interpreted as effect sizes, with values of .20, .50, and .80, reflecting a weak, moderate and strong change, respectively.

The main hypotheses and regression models and conceptual model are given below

Hypothesis 1 A higher level of Internet use for business to consumer transactions is associated with significantly a higher level of international tourism receipts.

Hypothesis 2 A higher level of Internet use for business to consumer transactions is associated with significantly lower level of country tourism openness -tourism expenditure and receipts as a percentage of GDP-.

Hypothesis 3 A higher level of Internet use for business to consumer transactions is associated with significantly a lower importance of tourism as an internationally traded service relative to other categories of exports - international tourism receipts as a percentage of total exports-.

Panel Regression Results

We analyze the empirical relation between the level of Internet use for business to consumer transactions and several variables by means of linear regression models. We estimate a Generalized Least squares (GLS) regression.

Generalized least squares is used for heteroscedastic regression, that is, when the variances of the observations are unequal. This is a form of weighted least squares.

The result of Model 1 determines the positive and significant relation between the level of Internet use for business to consumer transactions and international tourism revenues. The use of Internet in the business activities of the country increase expenditures of international inbound visitors (1.1).

We also repeated the analysis with the expenditures of international outbound visitors and the results are similar (1.2).

Model 2 and 3 shows the relationship between the level of Internet use for business to buy/sell goods and services and to interact with customers and both, country tourism openness, as well as the importance of tourism as an internationally traded service relative to other categories of exports. There is empirical evidence that the relationships are negatives.

Random Effects Models:

$$\begin{aligned} 1.1 - \text{LnITR}_{it} &= \beta_0 + \beta_1 * \text{EBIU}_{it} + \varepsilon_{it} \\ 1.2 - \text{LnITE}_{it} &= \beta_0 + \beta_1 * \text{EBIU}_{it} + \varepsilon_{it} \\ 2. - \text{TO}_{it} &= \beta_0 + \beta_1 * \text{EBIU}_{it} + \varepsilon_{it} \\ 3. - \text{intrcptx}_{it} &= \beta_0 + \beta_1 * \text{EBIU}_{it} + \varepsilon_{it} \end{aligned}$$

Variable	LnITR	LnITR	TO	Intrcptx
Constant	20.396	20.164	9.733	17.4390
EBIU	.2326***	.2229***	-.7464***	-1.3985***
N	495	494	483	487
R ²	0.1371	0.1179	0.0359	0.0726

Table 7. Linear regression models

EBIU extent of business Internet use, *TO* country tourism openness, *LnITR* international tourism receipts (natural logarithm), *LnITE* international tourism expenditures (natural logarithm), *intrcptx* importance of tourism as an internationally traded service.

The level of significance is noted by * for 10%, ** for 5%, *** for 1%.

Regression results show that a higher level of Internet use for business to consumer transactions is associated with significantly a higher level of international tourism receipts. A higher level of Internet use for business to consumer transactions is also

associated with significantly a higher level of international tourism expenses. On the other hand, as companies use the Internet extensively to buy/sell goods and services and to interact with customers, tourism expenditures and revenues as a percentage of GDP decrease. Finally, if we analyze the impact on the importance of tourism as an internationally traded service relative to other categories of exports, results show a lower degree of tourism specialization in the country's export structure.

Conclusions

International comparative techniques have proved efficient in international analysis to detect good practices and to analyses their possible implementation in another country. The study proposed in this article is the beginning of this line of research that has, as future steps, its application in two senses, to explore ways of continuous improvement on the current situation and to be able to show the success situations and lessons learned that have been had in each country, in particular in competitiveness, gaining tourists from quality and capacity as a world leader in receiving tourists.

The indicators analyzed show the great importance of tourism worldwide and the validity of these indicators in the international strategic compartment at an aggregate level. The application of these indicators for the study of the positioning of the country and the comparison strategic with other countries can be useful in the decision-making process and especially for the improvement of the positioning of a country in general and the improvement of the efficiency of the national system in particular.

If the facility to do business is obtained, from eleven items -(1) Opening a business; (2) Management of construction permits; (3) Obtaining electricity; (4) Property registration; (5) Obtaining credit; (6) Protection of investors; (7) Tax payment; (8) Cross-border trade; (9) Compliance with contracts; (10) Insolvency resolution; (11) Regulation of the Labor Market-, a higher level of doing business was associated with significantly higher levels of Tourism and Travel Competitiveness Index (TTCI). Put another way, more propitious regulation for business activity, without discriminating by sector, was associated with significantly higher levels of tourism competitiveness. Any barrier to the creation of companies is also a barrier to tourism competitiveness.

E-Commerce is recognized as one of the most successful implementations. Those countries, especially developing, that are focused on tourism as the main source of income, should promote the use of e-reservation, as well as e-payments. On the other hand, all payments and collections made through the Internet are easily verifiable by Public Administrations and it could be a useful tool to reduce the risk of tax fraud. This research enables us to draw a general picture of the impact of the level in which

companies use the Internet for business to consumer transactions and expenditure of both, inbound visitors and outbound visitors.

A higher level of Internet use for business to consumer transactions is associated with significantly a higher level of international tourism receipts. This means that the use of electronic commerce attracts international tourism. A higher level of Internet use for business to consumer transactions is also associated with significantly a higher level of international tourism expenses. E-Commerce not only help rise international inbound incomes, but also international outbound expenditure.

On the other hand, as companies use the Internet extensively to buy/sell goods and services and to interact with customers, tourism expenditures and revenues as a percentage of GDP decrease. This means that E-commerce not only help to rise the international tourism, but also help to develop other economic sectors even more than tourism one.

If we analyze the impact on the importance of tourism as an internationally traded service relative to other categories of exports, results show a lower degree of tourism specialization in the country's export structure. So, the relative capability of tourism in generating foreign revenues decrease compare with the other sectors.

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