Institución Universitaria Politécnico Grancolombiano

COMPARISON OF THE EVOLUTION OF E-COMMERCE IN COLOMBIA AND GERMANY

Anyi Katerinne Fierro Patiño

Monograph

Research report submitted in partial fulfillment of the requirements for the degree of Bachelor in International Business

Directed by

Maria Gabriela Ramos Barrera

Faculty of Business, management, and sustainability

Bogotá, Colombia

December 2020

ABSTRACT

In recent years, the rapid digital transformation has led to a significant worldwide growth of electronic commerce. Although this is a global phenomenon, the evolution of E-Commerce in developing countries shows deficiencies with respect to developed countries. Therefore, this research is conducted to investigate reasons for this lagged development by means of a comparative analysis of the E-Commerce in Colombia and Germany. In addition to the identification of shortcomings, it is of interest to evaluate potential lessons learned from the German development and explore measures to be potentially implemented to further aid Colombian E-Commerce. To achieve this, the evolution of electronic commerce of both countries is presented employing a mixed method approach, which uses a combination of qualitative and quantitative analysis. Collected data is then further examined in a comparative study under the assumption of systemic competitiveness, where the micro, meso, meta, and macro levels are utilized to identify factors either contributing to or adversely affecting the growth of E-Commerce in Colombia. As outcome of the analysis, multiple factors are identified on all levels, where infrastructure is named as one of the primary shortcomings of Colombia with respect to further growth of E-Commerce. Concluding remarks complete this research.

Keywords: E-Commerce, comparative analysis, systemic competitiveness, developing country, developed country.

JEL classification: L81, N70, O10, O33, O57.

RESUMEN

En los últimos años, la rápida transformación digital ha llevado al comercio electrónico a tener un crecimiento mundial significativo. Aunque se trata de un fenómeno global, la evolución del comercio electrónico en los países en vías de desarrollo muestra deficiencias con respecto a los países desarrollados. Por lo tanto, esta investigación se realiza mediante un análisis comparativo del comercio electrónico en Colombia y Alemania para encontrar las causas del rezago del desarrollo en Colombia. Además de la identificación de las deficiencias, es de interés evaluar las posibles lecciones que pueden ser aprendidas del desarrollo alemán y explorar medidas que pueden ser potencialmente implementadas para ayudar aún más al comercio electrónico colombiano. Para lograrlo, se presenta la evolución del comercio electrónico de ambos países empleando un enfoque de método mixto, el cual utiliza una combinación de análisis cualitativo y cuantitativo. Los datos recopilados se examinan luego en un estudio comparativo bajo el concepto de competitividad sistémica, donde los niveles micro, meso, meta y macro se utilizaron para identificar los factores que contribuyen o afectan negativamente al crecimiento del comercio electrónico en Colombia. Como resultado del análisis, se identifican múltiples factores en todos los niveles, donde la infraestructura es nombrada como una de las principales deficiencias de Colombia con respecto al crecimiento del comercio electrónico. Las observaciones finales concluyen esta investigación.

Palabras clave: E-Commerce, análisis comparativo, competitividad sistémica, país en vías de desarrollo, país desarrollado.

JEL clasificación: L81, N70, O10, O33, O57.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

Over the past decades, digital technologies have experienced an overwhelmingly fast evolution, which has brought resounding changes to society at social, economic, and cultural levels. This arrival of new technologies has facilitated the creation of innovative strategies in different economic sectors worldwide.

Based on this progress in digital transfer of information and data distribution, electronic commerce, referred to as E-Commerce throughout this thesis, has been implemented in the economic market. It was initially only associated with transactions such as the exchange of electronic data, but from the arrival of the internet in the 90s, the evolution of E-Commerce has been in constant growth, becoming a strategic medium for buying and selling online goods from different places of the world using various electronic payment methods.

The topic of E-Commerce has also gained further relevance during the ongoing COVID-19 pandemic. Due to various lockdowns and regional quarantine situations around the world, consumers have been increasingly moving to purchase consumer goods online, which has accelerated the digital transformation and the shift to E-Commerce worldwide (OECD, 2020). Companies have been forced to use all potential online channels to keep up their sales and continue connecting with consumers. Especially companies focusing on stationary business have been facing the need of fast implementation of digital technologies to enable online trade and at least partially retain their revenue.

Big marketplaces have reported significant increases in online trade during the current year, which implies a growing share of the E-Commerce with respect to the countries' economies (Roi Revolution, 2020). While long-term consequences of the pandemic, both on a societal and economical level, are difficult to predict in the current situation, the digital transformation of various fields can be expected to stay and further flourish. Although official economic data for 2020 are not yet available, E-Commerce has considerably grown according to intermediate statistics.

E-Commerce in Colombia has also experienced a significant growth in the last years before the pandemic and had a great impact on the economy. Online shopping and payments have become daily life in Colombia thanks to the entry of new companies with new proposals and possibilities for customers. Although Colombian E-Commerce advanced in the past years, the economies of developed countries can serve as a role model for its future development. For this, the evolution of Colombia's E-Commerce is compared to a developed country of the European Union, which manifests itself in a political partnership between 27

European countries. Besides of the Single European Market, which is among the three largest economies in the world, the European Union is the main provider of development aid in the world, making it interesting for a comparison to a developing country such as Colombia. (European Comission, 2020). Germany is selected as the comparing country, because it accounts for the largest economy of the European Union and is among both the most developed countries of the European Union and leading countries of E-Commerce revenue in the world (eMarketer, 2019), which is the basis for being a good example for this research. Based on this comparison, shortcomings of the Colombian E-Commerce are identified and measures that could be potentially transferred from developed countries such as Germany to developing countries are researched.

Before the E-Commerce of both countries is compared later, relevant main figures of both countries are briefly introduced. According to article 1 of the political constitution of Colombia, "*Colombia is a social state under the rule of law, organized in the form of a unitary republic"*. Its branches of public power are the legislative, executive, and the judicial (Constitución Política de Colombia, 1991). The Federal Republic of Germany is a parliamentary, representative democratic republic. According to the German Basic Law, "*the legislature is bound by constitutional order, the executive and the judiciary by laws and justice*" (Bundesamt für Justiz, Article 1,). With more than 83 million inhabitants, Germany's population is significantly larger in comparison to Colombia's population of about 50 million inhabitants.

The Gross Domestic Product (GDP) per capita is an economic aspect that must be considered since it shows the purchasing power of the population of a country. This value is computed by dividing the GDP by the total population of the country. According to The World Bank, Colombia´s GDP per capita was 6,432.388 US dollars in 2019 with an unemployment rate of 9.71% while Germany´s GDP per capita was 46,258.878 US dollars in 2019 with an unemployment rate of 3.04% (The World Bank, 2019).

In both countries, most employees worked in the tertiary sector in 2019 (74.67% in Germany, 67.3 % in Colombia). With 24.1% Germany has a comparatively high share of workforce in the secondary section, which originates from the Germany's strong industrial export economy. Colombia, being a developing country, shows a higher rate of employees in the agriculture sector than Germany (13.6% as opposed to 1.3%) (Statistisches Bundesamt, 2019; MINCIT, 2019).

This thesis is structured as follows: The problem statement, the corresponding general and specifies objectives, and the justification for this thesis are presented in the subsequent

sections. Then, the theoretical and methodological framework are introduced, which are composed of the description of the method of systemic competitiveness, an overview of relevant publications in this field, and a methodological framework with a mixed approach. In the next section, the evolution of E-Commerce in both Colombia and Germany is presented, where relevant aspects that contribute to the growth of E-Commerce in each country are investigated. These items and results are then analyzed using the concept of systemic competitiveness. This thesis ends with concluding remarks.

RESEARCH CONTEXT

Problem statement

E-Commerce[1] is steadily growing in Colombia and worldwide. This global trend accelerated over the past years, creating new markets, and contributing significantly to the growth of companies as well as the countries' economies (Lipsman, 2019). Although growing E-Commerce is a global phenomenon, its impact on the national economies differs considerably between countries of different development stages. In this context, it is of interest to compare the evolution of countries subject to these diverse conditions. For this purpose, Germany as an example for a developed country is compared to Colombia. The selected country for this comparison is Germany, because it is considered the economic engine of the European Union as one of the largest economies of the world and plays an important role in context of international trade. Additionally, E-Commerce has established itself as one of the key industries for the economic growth of Germany in the last five years, making it to one of the leaders of E-Commerce in the world (Eshopworld, 2018).

The E-Commerce in Colombia is in its initial stages when compared with its presence in Germany. However, there was a significant advance of online trade in Colombia over the last five years. B2C E-Commerce turnover in Colombia, including goods and services, generated sales of 7,680 million US-Dollar, meaning an increase of 152.22% compared to 3,045 million US-Dollar in 2015 (Tejeda, 2020).

However, E-Commerce continues to present shortcomings and difficulties. This results of the fact that the adaptation is not fully applied by the majority of Colombians because of factors such as infrastructure, unavailability of required equipment, lack of knowledge about E-Commerce markets, or personal preference, which negatively influence the share of E-Commerce in Colombia. These inhibitive effects require analysis that is conducted by comparing the evolution of German E-Commerce to Colombia's development.

[1] E-Commerce is a sub class of electronic business and refers to selling and buying processes, where transactions are carried out electronically (Oracle, 2020). Typically, four main types of E-Commerce are defined. Business to Business (B2B) is a business model in which the transactions of goods or the provision of services are conducting between companies. Business to Consumer (B2C) is a sales model, where services and products are sold directly between a company and a consumer. Consumer to Consumer (C2C) refers to a business relationship between private individuals. Business to Government (B2G) refers to companies doing business with the government. This thesis mainly focuses on the B2C E-Commerce.

It is for the above reasons that this research aims to find out about the cause for the lagged development of the E-Commerce in Colombia with respect to developed countries such as Germany, and what lessons learned from the history of E-Commerce in Germany could be transferred to Colombia.

Objectives

General Objective

Analyze the shortcomings and reasons for the lagged development of the E-Commerce in Colombia compared to Germany.

Specific Objectives

- Analyze the evolution of the growth of E-Commerce in Colombia and Germany to identify the shortcomings of its development in Colombia.
- Identify the main factors acting as obstacles in Colombia's E-Commerce.
- Analyze based on the evolution in Germany, what technological, economic, and social aspects can be implemented in Colombia to increase the scope of E-Commerce.

Justification

This research is carried out to contribute to the growth of E-Commerce in Colombia based on the information taken from the evolution of a developed country. With this comparison, the reasons for the lagged development in Colombia with respect to the evolution of Germany's E-Commerce market are analyzed, especially employed strategies as well as the economic, cultural, and regulatory aspects. This analysis is conducted to identify potential measures to be implemented in Colombia to obtain a larger reach of E-Commerce at a national and international level. The development of the countries is not the same and there are internal factors that can influence the growth of E-Commerce. However, there are social and regulatory aspects that could be implemented in the Colombian E-Commerce based on experiences with the German system.

E-Commerce has become a global trend and is an indispensable tool for the growth of a country's economy in today's business world. Therefore, E-Commerce represents an integral part of future business activities both regional and worldwide. Consequently, E-Commerce is essential for conducting international business, which relates well to the pursued undergraduate degree. Furthermore, this research is consistent with the degree program as it provides the opportunity to learn about two countries with different economic, social, and political aspects.

THEORETICAL AND METHODOLOGICAL FRAMEWORK

Theoretical Framework

To carry out a comparison study about E-Commerce in different countries, it is essential to highlight some aspects regarding their origin, arrival of new technology, evolution, and growth of the market as well as socioeconomic aspects and legal foundations. These factors, which help the understanding of this phenomenon that has revolutionized the economy around the world, will be contextualized in this research based on the concept of systemic competitiveness.

The concept of systemic competitiveness constitutes a frame of reference for industrialized and developing countries alike and arises from the need to have an enabling environment that allows successfully facing the challenges posed by globalization. For the competitiveness of a country, there are technological, productive, operational, and administrative aspects. Consequently, it is possible to distinguish approaches using the systemic competitiveness model that allows to identify an interaction of four economic and social levels of a country or region: meta, macro, meso and micro levels (Esser K, 1996). A successful country establishes a productive integration of these levels to reach high systemic competitiveness.

The meta level refers to socio-cultural factors with the focus on integration of fragmented parts of the society. A well-structured society forms the basis for fulfilling various requirements of social, ecological, or technical character and achieving them together in the interest of various societal participants. A key factor here is good governance and industrial competitiveness. This level is constituted by the patterns of political, legal, and economic organization, which are focusing on development and the competitive structure of the society. Additionally, it includes the basic institutional conditions, the basic consensus of industrial development, and competitive integration in world markets.

The macro level is composed of stable macroeconomic conditions achieved by political decisions, particularly a realistic exchange rate policy and a trade policy that stimulates local industry. This level is responsible for creating an effective competition framework, which exerts pressure on companies to increase their productivity internationally. The macro level contains budgetary, monetary, and fiscal policies.

The meso level refers to political decisions and policies that support the development of infrastructure, education, technology, and labor relations. Key policies include import and export regulations along with the set-up of the environmental structure. These policies form a basis for the country to generate innovation and economic growth. Among the main agents of

these policies are the state, business chambers, trade union organizations, research and training centers, as well as national and international cooperation agencies.

The micro level refers to the effectiveness of the technical and organizational learning processes at the company level, with the effective management of technology being the necessary condition for the continuous innovation of products and processes. Competitiveness at the micro level is based on company strategies that include effective change management and interaction with suppliers, producers, and customers, where learning through strategic interactions is key in the innovation process, especially when dynamic competitive advantages are established.

State of the Art

In the following, previous work related to the study conducted in this thesis are presented and relevant topics are briefly highlighted.

In their study “Factors influencing E-Commerce development: implications for the developing countries”, Kabango and Asa (2015), investigated “*the most relevant factors that need to be considered to support the advancement of E-Commerce in developing countries*” and concluded that online consumers in developing countries face security and privacy issues due to the lack of adequate digital infrastructure. To come to this conclusion, they based their analysis on four categories: security and privacy, trust and loyalty, accessibility and awareness, as well as quality and benefits.

Koziol (2015) evaluated indicators that positively influence the success of an online retailer in her thesis “Factors for success in E-Commerce - trends and opportunities for online traders”. Based on "success factors" like customer acquisition, website design, payment methods, shipping, and delivery, it was concluded that online stores must continuously evolve to be competitive. Furthermore, websites need to be user-friendly and provide credibility to the customer. As an important result, the implementation of various payment methods is a crucial factor for the advancement of online trade.

In the paper "Ecommerce in Colombia: exploding opportunities?", Beck and Villegas (2015), worked on identifying relevant theoretical and business aspects that have affected the growth of E-Commerce in Colombia based on the information of different official sources and reports, which helped to determine the reasons for its lagged development. The authors concluded that the bad infrastructure is one of the main causes, because it adversely affects the logistics and fast deliveries in the country. Among others, the low level of banking

connectivity caused by high taxes for micropayments is further highlighted as another important reason for the delayed evolution of E-Commerce in Colombia.

Rules, barriers, and challenges related to the E-Commerce in Colombia and Latin America are the topic of Ferrari's thesis "E-Commerce en Colombia: barreras y desafios de la actualidad" (2017). Based on the four fundamental factors infrastructure, technology implementation, regulatory framework, and cultural changes, it was concluded that Colombia faces challenges with connectivity and internet access, the existence of excessive withholdings on the so-called "micropayments", as well as the lack of technicians and professionals, who have the capabilities or education to work in information and telecommunication technologies.

Villate, Saldaña and Logreira (2019) wrote in their thesis "Obstaculos que presenta el comercio electrónico en Colombia" about measures that could be implemented to eliminate obstacles that Colombia faces in the E-Commerce sector. Based on a descriptive research using a legal disciplinary approach, some characteristics were identified that acted as obstacles such as high taxes for online payments, lack of funding for technology projects, and low supply of professionals in careers related to. This research concluded that some of the measures that could be implemented is that Colombia should reduce the tax made to micropayments in order to encourage the use of E-Commerce and train more personal, who can participate in the development of new technologies.

Campos (2019) wrote in his thesis "Análisis del e-commerce en colombia y retos logísticos para este sector" about the growth of the E-Commerce in Colombia and the factors imposing barriers on its further evolution. Based on official reports by the Colombian Chamber of Electronic Commerce, it was concluded that the E-Commerce in Colombia has shown a growing trend over the last years, but faces some logistical challenges that have to be overcome such as transaction speed, delivery options, delivery guarantee, and parcel delivery times.

In terms of systemic competitiveness, Cabezas and Reyes (2017) published their thesis "Factores críticos para la competitividad colombiana: desde la cara de la competitividad sistémica". In this work, they analyzed different factors from the perspective of systemic competitiveness in order to determine the causes that negatively affect the development of Colombia. This research concludes that Colombia must not only improve economic aspects, but especially political actions need to be taken, because corruption and low investments into technology and education are main factors negatively contributing to the current state of the country and its economy.

The publications presented above supplement the analysis conducted in this investigation as they describe factors of E-Commerce and related topics, especially in Colombia. However, they do not include a comparative analysis of Colombia with a developed country such as Germany, which yields similar results from a different point of view.

Methodological Framework

This study employs the mixed method, which is the combination of a qualitative and quantitative approach to collect and analyze data (Hernández-Sampieri, 2014). Specifically, this approach contains the collection of qualitative data that is followed by the collection of quantitative data to validate the findings and simultaneously provides explanations of the reported results that may not be obtained from an individual research method. As the topic of E-Commerce and contributing factors requires the analysis of qualitative differences between the considered countries along with a comparison of relevant data, a mixed method approach is the natural selection for the methodology of this thesis. In the mixed method, quantitative and qualitative data are collected, analyzed, and linked in the same study in a series of investigations to answer research questions of the problem statement (Creswell, 2009). The gathered data of both methods are integrated into the presentation of the comparative analysis.

This study is a trend longitudinal investigation, which compares different aspects of a research over time. In this thesis, the changes in the E-Commerce sector of each selected country are analyzed from the beginning of 2000 until 2019 as official data are available for this period and the effects of different aspects can be evaluated to identify shortcomings. Trends resulting of the ongoing COVID-19 pandemic are not included into the comparative analysis because of the unavailability of complete data and unsure long-term economic tendencies. Furthermore, developments due to the pandemic result of external factors and cannot be attributed to political actions supporting the growth of E-Commerce.

For the qualitative phase, data is collected, in which the evolution of E-Commerce of both countries is analyzed. This qualitative approach focuses mainly on the description of observable facts of a certain complexity that are not numerically quantifiable. Furthermore, it adds more subjective and comprehensive aspects regarding the shortcomings and lag of E-Commerce in Colombia to the study. Examples of qualitative analysis in this thesis are the comparison of the legal framework of both countries as well as aspects regarding historical political and technological developments such as the arrival of marketplaces, digital

infrastructure, and agencies of the government, which support the growth of E-commerce in both countries.

In the quantitative phase, the main phenomena related to the growth of E-Commerce are identified, where key data and statistical figures are gathered to provide a basis for an appropriate comparison, which allows to generalize the results in the last phase. Quantitative data are collected to describe not only the economic development, but also depict topics related to infrastructure and society such as banking penetration, internet access, and education level.

For data collection, secondary digital sources are taken from different documents such as books, scientific articles, reports from financial institutions, as well as entities in charge of monitoring the economy and trends of E-Commerce such as the European Commission, the Colombian Chamber of Electronic Commerce and also websites of national and international organizations related to E-Commerce such as the World Bank, Statista, Organization For Economic Cooperation and Development (OECD), and Euromonitor among others.

Thanks to this collection of data using the mixed method, the main obstacles that have been an impediment to the growth of E-Commerce in Colombia will be presented. Additionally, this study provides a basis for further research related to E-Commerce in developing countries, as shortcomings can be potentially transferred.

The methodology has limitations in terms of the availability of databases providing the data to directly correlate certain aspects with their influence on the development of E-Commerce. While this thesis includes relevant data to describe the phenomenon of E-Commerce on a larger scale, surveys directly investigating effects of concrete aspects on online trade are often not publicly available. In a similar context, although social aspects definitely play an important role for the economic development, a direct correlation between various of these aspects and E-Commerce is difficult to establish. For example, even though there is a high rate of perception of corruption in Colombia, it is not clear if it has played a role in the development of E-Commerce. In addition, an impact on E-Commerce cannot be attributed to discrimination or related topics in straightforward manner.

THE E-COMMERCE IN COLOMBIA AND GERMANY

In this section, the development of E-Commerce in both Colombia and Germany are introduced. In this context, the evolution of the E-Commerce in each country is described along with laws applicable to the field of E-Commerce. Furthermore, relevant factors contributing to E-Commerce are presented for both countries.

The E-Commerce in Colombia

Evolution

In June 1994, the internet came to Colombia through IBM's Bitnet in a joint effort between private as well as state universities in the country and was supported by the Colombian Institute for the Promotion of Higher Education ICFES and TELECOM (Universidad de los Andes, 2018). At the end of the 90's, the banking sector and its ACH Colombia/Asobancaria union also got involved in taking advantage of the internet and its possibilities to contact their entities and interact with customers and businesses to obtain more purchase and payment facilities (ACH Colombia, 2020).

Through the ministry of communications, the Colombian government began to manage a Colombian portal in 2000 that allowed public entities to connect with each other and offered services to citizens such as carrying out online procedures, filing claims, and finding tenders. Between 2000 and 2004, large national brands focused on working in the E-Commerce thanks to the example of many international businesses that were already conducting online trade.

For example, the marketplace *Mercado Libre* arrived in Colombia in 2000 and came to contribute to the process of digital transformation and development of the Colombian E-Commerce ecosystem. "Pagos en línea", today known as PayU, arrived in Colombia in 2002. PayU is an online payment platform specialized in creating fast and simple payment processes for merchants and buyers with maximum anti-fraud security (PayU, 2017). In 2005, ACH Colombia developed the PSE ("Pagos en línea" - Electronic Service Provider), which is a provision of the payment button service. It is a centralized system that allows companies and businesses to offer users and customers the possibility of making payments and purchases online, accessing the resources that are available in a financial institution (ACH Colombia, 2020)

In 2008, due to the economic growth that E-Commerce represented for the country, the Colombian Chamber of Electronic Commerce (CCCE) was born in order to regulate related businesses (CCCE, 2020).

However, not only the entry of new companies and the variety of the offers have made online sales grow, but also promotional activities, different payment options (which include payment on delivery), and the feeling of security in financial transactions through electronic platforms have had a positive effect on E-Commerce over the last 10 years. Since then, Colombia's E-Commerce has been constantly growing thanks to the implemented new technologies. Online stores, online platforms, expansion of new online payment systems, and specialized agencies are the protagonists of this growing industry.

According to a study conducted by CCCE (2019), the E-Commerce represented 1.5% of the national GDP in 2019. The total of digital transactions more than tripled from 2014 to 2017 as shown in Figure 1. In 2017 the total value of transactions through the digital channel was 51,2 trillion pesos, of which 30% corresponded to sales of E-Commerce products and services and 70% related to revenue collections such as taxes and invoices, adding up to a total of almost 88 million transactions.

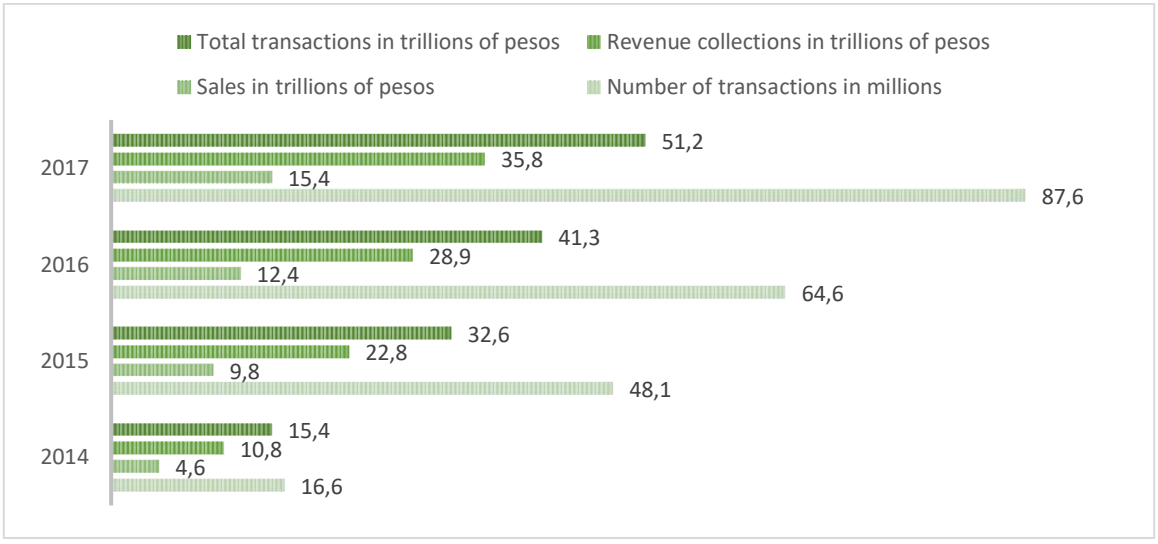

Figure 1 Digital transactions in Colombia (Observatorio eCommerce, 2017; BlackSip, 2019).

According to Euromonitor International (2019), the retail sales in Colombia have increased their total value exponentially from $471 (US million) to $5,205 (US million) since 2013. The leading categories in Colombian E-Commerce are tourism, fashion, multimedia products and household items. Furthermore, a report of BlackSip shows that the food and

drinks category has been positioning as one of the leading categories with the best growth projection for the upcoming years. The most popular method for paying online are PSE, mercado pago, credit card, bank electronic transfer, and cash payment through business such as Efecty and Sured (BlackSip, 2019).

Since 2015, the E-Commerce in Colombia has had a growth trend, going from 3,045 million to 7,680 million US-Dollars in 2019 (Tejeda, 2020) and the growth of online transactions in the banking went from 46% in 2017 to 52% in 2018 (CredibanCo, 2019).

Legal Framework

Within this context, it is necessary to consider the legal framework, norms and other special contexts that regulate or have effects on Colombian E-Commerce (Observatorio eCommerce, 2018). The most relevant jurisprudence and legal provisions of E-Commerce in Colombia are presented in Table 1.

Law 527 of 1999	This law establishes the "principle of functional equivalence" between the electronic signature and the autograph, and between data messages and written documents. It additionally constitutes a series of rules for the certification of digital signatures and creates the certification entities (MinTic, 1999).
Law 633 of 2000 Art. 91	The article 91 states that all web pages and internet sites originating in Colombia, operating on the internet and whose economic activity has a commercial, financial or service provision nature, must be registered in the Mercantile Registry and provide the National Tax and Customs Office (DIAN) with the information that is considered relevant.
Law 1273 of 2009	Article fifteen (15) of the Political Constitution of Colombia (1991) ensures the right of personal and family privacy and the protection of personal data, essential for the trust of citizens in E-Commerce, through the fundamental right of "habeas data".
Law 962 of 2005 Art. 26	Rationalization of administrative procedures and procedures of state agencies and entities and of individuals who exercise public functions or provide public services. This law regulates the management of administrative procedures where the use and management of the electronic invoice is stipulated, which consists of a data package that has legal validity so it can be issued, accepted and filed as long as it complies with all the legal requirements and its authenticity is guaranteed.
Law §1480 of 2011	The Consumer Statute, Law §1480 of 2011, establishes a special chapter for the protection of E-Commerce consumers (Cadena, 2018). This norm establishes obligations to suppliers and vendors, located in Colombian territory, who offer their goods and services through electronic means such as information (identification of the supplier, characteristics of the good, available means of payment), duty to keep information, security mechanisms, electronic mechanisms for receiving requests, suggestions and claims, information on the delivery of goods. Also, according to the Consumer Statute, Law §1480 of 2011, the consumer has the right of withdrawal for distance contracts following

the article 47, the consumer has the statutory right to revoke a contract within a period of five (5) days (Cadena, 2018). Regarding the defense of the electronic consumer, the Consumer Statute establishes the figures of the right of withdrawal and the reversal of payment.

Table 1: Most relevant jurisprudence and doctrine of E-Commerce in Colombia. Source: author's own elaboration.

Relevant Aspects Regarding E-Commerce

Colombia is ranked number 88 in terms of broadband internet on world scale, and the average recorded fixed internet download speed is about 11.5 megabits per second (Mbps) (MinTiC, 2019). However, Colombia faces still challenges to increase the average speed of the internet.

On the other hand, the internet connectivity and penetration rate has increased in Colombia. In 2018, about 65% of the Colombian population had access to the internet (Statista, 2019). About 35% of the population are offline. According to a report from the National Administrative Department of Statistics (DANE, 2019, p. 8),

> 50.7% of households without internet named the high cost as the main reason for not having an internet connection, which was followed by 27.6% considering it unnecessary. Other given reasons were the absence of coverage in the area 7.7%, people who do not know how to use it 7.2%, and the lack of adequate devices to access the internet 6.8% [Author's translation].

The social inequality is the root cause of these differences and it is the main reason why people have unequal access to those valued resources. According to a report of The World Bank (2018), Colombia is one of the most inequal countries in Latin America with a Gini index of 50.4. This impacts not just the access to internet, but also reduces the possibility to participate in E-Commerce as devices are expensive and low income implies low spending power. Furthermore, an adequate registered place to live is the basis for deliveries of products purchased online, which also hinders participation in many cases.

In 2010, the "Plan Vive Colombia digital" was created to give the country a technological advance through the massification of internet distribution and the development of the national digital ecosystem. The best known and most used connections are: xDSL, coaxial cable and fiber optics (MinTic, 2017). The implementation of fiber optics has been accelerating in the last years. According to a report of OECD published by Statista, Colombia is in 30th place in the country ranking, with a fiber optic share of around 13.8% (Statista, 2019).

In this context, the geography of Colombia plays an important role. Colombia's geographical conditions make it difficult for goods to move around and thus, delay delivery

promises, which generates a new level of mistrust of E-Commerce users. Many times, delays and lost deliveries relate to the topographic difficulties of the areas to which the dispatches are made. Also, lack of railways and roads in poor conditions hinder logistics and shipping of online purchases. According to The World Bank collection of development indicators, "t*he quality of trade and transport-related infrastructure"* was reported at 2.94 of 5.0 in 2018 (The World Bank, 2018).

Education is one of the features that most influences the economic development. On the one hand, education helps to participate in different markets and sectors requiring at least basic knowledge about the proper use of technical devices and the internet, being the basis for conducting online purchases, payments, or sales procedures. On the other hand, modern and innovative sectors such as E-Commerce require well-trained personnel to work on technical solutions. In Colombia, about 54% of adults between the ages of 25 and 64 have completed secondary education and only 22% of Colombians have a university degree (OECD, 2020). This lack of education continues to be a challenge for the country since this is an important factor for the country's economic growth.

According to a study of Unisys, 89% of buyers are extremely or very concerned about the possibility of third parties accessing and using their credit card information (Unisys, 2020). A report of Colombia National Police (2019), shows that the most reported incidents were phishing cases with 42%, followed by identity theft with 28%, sending malware with 14%, and fraud related to online payment methods with 16%. However, the level of fraud in Colombia is 0.45%, which means that losses from fraud and failed financial transactions in E-Commerce in Colombia are minimal (MinTic, 2019).

Another important factor is the banking penetration. Compared to a decade ago, where only 57.3% of the Colombian adults had access to a bank account, 82.5% of the adult population owned a bank account in 2019. The remaining 17.5% relate to low-income population groups and rural areas with the least access to financial services (Superintendecia financiera de Colombia, 2019). The World Bank indicates a lower percentage of bank account ownership but confirms the increasing tendency (The World Bank, 2018).

The E-Commerce in Germany

Evolution

Germany is the second largest mature E-Commerce market in Europe and the fifth largest E-Commerce market in the world (eMarketer, 2019).

The internet came to Germany in 1984 (Zorn, 2014) and its commercialization began mainly with the privatization of a project of EUnet in Dortmund in 1992 (Dortmund, 2017). After the official start of BTX Digital in 1993, many other banks and savings banks also introduced online banking (Telekom, 2014), taking advantage of the internet and its possibilities to contact their entities and interact with customers and businesses to obtain more purchase and payment facilities.

At the end of the 90s, different electronic market platforms began to operate thanks to the good reception of the internet service. The marketplace Amazon.de arrived in Germany in 1998 (Amazon, 2020) and one year later, in 1999, "Alando" came to Germany, which is known as eBay today (eBay, 2020). Both marketplaces contributed to the process of digital transformation and development of the German E-Commerce ecosystem.

PayPal arrived in Germany in 2004 as a payment button on eBay and supported buyers and retailers as a convenient payment method for online shopping. In 2015, PayPal brought into action a payment system through debit and credits cards. This option gave PayPal more coverage and more acceptance by the German online shoppers. (PayPal, 2019).

Since then, these electronic platforms have had a great impact in the country. E-Commerce began to grow steadily and with considerable growth rates. In Germany, more and more people began to buy larger numbers of products online and new payment methods as well as new markets were emerging in the country.

The share of E-commerce in retail sales reaches 12.2% according to the data of in 2018 (Destatis, 2020). The German online trade, specifically in the B2C channel, has increased in the last five years. The B2C E-Commerce turnover in Germany, including goods and services, generated sales of 57.8 billion euros, meaning an increase of 44.9% compared to 2015 (HDE, 2019). New offers, better services and greater demand among age groups are the reason for this increase.

Among the leading categories in German E-Commerce are tourism, fashion, electronic products as well as household items and the most popular method for paying online are PayPal, by invoice, debit or credit card, as well as bank electronic payment (Statista, 2018).

Legal Framework

The most relevant jurisprudence and legal provisions of E-Commerce in Germany are presented in Table 2.

The Telemedia Act (Telemediengesetz TMG)	The Telemedia Act (TMG) is one of the central regulations of internet law and regulates the electronic information and communication services in Germany as long as these are not already covered by the telecommunications laws. Among other things, it contains central regulations for internet law, such as websites, web shops, internet radio, and streaming (Bundesamt für Justiz, 2007).
Right of withdrawal	According to §312g of the German Civil Code (BGB), "*the consumer has the right of withdrawal for distance contracts following §355 BGB"* (Bundesamt für Justiz, 2007). The consumer has the statutory right to revoke a contract within a period of fourteen (14) days without giving any reason. Legal consequences of revocation according to § 357 BGB are for example compensation for loss of value of the goods, return costs, and reverse transaction. In the provision of §312g (2) (BGB) some exceptions to the right of withdrawal are standardized.
Information obligations in the consumer contract	According to §312a (2) of the German Civil Code (BGB), the entrepreneur is obligated to provide the consumer with the information in a clear and understandable manner before submitting his contractual declaration. Anyone who offers a service on the internet must always have certain information available in a clearly visible place on their website (so-called provider identification according to the TMG or "imprint obligation").
Conclusion of contract via internet according to the signature law (SigG)	Contracts can also be legally concluded via internet (by Email or via an online shop). However, contracts that are subject to certain formal requirements by law (written form, certification, notarial certification) cannot be easily concluded online. Since mid-2001, it has been possible to at least comply with the legally required written form, usually by using a qualified digital signature according to the Signature Act (so-called "electronic form") (Bundesgesetzblatt, 2001).
The price indication ordinance (Die Preisangabenverordnung PAngV)	Anyone who commercially offers goods or services to end consumers or who advertises as a provider is obliged to state the price including sales tax and all other price components according to §1 of the Price Indication Ordinance (PAngV). The price information must be clearly associated with the goods or services or the advertising; they must be easily identifiable and clearly legible. If individual prices are broken down, for example for goods that consist of several individual parts, each individual price must include sales tax and other price components. The total price of all individual parts should be clearly highlighted (Bundesamt für Justiz).

The German Ordinance on Service Providers' Duty (DL-InfoV)	The Service Information Obligation Ordinance (DL-InfoV), a legal regulation that came into force on May 17th, 2010, regulates what information about himself each provider of a service - also as a trader and as a freelancer - must share with his business partners. Much of the mandatory information provided by the DL-InfoV is the same as the mandatory information in accordance with §5 of the Telemedia Act, which had to be included into websites before the (DL-InfoV) came into force. The new regulation provides for extensive information obligations on the part of the service provider to the recipient of the service, which is intended to ensure more transparency and protection (Pickel, 2020).

Table 2: Most relevant jurisprudence and doctrine of E-Commerce in Germany. Source: author's own elaboration.

Additionally, Trusted Shops is a German company which offers the seal of quality for European online stores and is responsible for protecting consumer purchases or orders in any online store. Showing a quality seal is officially recommended for online stores in Germany as it provides customers with security when shopping online (Trusted Shops, 2020).

Relevant Aspects Regarding E-Commerce

Germany is ranked number 33 in terms of broadband internet on the world scale and the recorded average fixed internet download speed is about 23 megabits per second (Mbps). In terms of penetration, about 86% of the German population had access to internet in 2018 (Statista, 2019). According to a report of D21 (2019), 14% of the population were offline, where the reasons were described as follows:

> 37% of households without internet considering this as "too difficult to use" as the main reason for not having an internet connection, which was followed by 34% considering it unnecessary. In addition, 23% of the offline users are satisfied with traditional media, while 6% stated that children and acquaintances do everything they need on the Internet. Most of the people who are offline are over 65 years of age [Author's translation].

The German government has set different objectives and reveals that multiple levels of digital infrastructure in Germany are in various stages of development. Germany is far behind in comparison to other countries of the European Union and worldwide in terms of broadband connections to businesses and homes. Similar to Colombia, the best known and most used connections are DSL, VDSL, coaxial cable and fiber optics (M.net, 2020). According to a report of OCDE, Germany is in 34th place in the country ranking, with a fiber optic share of around 4.1% (Statista, 2019).

Germany has a highly developed infrastructure compared to Colombia. The excellent road transport network is one of the great advantages of Germany compared to other countries. This is an important factor to make this country attractive to foreign investors as an economic location for their companies. Railways and roads in good condition facilitate logistics and shipments without delay of online purchases. According to the World Bank collection of development indicators, the quality of trade and transport-related infrastructure was reported at 4.20 of 5.0 in 2018 (The World Bank, 2018).

In Germany, about 87% of adults between the ages of 25 and 64 have completed secondary education. Only 32% of Germans have a university degree, however, Germany has a prominent vocational education system resulting in a large rate of qualified personnel, which helps keeping a low unemployment rate (OECD, 2020). Free and widespread access to education is an example of equality of this country. According to a report of The World Bank (2018), Germany has a Gini index of 31.9, with which Germany is one of the most equal countries in the world. In Germany, there is no specific inhibition on participation in E-Commerce due to social inequality. Consequently, there is no noteworthy difference between E-Commerce and other forms of trade.

Education is the basis for Germany's technology-oriented export economy, which contributes significantly to the GDP, because a lot of well-trained personnel is necessary to uphold the technological quality and innovation required for successful products. This includes many conceptual jobs requiring academic degrees and ranges to production personnel undergoing vocational training.

Germany also suffers from other cyber-attacks. The federal criminal police office in Germany gave a report on cybercrime for the year 2018 (Bundeskriminalamt, 2018), where 87,106 cases of cybercrime were listed. Of these, 76.1% related to computer fraud such as payments with stolen credit cards or other credit fraud conducted via computers. 8762 cases were reported in the field of identity theft or phishing in online banking, where the latter accumulated to a total of 723. Other categories include distribution of malware using falsified data (9.8%) and computer sabotage (3.3%), which contains denial of service attacks or distribution of trojans.

Since 2016, every citizen has the right to open a bank account in Germany, which was a formal update to a law originally introduced in 1909 containing a similar right. Banks are legally required to accept any consumer regardless of their social status. In 2017, 99 % of the adult population had a bank account (Bundesregierung, 2020; The World Bank, 2018).

COMPARATIVE ANALYSIS UNDER THE ASSUMPTIONS OF SYSTEMIC COMPETITIVENESS

In the following, the previously gathered information is used to perform a comparative analysis of the E-Commerce in Colombia and Germany in order to identify reasons for the lagged evolution of Colombia. This analysis is supported by the method of systemic competitiveness as introduced in the section Theoretical Framework.

General Comparison

The E-Commerce has shown a significant growth in both countries. Colombia shows high increasing rates over the past five years that are superior to Germany's. When compared to Germany, the E-Commerce ratio is still lower, but Colombia's development remarkably advances, which can be attributed at least in part to the support of CCCE, an organization primarily serving the promotion of E-Commerce in Colombia. Such activities and organizations support the economy on the meso level.

On the macro level, the competitiveness of a country is defined with respect to the ability to increase the productivity of an economy. In terms of productivity and performance of an economy, the interpretation of the GDP is essential to analyze the relevant trends. If these economic activities pick up, it means that the unemployment tends to decline and the income rises, which could be seen in the German economy with a high GDP per capita and a low unemployment rate. On the other hand, the unemployment rate in Colombia averaged 9.71% (The World Bank, 2019), which is significantly larger. This factor directly affects the Colombian economy since funds, which are destined to invest in technologies, innovation, and infrastructures, are used to support political projects for the unemployed.

Comparison of Internet and Payment Methods

In both Colombia and Germany, the privatization of the internet simultaneously happened, which resulted of the world-wide set-up of the internet. First examples of typical applications of the internet such as marketplaces and at least partial online banking had their market entry in a similar time frame in both countries. Thus, the basic prerequisites for E-Commerce were given right at the beginning, which was also the basis for growth and development of online trade.

Briefly after the private internet came up, two major pioneers of E-Commerce entered the German market. Amazon and eBay generated a revolution with their business models, which contributed to the growth and recognition of the E-Commerce in Germany. Those companies

are the most successful and influential organizations, which continue contributing to the GDP, generating a positive impact on the economy of Germany. On the other hand, Mercado Libre exists in Colombia since the beginning of 2000. This marketplace is the largest in Latin America and the biggest player, which helped the Colombian E-Commerce industry to thrive. However, Amazon and eBay continue being the most significant marketplaces of E-Commerce, which represents a big part of the total sales conducted digitally in Germany and worldwide (European Ecommerce Association, 2019). Although Colombia had an early regional marketplace with Mercado Libre, the big international players in E-Commerce helped the German integration into the world market right from the beginning and thus, generated larger markets and revenue (Ecommerce News, 2018). Besides providing the right setting for attracting big players of E-Commerce to invest into Germany, the government also enabled mid-size companies to start setting up their online shops and start-up companies. With these measures, E-Commerce was introduced as an important factor on the micro level.

Furthermore, the payment methods play a crucial role for the growth of E-Commerce in a country. Apart from the classic payment methods such as credit card, direct debit, and prepayment, there are various methods that have been developed for online trading in both countries. For example, PayPal came to Germany as a payment method since the beginning of 2000, which facilitated the online purchases for people without a credit card and introduced some customer protection mechanisms. Similar points applied for the Colombian payment system PSE. Early adoption to PayPal's payment service as one of the largest services worldwide enabled German companies to operate worldwide in an easier manner, which especially helped smaller businesses to participate in E-Commerce. This can be considered an enabling factor on the micro level as the company's decisions to open an online business are impacted. In contrast, PSE is a regional payment system, which may have less impact on the micro level.

Although many online companies offer a wide range of payment methods, the modality of payments with a bank account is essential for the development of E-Commerce in a country. The population's access to a bank account has been significantly lower in Colombia when compared to Germany. While significantly more Colombians are integrated into the financial system than ten years ago (Superintendecia financiera de Colombia, 2019), enabling the whole population to own a bank account will further increase the participation of customers in E-Commerce. Furthermore, the unavailability of bank accounts and related payment methods in a comparatively large part of the population may be a reason for the delayed growth of E-Commerce in Colombia with respect to Germany.

Sources further identify high taxes on micropayments as one main obstacle for E-Commerce in Colombia (Beck & Behar Villegas, 2015; Villate, Saldaña, & Logreira, 2019; Zamora, 2017). Although the general VAT in both Colombia and Germany is 19%, the additional taxes of 4.314% may impact the acceptance and growth of E-Commerce in direct comparison (Observatorio eCommerce, 2016). Reducing these additional taxes may benefit the expansion of Colombian E-Commerce. As another impact on the macro level, enabling the whole population to own a bank account will further aid the access to online trade.

Analysis of the Infrastructure

In Colombia, there is a general lag in the infrastructure of highways and railways compared to Germany. Transportation infrastructure investments in Colombia are very low, especially on highways. For this reason, logistics can be considered as one of the main obstacles for the growth of the Colombian E-Commerce market, since key aspects relate to speed and reliability of deliveries, both local and international. Due to the current state of the infrastructure, practices such as same-day delivery, free shipping, or free returns among others are difficult to implement, which can affect E-Commerce. In contrast, Germany has a highly developed infrastructure. The road transport network is one of the best comparative advantages of Germany, which is also complemented by a dense rail network and regional airports.

Consequently, the good transport infrastructure facilitates the speed of deliveries and aids worldwide logistics. "*In 2018, Germany was ranked the leading logistics market according to the logistics performance index with an index score of 4*.20*"* while Colombia was ranked with an index score of 2.94 (The World Bank, 2018, p. 1). Based on this index, one can see that Colombia is less competitive in the logistics sector. The competitiveness of Germany is directly related to the provision and quality of its infrastructure.

Policies related to infrastructure are some key activities on the meso level. For Colombia to develop its competitive advantages, it is important to have an integrated infrastructure development that ranges from a connected road network in good conditions to a comprehensive and modern telecommunications system as well as coverage and diversification of its energy system.

In terms of the digital infrastructure, Colombia and Germany are very similar when considering used hardware interfaces and protocols. However, broadband connectivity and penetration of internet access are very different in both countries. In Germany, almost the entire population has access to internet and broadband speed (Statista, 2019). This makes the

country more competitive since these factors are fundamental to support the growth of E-Commerce. Although Colombia continues to experience some difficulties with the internet connectivity as only about two thirds of the population have access to the internet (Statista, 2019), there are programs the government launched to improve internet access.

An example is the initiative “vive Colombia” that has been seeking to make the country take a technologically advance through the increase in internet speed and the expansion of fiber optics, which supports the development of the national digital ecosystem. With the help of this program and the Colombian Chamber of E-Commerce, the penetration of internet access as well as the broadband speed have improved.

Nevertheless, the good availability of broadband internet to a large part of the population is one of the primary factors of the German lead in E-Commerce with respect to Colombia. While actions towards improving the internet penetration in Colombia are in progress, these policies on the meso level are one reason for reducing the lag in development and require fortification to close the gap further.

Comparison of the Legal Framework

To set an environment for the society to accept and participate in E-Commerce, a coherent legal framework focusing on customer rights and related topics is of uttermost importance. While this social aspect suggests a contribution to the meta level, the legal framework strongly interacts with the macro level, where relevant judicial and political actions towards economic regulations are taken. In this context, the relevant laws in this field are compared in the following.

In Colombia and Germany, the right of withdrawal is established, which means that the consumer has the right to return a product in both countries. However, in Colombia, the maximum time to complete a return is five (5) days (Cadena, 2018) in contrast to Germany, where the consumer has a period of fourteen (14) days to withdraw (Pickel, 2020). A right of withdrawal of only five (5) days can complicate the situation for customers as delivery times may influence the return periods, potentially allowing the sellers to reject returns. This is a unilateral obligation that can affect the customers.

Colombia and Germany have a regulatory framework for E-Commerce to protect the rights of the consumer and the entrepreneur. This regulatory framework includes laws about the duties and obligations of merchants as well as consumer protection, among others. Although they are countries with different economical and judicial cultures and traditions,

their regulations in the E-Commerce sector are very similar, which protect citizens offering guarantees and establishing limits.

Examples are the communications regulation commission, that promotes free and fair competition and investment in the information and communication technologies sector, as well as the cybersecurity regulations, the fundamental right to the protection of personal data, and the right to electronic signature, where the latter is given a legal recognition and is considered admissible as evidence. This means that an administrative or a judicial action may be based on this digital signature.

After analysis of the legal framework of E-Commerce in both countries, it can be determined that there exist similar rules relating to protection of the customer. Consequently, there is no significant difference justifying a lagged development of Colombia with respect to Germany. Note that the longer period of withdrawal in Germany may have led to a larger acceptance of E-Commerce earlier on. Political actions on the meta level may help to increase the societal acceptance of E-Commerce in Colombia. Micro level activities such as the German “trusted shops” initiative, which is used by many shops to protect consumer rights, may further support the customer’s trust into E-Commerce. In this context, it should be noted that neither Germany nor Colombia experience a significant problem with criminality in the E-Commerce sector.

Analysis of Education and Social Aspects

On the meso level, education is also a very important factor for the growth of E-Commerce as labor productivity and innovation are strengthened by trained personnel. The education system in Colombia is one of the major problems that affects the economic development in Colombia. Lack of education leads to unemployment and poverty in contrast to Germany, where new technologies are implemented and beneficial solutions can be generated thanks to the assignment of educated personnel, helping the competitiveness of companies and the country. Furthermore, education helps to participate in different markets and sectors requiring at least basic knowledge about the proper use of technical devices and the internet, which allows the user to carry out sales procedures, payments, or online purchases.

The social differentiation in Colombia, for example the division of Colombian cities into six strata, implies the existence of social inequality. This can be also seen in a survey conducted by DANE (2019), where the high cost was the main reason for not having an internet connection. In 2018, Colombia was one of the most inequal countries in Latin

America with a Gini index of 50.4 (The World Bank, 2018). This comparative large value of the index, which indicates perfect equality with zero, shows the difficult situation faced by many citizens to meet their basic expenses for education, transportation, among others. Inequality also has a direct impact on the participation on E-Commerce as population with low income experiences difficulties accessing the internet due to the cost of devices and provider, but also the basic possibility to consume necessary goods is impaired. In contrast, Germany has a Gini index of 31.9 and finds itself among the 35 most equal countries in the world in 2018. Social inequality may be another factor for the lagged development of E-Commerce in Colombia as less people are able to participate in the market. Thus, taking political actions on the meta level would be beneficial to aid further growth of E-Commerce in Colombia.

CONCLUSION

During the analysis of both countries with different socioeconomics and political aspects using systemic competitiveness, it can be determined that Colombia experienced shortcomings that have negatively influenced the development of E-Commerce.

In the analysis, various main factors contributing to the lagged development of Colombia could be identified. The state of Colombian infrastructure can be considered the main obstacle because it influences both the internet-based ordering process and the delivery logistics. Improvements of the infrastructure can be directed to internet speed and availability as well as efficiency of the road and rail network for faster deliveries. Furthermore, the lack of trained personnel plays a significant role for the development of innovative E-Commerce.

In this respect, the lack of access to education and important infrastructure as well as limited access to internet due to the high costs are inhibiting factors, which are also a sign of inequality in the society. A factor related to this topic is also the bank account ownership, which is not well-spread throughout the population yet and serves as an entry point for E-Commerce. In addition, the high taxes on micropayments function as another inhibitor for further growth of E-Commerce.

In terms of systemic competitiveness, various suggestions for political acts can be given. On the meso level, political decisions should be taken that strengthen Colombia's infrastructure. From German E-Commerce it can be derived that an excellent infrastructure plays a significant role for fast logistics. The speed and accessibility of the internet among the population is another important factor, which should be addressed by political involvement. Improving the education to train experts in the digital field, but also to strengthen a broad education of the population is another lesson that can be learned from Germany. With the foundation of the CCCE and "Plan Vive Colombia digital", Colombia already has taken an important step towards organizing the future of E-Commerce. Further initiatives in this direction may aid the development of E-Commerce even more.

On the macro level, Colombia's budget should be planned to accommodate for the needs of investments into technology, infrastructure, and education, which are indispensable factors on the meso level that require funding. This is an example of how the levels of systemic competitiveness need to interact to achieve the best for a country. Furthermore, the taxes on micropayment should be reduced to support the attractiveness of E-Commerce. As another factor, the access to bank accounts should be enforced by politics, because the bank ownership is an enabling factor of E-Commerce. This is another take-away from the

comparison with Germany as basically everyone owns a bank account and thus, there were no barriers regarding usage of E-Commerce right from the beginning.

The entry of major international marketplaces and payment providers have been a strategical factor for the evolution of the E-Commerce in Germany. The arrival of similar marketplaces in Colombia could positively impact the economy. Especially the possibility to access a worldwide market is a major contributor to the growth of E-Commerce. It is of interest to attract international companies and aid the internationalization of Colombian E-Commerce companies. In addition, enabling the E-Commerce in Colombian businesses by helping them to integrate E-Commerce into their strategic planning and processes is another measure on the micro level.

On the meta level, reducing the inequality is a main factor as this correlates with broader education in the population and increases the number of participants in the E-Commerce. Especially a better distribution of wealth and income would help participation as poverty obviously implies lower spending power, but also impairs the access to E-Commerce due to the costs of internet access and required devices. Another positive effect of more equality would be improved living situations and the corresponding access to better infrastructure. This is another lesson to be learned from Germany, where the whole population has access to internet, registered housing, and a free education system. Furthermore, basically everyone below pension age also uses online shops.

Another factor to be considered is the acceptance of E-Commerce due to a withdrawal period of 14 days, which helped to convince many Germans that buying online is equally convenient as going to classical department stores. Additionally, the trusted shops initiative in Germany further increased the confidence of people when shopping in the internet. These aspects may be of interest to be employed in Colombia to increase the trust of the population into E-Commerce. Another societal topic to be considered is the circumstance that most Colombians have very low confidence when buying selling online even though the actual level of online fraud is very low. This may be improved by providing improved digital education, for example also including campaigns advertising the security of E-Commerce.

Applying a productive integration of the four different levels and taking the actions mentioned above, the systemic competitiveness of Colombia with respect to E-Commerce can be significantly improved.

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