

Illinois State University

ISU ReD: Research and eData

Theses and Dissertations

11-8-2020

Barriers And Drivers Influencing The Growth Of E-Commerce In Uzbekistan

Madinakhon Tursunboeva

Illinois State University, madina.tursunboeva@gmail.com

Follow this and additional works at: <https://ir.library.illinoisstate.edu/etd>



Part of the [Databases and Information Systems Commons](#), and the [Entrepreneurial and Small Business Operations Commons](#)

Recommended Citation

Tursunboeva, Madinakhon, "Barriers And Drivers Influencing The Growth Of E-Commerce In Uzbekistan" (2020). *Theses and Dissertations*. 1344.

<https://ir.library.illinoisstate.edu/etd/1344>

This Thesis is brought to you for free and open access by ISU ReD: Research and eData. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of ISU ReD: Research and eData. For more information, please contact ISURed@ilstu.edu.

BARRIERS AND DRIVERS INFLUENCING THE GROWTH OF E-COMMERCE IN UZBEKISTAN

MADINAKHON TURSUNBOEVA

58 Pages

Electronic commerce (e-commerce) has become a major retail channel for businesses in developed countries. However, it is still considered an innovation in developing countries. Specifically, e-commerce in Uzbekistan is in the early stages of emergence despite its advance in recent years in terms of Internet penetration, a strong retail sector, new national regulations, and a young population. The study aimed to identify barriers and drivers influencing e-commerce growth in Uzbekistan. A Delphi research design was utilized to answer the research questions of the study, which categorized and ranked factors that Uzbekistani entrepreneurs are facing when engaging in e-commerce processes. A focus group was established that consisted of entrepreneurs with direct experience of more than three years in Uzbekistani e-commerce market. Findings were analyzed to produce a list of barriers and drivers that were categorized and ranked by their importance.

KEYWORDS: e-commerce, Uzbekistan, barriers, drivers, developing country

BARRIERS AND DRIVERS INFLUENCING THE GROWTH
OF E-COMMERCE IN UZBEKISTAN

MADINAKHON TURSUNBOEVA

A Thesis Submitted in Partial
Fulfillment of the Requirements
for the Degree of

MASTER OF SCIENCE

Department of Technology

ILLINOIS STATE UNIVERSITY

2020

© 2020 Madinakhon Tursunboeva

BARRIERS AND DRIVERS INFLUENCING THE GROWTH
OF E-COMMERCE IN UZBEKISTAN

MADINAKHON TURSUNBOEVA

COMMITTEE MEMBERS:

Anu Gokhale, Chair

Chris Merrill

Klaus Schmidt

CONTENTS

	Page
TABLES	iv
FIGURES	v
CHAPTER I: INTRODUCTION	1
Background	1
Statement of the Problem	2
Purpose of the Study	2
Objective of the Study	2
Research Question	3
Independent and Dependent Variables	3
Definition of Terms	3
E-commerce	3
Barriers and Drivers	4
Entrepreneurs	4
Business models	5
CHAPTER II: LITERATURE REVIEW	6
Introduction	6
Uzbekistan	6
Population and Languages	6
Culture, Religion, Politics	6

Internet Use in Uzbekistan	7
Global E-commerce Barriers and Drivers	10
E-commerce barriers in the Russian Federation	12
E-commerce barriers in Kazakhstan	13
E-commerce barriers in Azerbaijan	13
Uzbek E-commerce Barriers and Drivers	15
The Delphi method	17
Trustworthiness	19
Synthesis of the Literature Review	20
CHAPTER III: RESEARCH METHODOLOGY	22
Research Design	22
Sampling Techniques and Sample Size Determination	24
Delphi Rounds Design	27
Sources and Collection of Data	29
Administration of Data Collection Instrument	30
Procedure for Processing Collected Data	31
CHAPTER IV: DATA ANALYSIS, FINDINGS AND DISCUSSION	33
Round 1: Results and Interpretation	33
Round 2: Results and Interpretation	38
Round 3: Results and Interpretation	41
CHAPTER V: CONCLUSION	45

Recommendations	46
Contributions	47
REFERENCES	49
APPENDIX A: SURVEY QUESTIONS	55

TABLES

Table	Page
1. Internet Measures and Population Comparison in Central Asian Countries for 2015 and 2018	9
2. Distribution of Participants by Job Title	27
3. Summarized Barriers from Round 1	35
4. Summarized Drivers from Round 1	37
5. Round 3 Q1 Results - Greatest to Least Challenging Barriers	42
6. Round 3 Q2 Results - Greatest to Least Challenging Drivers	43

FIGURES

Figure		Page
1.	Distribution of Participants by Business Type and Business Model	26
2.	Participants' Experience in Years	26
3.	Data collection timeline	29
4.	Round 2: Q1 - Results - Identified Barriers	40
5.	Round 2: Q2 - Results - Identified Drivers	40

CHAPTER I: INTRODUCTION

Background

Digital transformation is a fundamental concept of any modern economy that controls ongoing economic and social changes (Ibragimova et al., 2019). E-commerce has become a crucial part of this digital transformation and has become one of the most rapidly growing industries in the world (Jaehun & Normatov, 2010). Millions of people, businesses, devices, data and processes are now available online via business activities known as 'digital economy' (Ibragimova et al., 2019). E-commerce plays an integral role in this digital economy, which covers not only commercial activities but also the whole system of industrial relations (Mekhmonov & Temirkhanova, 2020).

Digital transformation and globalization change the culture of shopping. Every day more brick-and-mortar retailers are being replaced by online stores because of this dynamic (Bytyqi, 2020). In addition, advancement in Internet technologies continues to facilitate the growth of online shopping (Bytyqi, 2020). Thus, online shopping has become a significant part of the retail industry around the world, including most developed countries.

Developing countries however are struggling with e-commerce adoption (Jaehun & Normatov, 2010). Uzbekistan is one of these countries. In spite of its fast-growing economy and recent technological advances, Uzbekistan is still attempting to enhance e-Commerce. Some of these advances include, but are not limited to, Internet penetration, a stronger retail sector, and the implementation of new state regulations. A further advantage appears to be Uzbekistan's young population. Jaehun and Normatov (2010) stated that it is important to study e-commerce adoption in developing countries

like Uzbekistan because governments and businesses need a clearer understanding of e-commerce facilitators to design effective policies and strengthen positive enablers.

Statement of the Problem

The growth of the e-commerce industry in an emerging economy like Uzbekistan plays a vital role in the process of migrating from a developing to a developed country. This development is important because e-commerce enhances economic and social development in a country, and leads to gains in overall commercial productivity E-commerce can further lower the operating costs of businesses and enhance the level of domestic integration with international markets (Alyoubi, 2015). Thus, the problem of the proposed topic is to identify some challenges Uzbekistan faces when attempting to participate in e-commerce. The study further reviews potential benefits for sustainable e-commerce development in Uzbekistan.

Purpose of the Study

The purpose of this research is to investigate barriers and drivers in Uzbekistan that influence the participation of e-commerce entrepreneurs. The study will focus on the perception of the entrepreneurs.

Objective of the Study

The objective of the research is to identify existing barriers and drivers indigenous to Uzbekistan, and to rank them accordingly, using the Delphi method. The knowledge about existing influential factors along with their ranks will help decision makers in reducing the impact of the barriers and optimize the benefits derived from the drivers (Biswal & Maduli, 2017).

Research Question

1. What barriers and drivers exist in the Uzbek market for prospective entrepreneurs?
2. What factors should be addressed first in order to accelerate the growth of e-commerce in Uzbekistan?

Independent and Dependent Variables

The independent variables are barriers and drivers. The dependent variable is e-commerce growth in Uzbekistan.

Definition of Terms

E-commerce

Researchers and experts in e-business and e-commerce provide different definitions for the concept of e-commerce (Ibikunle, 2013). According to the World Trade Organization (WTO, 2020), e-commerce is defined as “the production, distribution, marketing, sale, or delivery of goods and services by electronic means”.

Turban et al. (2008) provides the following definitions from different perspectives:

- Communication perspective – products, services, delivery of information over telephone, computer network.
- Business perspective – technological applications for automation of business processes.
- Service perspective – a tool to reduce cost or improve quality of goods and services.
- Online perspective - an enabler for a favorable atmosphere for the transaction of products, services, delivery of information via Internet.

Taking into consideration the definitions mentioned above, the researcher operationalized e-commerce as:

1. A company that performs online retailing. This includes selling goods such as clothing, cosmetics, book, electronics, food, beverage.
2. A company that provides online services such as e-learning, online booking, food delivery or taxi services.
3. A company that provides IT solutions. This includes applications for asset or warehouse management, enterprise resource planning (ERP), payment systems, and any other business process optimization software.

Barriers and Drivers

In the context of this study, the following terms were operationalized:

- Barriers – an obstacle, a challenge, a bottleneck that prevents or blocks development of e-commerce.
- Drivers – a facilitator, a stimulator, or an opportunity that makes development of e-commerce easier.

Entrepreneurs

Merriam-Webster (n.d.) dictionary defines an entrepreneur as the one who organizes, manages, and assumes the risks of a business or enterprise. In this study, all participants were classified as entrepreneurs because they all engage in online businesses in Uzbekistan. This rationale can be justified by the fact that e-commerce in Uzbekistan is still in its early stages of development and therefore encounters a variety of challenges.

Business Models

Mekhmonov and Temirkhanova (2020) noted the following business models as popular in Uzbekistan:

- “Business to Business” (B2B). This includes auctions, tenders, electronic payment systems, insurance services.
- “Business to Consumer” (B2C). This includes online shopping, auctions, electronic payment systems, electronic employment.
- “State to Business” (G2B). This includes public procurements, statistical reporting, tax collection, customs payments.
- “State to Consumers” (G2C). This includes utilities payments and social payments.

The concept of e-commerce is proven around the world, however, the adoption of it by small and medium businesses (SMEs) is still low (Ramdansyah & Taufik, 2017). Therefore, there is a need to study what factors are preventing and factors that are driving the adoption of e-commerce by SMEs. Thus, this study was concentrated primarily on B2B and B2C businesses in Uzbekistan.

CHAPTER II: LITERATURE REVIEW

Introduction

Uzbekistan

Uzbekistan is a sovereign and landlocked country located in Central Asia. In 1991, Uzbekistan declared independence from the former Soviet Union. Uzbekistan comprises twelve provinces and one autonomous republic Karakalpakstan. Tashkent is the largest province and the capital of Uzbekistan.

Population and Languages

The total population of Uzbekistan has reached 34.48 million inhabitants in 2020 (Stat.uz, 2020). The official language is Uzbek. However, Russian is commonly spoken in the capital. According to the Central Intelligence Agency (CIA, 2020), the language statistics are as follows: Uzbek 74.3%, Russian 14.2%, Tajik 4.4%, other 7.1%. The English language is widely used among educated individuals in Uzbekistan, \ (PwC, 2016). Nevertheless, the English-speaking population is generally based in Tashkent.

Culture, Religion, Politics

Uzbekistan has a variety of ethnic groups, religions and cultures with a majority of Muslim Uzbeks. In 2017, the Central Intelligence Agency (CIA, 2020) estimated that Uzbeks constitute 83.8% of the population in Uzbekistan, followed by Tajik 4.8%, Kazakh 2.5%, Russian 2.3%, Karakalpak 2.2%, Tatar 1.5%, and other ethnicities comprise 4.4%. Regarding religion, the numbers look as follows: Muslim 88% (mostly Sunni), Eastern Orthodox 9%, other 3% (CIA, 2020).

The first president, Islam Karimov was elected in 1991 and continued the presidency until his death in 2016. The next and current elected president Shavkat

Mirziyoyev has taken some important steps to improve the country. Namely, he fulfilled a demand of United Nations human rights bodies by closing the Jaslyk prison and lifted the majority of bans and censorship of the Internet. He also removed currency restrictions and eased visa restrictions for visitors to Uzbekistan (Swerdlow, 2019).

Internet Use in Uzbekistan

The impact of the Internet growth worldwide is becoming visible in Uzbekistan with more users realizing the importance and potential of the digitalization of commerce. Digital platforms succeed on an international level and become the main business model for large corporations such as Airbnb, Alibaba, Amazon, eBay, Facebook, Uber (Bobokhujaev et al., 2020). Meanwhile, Internet penetration in Uzbekistan has grown from around 120,000 users in 2000 to over 18,000,000 in 2018. However, this is still only 55.2% of the total population (The World Bank, 2020). This growth demonstrates that the demand for Internet connectivity and accessibility is gradually increasing. In 2020, the mobile share of Internet traffic in Uzbekistan reached 44.1% of the total population, whereas desktop's share of internet traffic was 55.4% and tablet's share was 0.5% respectively (Kemp, 2020). The distribution of Internet traffic over these devices demonstrates that Uzbeks have multiple ways to stay connected with the online world. With the combined mobile connection of subscribers crossing the 25.14 million-mark, which is 76% of the total population (Kemp, 2020), Internet and broadband services are expected to grow through wireless communications. In Uzbekistan, the mobile Internet will stimulate the development of e-commerce, banking, and entertainment. In this regard, the President of the Republic of Uzbekistan issued a decree No. UP-5349 to further improve the field of information technology and

communications. This involved increasing the Internet speed and affordability of the service. The Ministry for the Development of Information Technologies and Communications (MITC) of the Republic of Uzbekistan has launched a massive project and increased Internet speed from 64.2 Mbps to 1200 Mbps in 2018 and remained the same through 2020 (MITC, 2020).

In order to better understand the Internet situation in Uzbekistan, it is important to evaluate some Internet measures with other Central Asian countries. The World Bank (2020) provides such measures with respect to individuals using the Internet and secure Internet servers, which is responsible for secured Internet transactions. The researcher decided to draw a comparison of Internet measures between Uzbekistan, Kazakhstan, Azerbaijan, and Russian Federation. These countries were chosen due to the geographic location and common history of being part of the Soviet Union. According to The World Bank (2020), Uzbekistan is behind these nearby countries in terms of Internet usage and secure Internet servers. However, Internet usage in Uzbekistan has grown by 12% during 2015 and 2018, which is a faster growth than observed in Kazakhstan (8%), Azerbaijan (3%), and the Russian Federation (11%). The growth of secure Internet servers was noticeable in Uzbekistan (from 6 to 279 per million people). Nevertheless, the numbers are still low compared to Kazakhstan, Azerbaijan, and Russian Federation. The detailed data is presented in Table 1.

Table 1.

Internet Measures and Population Comparison in Central Asian Countries for 2015 and 2018.

Measures	Uzbekistan		Kazakhstan		Azerbaijan		Russian Federation	
	2015	2018	2015	2018	2015	2018	2015	2018
Individuals using the Internet (% of population)	43	55	71	79	77	80	70	81
Secure Internet servers (per 1 million people)	6	279	48	1374	33	329	321	5191
Total population (in million)	31.29	32.95	17.54	18.27	9.64	9.93	144.09	144.47

Taking into consideration the Internet improvements over past years within Uzbekistan, it is observable that the population and the government are willing to embrace online opportunities. Despite the growth of the number of Internet users and

secure Internet services, Uzbekistan stands behind Kazakhstan, Azerbaijan, and Russian Federation. However, Uzbekistan is improving gradually as compared with its neighbors.

The next step in understanding barriers and drivers influencing the growth of e-commerce in Uzbekistan is the investigation of challenges and facilitators encountered both globally and locally.

Global E-commerce Barriers and Drivers

In order to better understand barriers and drivers to e-commerce adoption and growth, a variety of studies were conducted globally from different perspectives. E-commerce adoption was researched in B2B/B2C from both an information system and a consumer behavior perspective in developed and developing countries.

The Organization for Economic Co-operation and Development (OECD, 2013) conducted research on barriers of e-commerce adoption in developing countries and found that some barriers vary widely among countries. However, the majority of related barriers refer to ICT infrastructure such as

- technology,
- talent management and professional resources for SMEs,
- cost of equipment and service,
- after-sale services,
- payment systems,
- security and privacy challenges,
- poor distribution logistics, and
- touch and feel factors.

The study has shown that consumers, across European developed countries do the majority of cross-border Internet shopping, where they face various barriers. It was found that payment methods, delivery, and after-sales support, cultural and language barriers are the major hindering factors for consumers across the European Union (Almoussa, 2013).

Almoussa (2013) referred to the cross-country comparison article of 10 countries conducted by Gibbs et al. (2003) in Brazil, China, Denmark, France, Germany, Mexico, Japan, Singapore, Taiwan, and the United States. Gibbs et al. (2003) intended to examine global, environmental, and legal aspects that act as qualifiers of e-commerce dissemination. The results of this study revealed that the Business-to-Business model (B2B) is driven by global (external) forces, while the Business-to-Customer (B2C) model is driven by local (internal) phenomena. Gibbs et al. (2003) further identified:

- The barriers to B2C e-commerce are options for payment methods, language, availability of shopping alternatives and on-site product description, shopping channel preference, reluctance to purchase online, levels of consumer trust, and socioeconomic inequality.
- The drivers for B2C e-commerce are consumer purchasing power, demand to shop online, business readiness, and tech-savviness, as well as ICT infrastructure and government promotion.
- The barriers for B2B are business culture, challenges in changing business processes, short-term focus, lack of resources and skills in businesses, national culture, limited scope of e-commerce, local/regional focus, education and tax system, political concerns and instability.

- The drivers for B2B are international competitive pressure due to globalization pressure for cost reduction, government procurement, opening of economy, market liberalization, government promotion and investment.

According to literature on e-commerce (Almousa, 2013; OECD, 2013; Alyoubi, 2015), there are common sets of barriers in e-commerce adoption between developed and developing countries, as well as a set of common drivers. However, some components of those sets may vary from country to country.

E-commerce barriers in the Russian Federation

Rebiazina, Smirnova, and Daviy (2020) conducted a study on e-commerce adoption in the Russian Federation from market- and store-level perspectives of consumers. The rationale behind splitting consumer perspective was that Rebiazina, Smirnova, and Daviy (2020) believed that the majority of studies mix the external and internal factors of e-commerce adoption. The authors classify environmental, economic and sociopolitical factors as external. Internal factors are mostly related to cognitive aspects: knowledge, people, product/service. Factors related to technological and technical aspects are dualistic as they can be both internal and external. According to Rebiazina, Smirnova, and Daviy (2020), trust in online shopping, benefits of online shopping, and quality of online service influence e-commerce adoption in Russian Federation. However, these factors vary depending on the perspective, specifically:

- The market-level (external) factors are loss of privacy, easiness to shop online, technical competences, and positive influence of the social norms.
- The store-level (internal) factors are online store reputation, delivery services, range of assortment availability, cross-border financial advantages.

E-commerce barriers in Kazakhstan

Samadi, Gharleghi, and Syrymbetova (2015) and Akhmetova et al. (2020) researched the e-commerce implementation processes in Kazakhstan. These authors find e-commerce in Kazakhstan on its initial stages of development since the e-commerce infrastructure has not been formulated yet. They identified the following challenges as the major factors of e-commerce development in Kazakhstan:

- A limited segment of users of Internet Kazakhstani regions.
- Road infrastructure and logistics services.
- Trust/distrust in online shopping.
- Population illiteracy in using electronic payments.
- Limited functions and underdevelopment of payment systems.
- Brand unawareness.
- A desire for touch and feel experience.
- Absence of legislation regulating e-business.

Nevertheless, Samadi, Gharleghi, and Syrymbetova (2015) found steadily growing Internet penetration, low population density and extensive grounds, foreign investors, a wide assortment of products, services and entertainment as driving forces of e-commerce in Kazakhstan.

E-commerce barriers in Azerbaijan

Azerbaijan is a developing country that achieved significant improvement in the deployment of modern ICT throughout the country while facing its own challenges in the process of advancing their digital economy (Sagidova, 2015). Ibrahimova, Suleymanov

and Rahmanov (2019) and Ismailov (2020) outlined several challenges in e-commerce adoption in Azerbaijan, which include:

- Taxation of e-commerce.
- Low public trust in online shopping and service.
- Lack of payment options.
- Logistical infrastructures.
- The broadband gap between big cities and rural areas.

Ibrahimova, Suleymanov and Rahmanov (2019) and Sagidova (2015) stated that the following factors are driving forces of e-commerce growth in Azerbaijan:

- Development of financial services.
- Foreign trade and investment policies.
- Innovation, research and development in the modern technology industry.
- Tech-savvy human capital.
- Popularization of e-commerce.
- IT/Internet literacy.
- E-commerce legislation with a separate committee that will administer, coordinate, regulate e-commerce.
- Reliable security system through the development of ICT.

The literature review on global barriers and drivers of e-commerce adoption by businesses from different perspectives helped to define the factors participating in e-commerce growth around the world. As the next step, it is important to review available studies on e-commerce development in Uzbekistan.

Uzbek E-commerce Barriers and Drivers

Ilhamova (2019), Mekhmonov and Temirkhanova (2020) researched the development and actual issues of e-commerce in Uzbekistan by using methods of analysis and synthesis. From their articles, the following e-commerce needs in Uzbekistan were identified:

- Powerful, reliable and safe servers.
- Secure electronic transactions.
- Growth of online culture.
- Well-established ICT infrastructure throughout regions of the country.
- Credit card prevalence.
- Integration with foreign payment systems.
- Improvement of mechanism for interaction with international financial institutions.
- Fiscal focus of customs operations of international trade.
- Existence of effective express delivery systems.
- Insurance of e-commerce entities.
- Licensing activities in the sphere of e-commerce and certification of e-commerce instruments.
- Human resources in the regions.

Aripov and Ho Kyun (2014) researched factors influencing e-commerce adoption in Uzbekistan's SMEs using the Technology-Organization-Environment model as a research framework. The purpose of their study was the consolidation of factors and determination of their level of influence on a potential e-commerce adoption. The

participants of the study were SMEs throughout the country. As a result, Aripov and Ho Kyun (2014) found the support for the following hypothesis:

- Perceived Usefulness factors have a positive influence on Perceived Benefits of e-commerce adoption.
- Organizational Readiness factors have a positive influence on Perceived Benefits of e-commerce adoption.
- Human Resources factors have a positive influence on Perceived Benefits of e-commerce adoption.
- Competitive Pressure factors have a positive influence on Perceived Benefits of e-commerce adoption.

Aripov and Ho Kyun (2014) reported that respondents were inconsistent for the industries tested. The researchers stated that factors may differ across different industries. Aripov and Ho Kyun (2014) recommended to focus on a specific industry that succeeded in adopting e-commerce to acquire the useful success factors in that particular industry.

Jaehun and Normatov (2010) conducted a Delphi study to identify e-commerce facilitators in Uzbekistan with regards to how they can help businesses and economies achieve greater efficiency and productivity. The study's participants were university scholars/professors, managers in business organizations, Uzbekistan International Compliance Association staff members, UNDP ICT experts, doctoral candidates in IT. Prior to the survey, the researchers compiled twenty-six items based on their literature review and then classified those items into six groups of facilitators influencing e-commerce adoption. Namely, technology infrastructure, legal environment/government

support, industrial environment, business organization, economic/political environment, and socio-cultural environment. The socio-cultural environment factor was omitted from the list during the survey because it measured the subjective attitude or willingness to transform traditional commerce into e-commerce and the level of trust between partners (Jaehun & Normatov, 2010). The outcome of the study revealed the following facilitating factors by the level of their importance:

1. Technology infrastructure: Internet and ICT infrastructure.
2. Legal environment and support: Legal framework and government support.
3. Industrial environment: Logistics and banking system.
4. Business organization: Management, human resources and customers/suppliers.
5. Economic/political factors: Economic development and political stability.

After reviewing the study conducted by Jaehun and Normatov (2010) on e-commerce drivers in Uzbekistan using Delphi, the researcher decided to look at the Delphi research design itself.

The Delphi method

The Delphi has been widely applied as a tool for technological foresight in research related to the ICT field (Gallego et al., 2016). Numbers of researchers such as Jaehun and Normatov (2010), Tsai and Cheng (2012), Su and Zhang (2012), Gallego et al. (2016), utilized the Delphi method to investigate aspects of the e-commerce industry.

The Delphi method is used to collect richer data for a deeper understanding of issues and does not require either the researcher nor the experts to meet physically (Jaehun & Normatov, 2010; Avella, 2016). According to Avella (2016), the Delphi's expert group is based on:

- Mixture of knowledge, which is the opinion of experts; and
- Average of separately collected opinions, which provides a more accurate picture than a collective opinion from a group discussion.

Anonymity and feedback are the key properties of the Delphi method. In a Delphi study, the researcher needs to have the research question(s) and to decide:

- Which groups of experts will provide best insights of the research problem?
- How many experts should be included?
- What are the criteria for membership?

Thangaratinam and Redman (2005) and Skulmoski et al. (2007) outlined that the Delphi method typically involves a minimum of two rounds and three if round one is open-ended. The authors pointed out that repetitive iterations may lead to fatigue by participants.

Once the Delphi expert group is formed, members are asked the research questions to provide responses which the researcher aggregates and gives back to the group in a series of “rounds” until consensus is achieved (Avella, 2016).

The Delphi method offers distinct benefits in dealing with cases where problem solving is an anticipated outcome or when causation cannot be established. The Delphi approach can be creatively adapted to a particular situation just like information systems because it is a fluid discipline ripe for research (Skulmoski et al., 2007). The decisions on sample size, methodological orientation, and the number of rounds can bring rigor to the method, which will contribute to the deeper understanding of the research problem. When adapting the Delphi method, it is important to balance validity with innovation.

Depending on the methodological orientation, triangulation, trustworthiness or other validation tools can be used.

Trustworthiness

In qualitative content analysis, trustworthiness is often presented by terms such as authenticity, conformability, credibility, dependability, and transferability. (Elo et al. 2014). Trustworthiness of content begins with detailed preparation prior to the study and requires skills on data gathering, analysis, and result reporting. Elo et al. (2014) developed a checklist for improving trustworthiness, which includes three main phases: preparation, organization and reporting. To verify trustworthiness of the collected data, it is imperative to provide precise details of the sampling method and descriptions of the participants, to assess relation to the specific questions and study goal. There are a variety of tools to verify trustworthiness such as:

- **Member checking.** Also known as participant or respondent validation. This is a technique for exploring the result's credibility. To perform member checking, the results are returned to each participant to check for accuracy and resonance with the participants' experiences (Birt et al., 2016).
- **Thick description.** It is a tool to achieve credibility. This involves providing enough details of the study. The researcher is accounted for the complex specificity and circumstantiality of the data (Pandey & Patnaik, 2014).
- **Audit trail.** It is a tool to establish dependability. This involves detailed description of how data were collected, how categories were derived, and how decisions were made throughout the study (Pandey & Patnaik, 2014).

Synthesis of the Literature Review

As mentioned before in the global literature review, the barriers and drivers to e-commerce adoption may vary from country to country. Almousa (2013), OECD (2013), and Alyoubi (2015) emphasized that there are different sets of barriers and drivers to e-commerce growth indigenous to developed and developing nations. In addition, the barriers and drivers vary between similarly developed countries (i.e. France, Germany, Japan) and similarly developing countries (i.e. Uzbekistan, Kazakhstan, Azerbaijan) because there are different factors in participation of e-commerce implementation. These factors include, but are not limited to, politics, history, culture, and geographic location. E-commerce barriers and drivers diverge between business models and perspectives as well. Furthermore, Rebiazina, Smirnova, and Daviy (2020) provided a rationale and arguments that factors may differ within the consumer's perspective itself. Aripov and Ho Kyun (2014) pointed out that the perceived importance of factors may differ across different industries. Therefore, it is imperative to approach each case individually for a better and a deeper understanding of the e-commerce situation in Uzbekistan.

Ilhamova (2019), Mekhmonov and Temirkhanova (2020) described and highlighted the major challenges and facilitators of e-commerce adoption in Uzbekistan. However, the findings were based on the analysis and synthesis of secondary data. Aripov and Ho Kyun (2014) conducted a primary research project by surveying Uzbekistani SMEs from different industries to find relationships between factors influencing their decision to participate in e-commerce. Jaehun and Normatov (2010) researched the facilitators of e-commerce adoption in Uzbekistan using the Delphi

method. However, the panel of experts did not represent one specific perspective. In addition, it has been a decade since the research was conducted.

Taking this into consideration, the researcher decided to conduct this study using the Delphi method in order to answer the research questions: *What barriers and drivers exist in the Uzbek market for prospective entrepreneurs? What factors should be addressed first in order to accelerate the growth of e-commerce in Uzbekistan?*

The researcher believes that: “What can’t be *identified*, can’t be *measured*. What can’t be *measured*, can’t be *managed*. What can’t be *managed*, can’t be *improved*” (Pink Elephant, n.d.). Thus, the first step will be defining current barriers and drivers of e-commerce from the perspective of entrepreneurs so the growth of the industry can be accelerated in Uzbekistan.

CHAPTER III: RESEARCH METHODOLOGY

Research Design

The Delphi method was chosen to identify what barriers and drivers exist in the Uzbek e-commerce market for prospective entrepreneurs. The Delphi method also helped to identify what factors should be addressed first in order to accelerate the growth of e-commerce in Uzbekistan. The main reasons for this approach are as follows:

- There is no true or knowable answer to the stated questions. Although Ilhamova (2019), Mekhmonov and Temirkhanova (2020), Aripov and Ho Kyun (2014), Jaehun and Normatov (2010) researched e-commerce in Uzbekistan, they did not investigate the barriers and drivers from an e-commerce entrepreneur's perspective.
- The research will benefit from collective and subjective judgments and decisions from those who have experience in the market. The insights of e-commerce entrepreneurs in Uzbekistan will provide a deeper understanding of challenges and facilitators in the Uzbek market for prospective future entrepreneurs.
- The Delphi implies the availability and ease of electronic communications which is important due to the stated limitations and insurance of participants' anonymity, which is critical for Delphi studies.

Skulmoski et al. (2007) discussed an overview of how the Delphi method was used in graduate students' research projects and developed the Three Round Delphi Process to be used as a framework. This framework includes the following steps:

1. *Develop the Research Question.* In this stage, a literature review and/or a pilot study are conducted to determine if a theoretical gap exists.
2. *Design the Research.* Review different methods that can help answer the research question(s). The Delphi approach is selected when the researcher wants to collect the opinions of experts in a group decision making setting. The approach can be used for qualitative and quantitative studies.
3. *Research Sample.* In this stage, the requirement criteria are developed for the selection of the participants and the sample size is determined. A purposive sample of experts is needed based on their ability to answer the research questions rather than a representation of the general population. Graduate students are advised to discuss the sample size with a supervisor.
4. *Develop Delphi Round 1.* The focus of the Delphi technique is to provide the initial broad question so that respondents understand the question without frustration. Skulmoski et al. (2007) pointed out that sometimes brainstorming is the purpose of the first round Delphi.
5. *Delphi Pilot Study.* The objective of testing and adjusting the Delphi questionnaire is to improve comprehension and to fix any procedural problems.
6. *Release and Analyze Round 1.* The survey is distributed to the participants and the results are returned to the researcher to be analyzed further. Reality Maps can be used for graphical representations of the key constructs under investigation because they portray reality from the participant's perspective.

7. *Develop Round 2.* The Round 1 responses are the basis for the development of Round 2 survey. If the goal of Round 1 was to generate a list, then it is common to shorten that list in Round 2.
8. *Release and Analyze Round 2.* The survey is distributed to the participants and the results are returned to the researcher to be analyzed further. During Round 2, the participants are given the opportunity to verify whether the responses indeed reflect their opinions. In addition, the participants are given the opportunity to alter or expand their Round 1 responses since other research participant's responses are shared with them. This ensures continuous verification which is a crucial part for the reliability of the Delphi study.
9. *Develop Round 3.* The Round 2 responses are the basis for the development of Round 3 survey with additional questions to verify the results.
10. *Release and Analyze Round 3.* The final round is conducted following the similar process used in the Round 1 and Round 2. The round stops if theoretical saturation was achieved, sufficient information has been exchanged, or consensus was reached (Skulmoski et al., 2007).
11. *Document the Results.*

This framework has been used for this study because it summarizes comprehensively reviewed studies on the Delphi process by Skulmoski et al. (2007).

Sampling Techniques and Sample Size Determination

Determination of the sample size plays a pivotal role in understanding of the research problem. Despite the fact that the selection of experts is unique to each situation, there are general principles in conducting a Delphi method study, such as

choosing experts with appropriate domain knowledge and having a pool of 5-20 people (Grime & Wright, 2016). Taking this into consideration, the approach for sampling was as follows:

1. A participant is 18 years or older.
2. A participant, who has an e-commerce business, manages or works at one, or tried to launch one in Uzbekistan but failed.
3. A participant should have more than three years of experience in running or managing an e-commerce company within Uzbekistan.

The recruiting of the specialists occurred online. The recruiting process was performed by the researcher. The researcher screened potential participants through social media channels and identified whether a candidate qualifies for participation following the criteria mentioned earlier. More than 50 individuals were invited to participate in the study. As a result, 22 individuals agreed to participate in this study.

The pool of respondents represented individuals that participated in an e-commerce business with either B2B or B2C business model. These businesses do online retail (10), online services (5), and IT solutions (7). The distribution of participants by business type and business model is displayed in Figure 1. The study participants were engaged in decision making processes as part of their day to day job responsibilities. A total of 13 participants (59%) had at least 3 years of experience with e-commerce, two participants (9%) had more than 4 years of experience, four participants (18%) had more than 5 years, experience, two (9%) more than 6 years, one

participant had (5%) more than 7 years (Figure 2.). The distribution of their job titles is represented in Table 2.

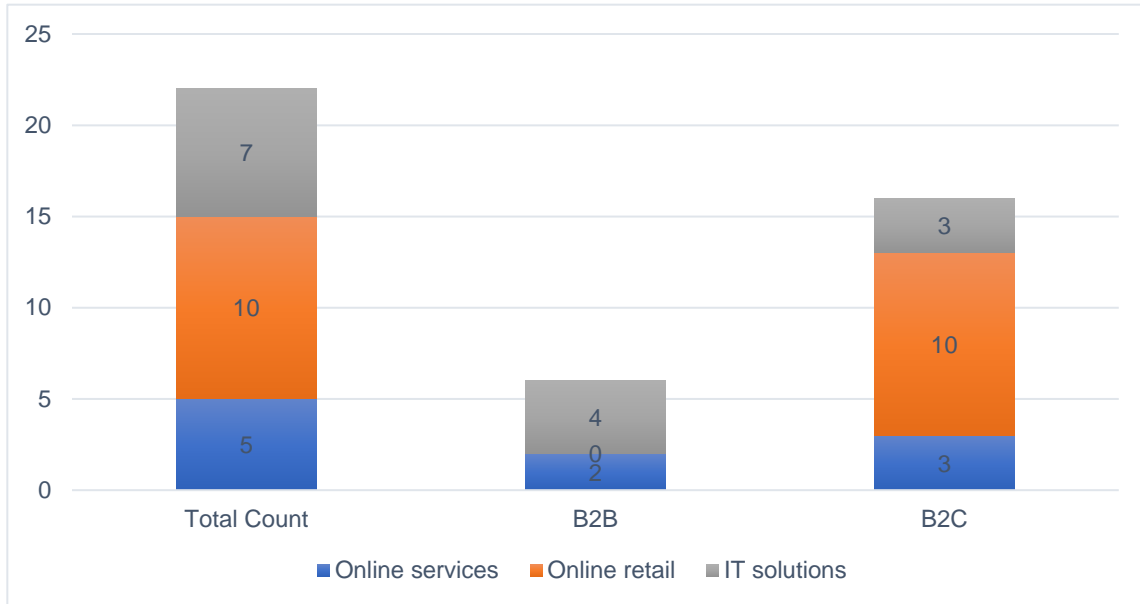


Figure 1. Distribution of Participants by Business Type and Business Model.

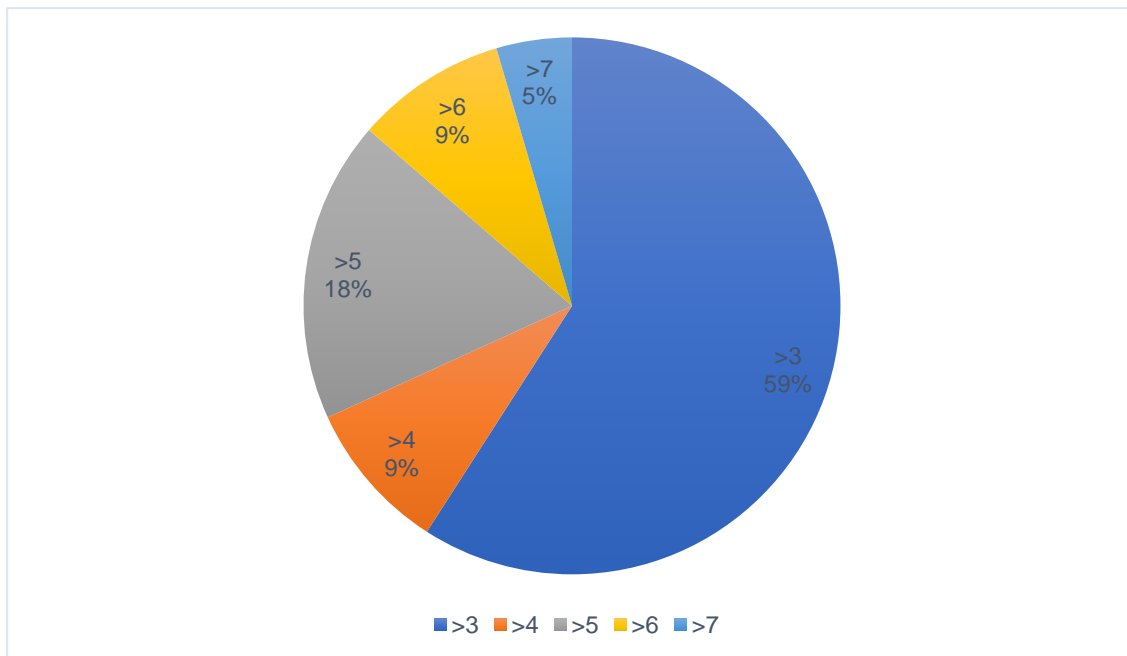


Figure 2. Participants' Experience in Years

Table 2.

Distribution of Participants by Job Title.

Job Title	Count
Chief Executive Officer	9
Chief Marketing Officer	2
Chief Operating Officer	3
Regional Director of Sales	1
Account Manager	1
Managing Director	1
Manager of Customer Support	1
Department Head	1
Regional Director Business Development	1
General Manager	1
Digital Strategy Manager	1
Total Count	22

Delphi Rounds Design

Following the framework of Skulmoski et al. (2007), the study was structured and conducted as described below.

1. The researcher conducted the initial literature review and identified existing gaps in e-commerce development in Uzbekistan from an entrepreneur's perspective.
2. The literature review helped the researcher to select the Delphi research design.

3. To determine the sample size and the number of rounds, the researcher discussed the matter with the thesis committee chairperson. Taking into consideration the literature review and suggestions of the thesis committee chairperson, the researcher decided to survey between 20 to 25 individuals in three rounds.
4. Round 1 was meant to brainstorm what barriers and drivers exist in Uzbekistan. Therefore, the researcher decided to have an open-ended questionnaire to engage the participants in a brainstorming process.
5. The initial Round 1 questionnaire was distributed to several participants in order to test the link and to identify whether the questions were easy to comprehend.
6. The Round 1 link to the Qualtrics questionnaire was distributed to participants through their preferred communication channel. Once the results were returned, the researcher needed to translate and summarize a list of categories from the examples provided by the participants.
7. The generated list from Round 1 responses, were used as the base for the development of the Round 2 survey. The goal of Round 2 was to shorten the list of barriers and drivers identified in Round 1. Therefore, the participants were asked to select the top five barriers and drivers from the provided list in Round 2.
8. The Round 1 link to the Qualtrics questionnaire was distributed to participants through their preferred communication channel. The participants were given the opportunity to verify whether the responses indeed reflected their opinions. The returned results were studied by the researcher.

9. The Round 3 questionnaire consisted of the most selected categories in Round 2. However, the participants were asked to rank the presented categories by ranking them in ascending order.
10. The Round 3 link was released to the participants. The questionnaire was closed once all participant submitted their entries.

Sources and Collection of Data

This research is focused on the survey conduction, which is the primary data source for the study. Since this research was a qualitative study, data was gathered through web-based survey links using the Qualtrics tool. The tool helped to:

- organize the structure of questionnaires in desired ways, such as:
 - dedicate each section for a particular question;
 - translate text by section; and
 - apply validation for questions with limits, such as selecting five options only.
- illustrate and export the results conveniently.

The survey took over two months to complete. The survey phase of the study started on September 2, 2020 and ended on November 5, 2020. This timeline includes the design of the round, the distribution of the survey link, and the analysis of the round (Figure 3.).

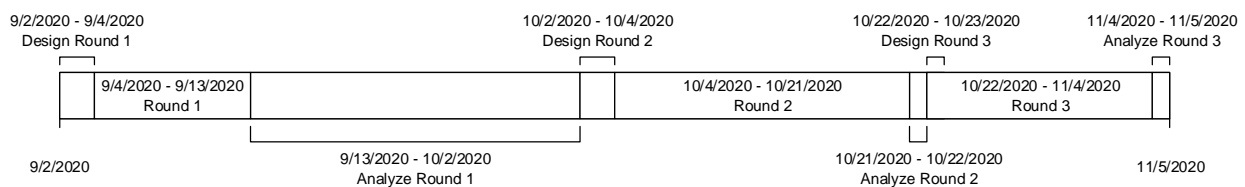


Figure 3. Data collection timeline

Round 1 survey included open-ended questions to allow interviewees to provide new ideas within an exploratory design. Round 2 and Round 3 surveys consisted of multiple-choice questions that were formed from the participants' answers in Round 1. Therefore, the analysis of Round 1 took longer than the other rounds as it involved translation, aggregation, and verification of the answers.

The original list of participants included 22 entrepreneurs. All participants completed the survey link of Round 1. However, Round 2 and Round 3 had 20 responses only because two people decided to drop out.

Administration of Data Collection Instrument

The survey consisted of three rounds. To optimize the process of distributing and analyzing the input from the participants, the researcher decided to create three separate survey links dedicated to each round. Each separate survey link had an identical initial page that included the research description and the consent and contact information in both English and Russian languages. Other pages were tailored to the goal of the specific round. For example, to ensure that each participant was able to select only five options in Round 2, the Qualtrics custom validation function was implemented. The custom validation function is used to inform respondents about missing answers. In addition, the functions could be used to solicit a specific kind of answer from respondents such as selecting the right amount of answer choices in a multi-select question (Qualtrics, 2020). As a result, respondents complied with the requirements by selecting the top five barriers and drivers in Round 2.

As mentioned before, Round 1 had open-ended questions, which required exporting of the responses into a spreadsheet for further actions. These actions

involved studying of the entries, translating the entries, color coding of related factors, and grouping the factors by categories. Rounds 2 and 3 consisted of multiple choice options, which was analyzed using Data and Analysis tab in Qualtrics. The surveys were closed once all responses had been submitted.

Procedure for Processing Collected Data

For all three rounds, the main procedure for the data collection and its respective processing was as follows:

1. Distribute the anonymous link to all 20 participants at the same time through their preferred social media channel.
2. After two days, the researcher performed a follow-up messaging to ensure that the entry was submitted. If an answer had not been submitted, the researcher asked when a submission could be expected.
3. Once all entries were submitted, the researcher performed analysis of the round and made decisions where needed. The analysis of Round 1 involved parsing, categorization, and data clean up. Round 1 responses were exported into a spreadsheet. Each response was color coded and parsed into specific factors. For example: slow Internet was considered one factor, expensive delivery was considered another factor. Afterwards, each factor was assigned to the related category, for instance: Internet, logistics, culture etc. All original factors were kept, and repetitive factors were deleted. As a result, a spreadsheet with the category columns and rows with factors was produced. Round 2 and Round 3 did not involve analysis, but required decision making, which is described in the next Chapter. The responses from Round 2 and Round 3 did not require any data

preparation since they consisted of multiple-choice items. The questionnaires can be found in Appendix A.

4. After each round, the researcher checked the credibility of the survey by randomly contacting participants and ensuring that aggregated data reflected their opinion. For example, the researcher sent the list generated in Round 1 to participants asking to read through the list and to verify the categories with examples.

At the beginning of this research, the independent and dependent variables were set as “barriers and drivers” and “e-commerce growth”, respectively. As a result of conducting the Delphi study, it was determined that the participants believed that certain barriers and drivers influencing the growth of e-commerce in Uzbekistan existed. This implies that the variation of technological, socio-political, and legal factors are reasons that impact the development of e-commerce in Uzbekistan .

The purpose of this Chapter was to provide the reasoning behind the selection of the Delphi method as well as to describe how the researcher approached and applied the design methodology. The next Chapter reveals the data analysis and the interpretations of findings.

CHAPTER IV: DATA ANALYSIS, FINDINGS AND DISCUSSION

This Chapter includes the analysis of the data collected from Uzbekistani entrepreneurs and their perception of barriers and drivers of ecommerce participation. A Delphi technique of three rounds was used. Each of the three rounds included its' own results, analysis, interpretation and decisions made by the researcher. In addition, some discussion will be introduced in the end of this Chapter.

Round 1: Results and Interpretation

The results of Round 1 were aggregated into tables. Then, each example of barriers or drivers was analyzed separately. This was done to ensure that the factors are interrelated and correspond the specified category. One of the most difficult distinctions was separating "Payments" from "Banking System", since the nature of the responses were outlining different issues. For example, issues related to payments were addressing the challenges with online payments both locally and internationally, whereas responses related to the banking system were highlighting the banking culture, account management and policies.

A total of 13 categories of barriers and 13 categories of drivers were identified. However, the researcher decided to eliminate #6 (market) and #13 (other) from the identified barriers (Table 3.) and #3 (staff) and #13 (others) from the identified drivers (Table 4.).

Item #6 represented "Market" category in the list of identified barriers. This category incorporated the following factors stated by the participants: lack of competition, absence of corporate giants, and large shadow/illegal markets. Although these factors contribute to e-commerce development, they are more related to driving

forces. Rather, they are considered obstacles (Gibbs et al., 2003). Therefore, the “Market” category was eliminated from the list of barriers.

Item #13 represented the “Other” category in the list of identified barriers. This category included factors such as lack of analytical and statistical data to track the development of the e-commerce industry. Data driven approach provides important complementary, triangulated explanatory insights into the dynamics of interorganizational networks in general and business ecosystems in particular (Basole et al., 2015). However, data driven decision making is a choice for a business development rather than a requirement. Therefore, it was eliminated from the list of barriers.

Item #3 represented the “Staff” category in the list of identified drivers. This category included factors such as specialized training for the industry workers and knowledge test during the interview process. Only one participant provided these factors as examples. Therefore, the researcher performed member checking to discuss the entry. The researcher determined that from one side, the roots of these factors went back to the fintech, computer and technology literacy among the population. From another perspective, these factors were related to the management style of an organization. Just like an application of a data driven approach, a provision of specialized training and knowledge testing during an interview are choices done by management and are not considered a requirement for e-commerce growth. In addition, the list of drivers already included the category reflecting technological literacy. Therefore, the researcher decided to eliminate the “Staff” category from the list of drivers.

Item #13 represented the “Other” category in the list of identified drivers. This category included factors such as time and patience. Only one participant provided these factors as examples. The researcher discussed this category with participants while performing member checking. Consequently, the researcher decided to eliminate time and patience because these factors are not measurable or actionable.

As a result, the final lists included 11 categories of barriers and 11 categories of drivers. These lists were then presented in the Round 2 questionnaire for the participants’ verification and further assessment.

Table 3.

Summarized Barriers from Round 1.

#	Categories
1	Logistics (Poor and expensive delivery services: local post services and international shipping)
2	Infrastructure (High cost of communication and data storage services, undeveloped road infrastructure, warehouse system, navigation solutions)
3	Staff (Non-compliance with business communication rules, professionals/talent shortage)
4	Population (Illiteracy in digital technology usage: Internet, devices, fintech)
5	Culture (Buying and selling culture: lack of trust in cashless transactions)
6	Market (Lack of competition, absence of corporate giants, large shadow/illegal market)

(Table Continues)

Table 3, Continued

#	Categories
7	Internet (Price, coverage, accessibility, quality: unstable and slow, low Internet penetration)
8	Government/Legislations (No standards for the provision of services, low level of investment into the industry, strict Internet censorship, frequent inspections, overcomplicated process in introducing features into a business)
9	Taxes (Lack of tax incentives, high taxes)
10	Payment (Lack of full integration with international cards, weak development of micro-credit installments for consumer goods and services, lack of convenient payment tools)
11	Banking system (Inconvenient bank account usage options and services)
12	Businesses (Poor update of available products on platforms/channels by sellers, absence of unified POS for suppliers which cause a barrier for integration)
13	Other (Lack of analytical and statistical data to track the development of the e-commerce industry)

Table 4.

Summarized Drivers from Round 1.

#	Categories
1	Logistics (Liberalization of Uzbekistan Post, high quality and affordable delivery services)
2	Infrastructure (Investment into data warehouses, highway roads)
3	Staff (Specialized training for the industry workers, knowledge test during the interview process)
4	Population (Development of popularization of e-commerce services among the population, improving fintech literacy of users, growth of computer literacy among population, increased population)
5	Culture (Large-scale work to improve the culture of using the internet)
6	Market (Availability of a wide range of niche markets, large market size, international giants entering the market, competition/increase in demand from e-commerce)
7	Internet (Cheaper/fair pricing, increased speed, quality Internet, anti-monopolization of the Internet, growth of Internet penetration)

(Table Continues)

Table 4, Continued

#	Categories
8	Government/Legislations (Reduced customs duties, simplified customs clearance process, tax exemptions for new businesses during 1-3 years, fewer inspections, assistance in establishing international relations with suppliers, a hotline for entrepreneurs who want but do not know how to work in this area, work on the digitalization of business and services, Internet freedom, subsidies and investments, the state website/body on which bona fide / trusted online stores of Uzbekistan are posted)
9	Taxes (Lower taxes on online and telephone sales, incentives for local and international e-commerce businesses, reduction of the tax burden on entrepreneurs in the field of trade, less tax scrutiny)
10	Payment (Development of payment systems: smooth integration of payment methods, mass issuance of UZCARD or HUMO cards for the population)
11	Banking system (Simplification of the process to open a bank account for companies and loans, investments into the development of e-banking, additional incentives for non-cash payments)
12	Businesses (Emergence of e-commerce companies and their collaboration to reduce costs, work on the digitalization of business and services)
13	Other (Time and patience)

Round 2: Results and Interpretation

The lists of identified barriers and drivers generated in Round 1 were presented to the participants in Round 2. Initially, Round 2 was designed so that participants could

select the top10 factors that challenge or stimulate the e-commerce development in Uzbekistan. However, due to the fact that factors were grouped by categories, the researcher decided to require from her panel the selection of the top-5 categories in the presented lists of barriers and drivers instead of the top-10 factors.

The survey resulted in the same number of votes for a few of the categories, specifically in Q1 Round 2: *Select Top-5 Barriers*, the categories “Internet” and “Logistics” had 17 counts each, “Culture” and “Infrastructure” had 9 counts each. In Q2 Round 2: *Select Top-5 Drivers*, the categories “Market” and “Population” had 11 counts each. The researcher performed a member checking and determined that the participants find that:

- “Internet” and “Logistics” categories are equally challenging because more than 50% of the participants represent an online retailing sector, which heavily relies on Internet connection and delivery options.
- “Culture” and “Infrastructure” categories are equally challenging because businesses that provide online services or IT solutions face “Infrastructure” - related obstacles more often, whereas online retailers face “Culture”- related difficulties more often.
- “Market” and “Population” categories are equally important as e-commerce drivers because the majority of B2B businesses viewed “Market” – related factors as an opportunity for business expenditure, whereas B2C businesses view “Population” – related factors as an opportunity for client base expenditure. Nevertheless, B2C businesses also found that “Market” – related factors as facilitators of e-commerce growth.

Since the participants considered the “Internet” and “Logistics”, “Culture” and “Infrastructure”, “Market” and “Population” categories equally important, the researcher decided to keep the top-6 barriers and drivers instead of the top-5.

Round 2: Q1 - Results - Identified Barriers
20 Responses

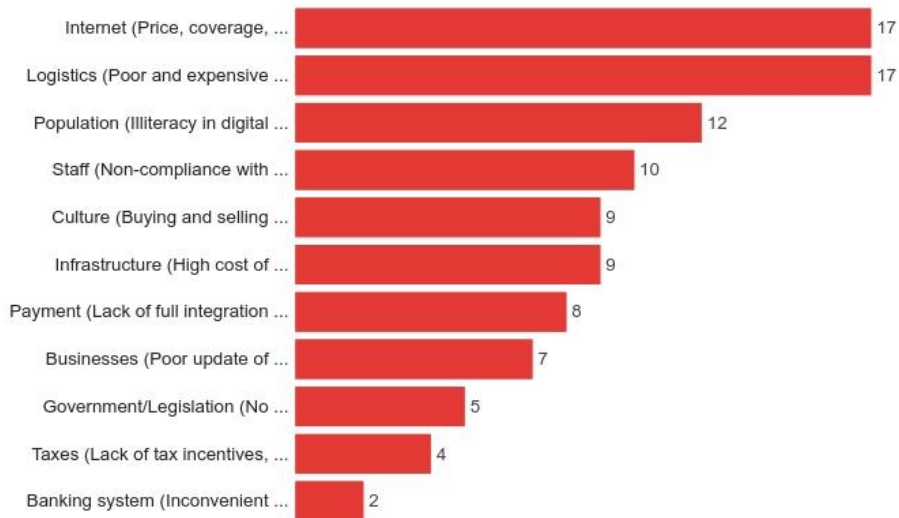


Figure 4. Round 2: Q1 - Results - Identified Barriers

Round 2: Q2 - Results - Identified Drivers

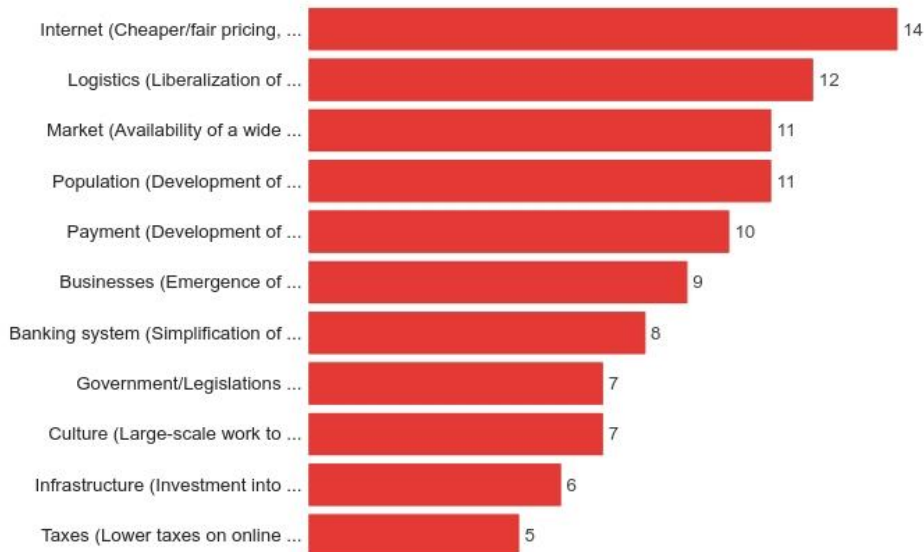


Figure 5. Round 2: Q2 - Results - Identified Drivers

Round 3: Results and Interpretation

The identified top-6 barriers and drivers from Round 2 (Figures 4. and Figure 5.) were inserted into the Round 3 questionnaire. The participants were asked to rank the presented lists from the most to the least important categories. Thus, the most selected category appeared to have the smallest score, which means that it was ranked the highest with the most frequency. Therefore, it is considered as the most challenging and important category.

The results of Round 3 are presented in Table 5 and Table 6. The participants ranked the category “Logistics” as the most challenging barrier to e-commerce adoption in Uzbekistan, followed by “Infrastructure”, “Population”, “Internet”, “Culture”, and “Staff” categories. Meanwhile, the participants ranked “Internet” as the most important driver to e-commerce growth in Uzbekistan, followed by “Market”, “Businesses”, “Logistics”, “Payment”, and “Population”. There were a number of interesting findings in Round 3:

Firstly, the participants tended to specify Internet as the first-choice barrier when responding to the Q1 Round 1. However, they ranked the category “Internet” on the fourth place among other categories as a barrier and on first place as a driver in Round 3. The researcher assumes that the current Internet situation in Uzbekistan is tolerable for e-commerce adoption, though improvements are necessary for accelerating its growth. Therefore, the category “Internet” in barriers was renamed to “Internet penetration” and in the list of drivers to “Internet growth”.

Secondly, technology related factors such as logistics, infrastructure, digital technology usage, and Internet were frequently ranked as the most important barriers, whereas human-related factors such as buying/selling culture and talent shortage were

ranked frequently as the least important. Taking this reality into consideration, the researcher assumes that resolution of a technological gap might positively influence the resolution of human related factors in the long run.

Finally, the categories in the list of identified, selected and ranked barriers by entrepreneurs is not similar to the list of the drivers of e-commerce development in Uzbekistan. The researcher assumes that investigating and addressing the barriers alone may not bring the desired results in e-commerce development. Therefore, there is a need to study drivers as well.

Table 5.

Round 3 Q1 Results - Greatest to Least Challenging Barriers.

Round 3: Q1 Results - Greatest to Least Challenging Barriers	Sum
Logistics (Poor and expensive delivery services: local post services and international shipping)	54
Infrastructure (High cost of communication and data storage services, undeveloped road infrastructure, warehouse system, navigation solutions)	65
Population (Illiteracy in digital technology usage: Internet, devices, fintech)	66
Internet penetration (Price, coverage, accessibility, quality: unstable and slow, low Internet penetration)	67
Culture (Buying and selling culture: lack of trust in cashless transactions)	77
Staff (Non-compliance with business communication rules, professionals/talent shortage)	91

Table 6.

Round 3 Q2 Results - Greatest to Least Challenging Drivers.

Round 3: Q2 Results - Greatest to Least Drivers	Sum
Internet growth (Cheaper/fair pricing, increased speed, quality Internet, anti-monopolization of the Internet, growth of Internet penetration)	51
Market (Availability of a wide range of niche markets, large market size, international giants entering the market, competition/increase in demand from e-commerce)	66
Businesses (Emergence of e-commerce companies and their collaboration to reduce costs, work on the digitalization of business and services)	69
Logistics (Liberalization of Uzbekistan Post, high quality and affordable delivery services)	74
Payment (Development of payment systems: smooth integration of payment methods, mass issuance of UZCARD or HUMO cards for the population)	76
Population (Development of popularization of e-commerce services among the population, improving fintech literacy of users, growth of computer literacy among population, increased population)	82

In this Delphi study, each round produced meaningful results that helped to reveal the current e-commerce situation in Uzbekistan from entrepreneurs' perspective. In Round 1, the researcher identified 13 barriers and 13 drivers participating in e-commerce development in Uzbekistan. In Round 2, the participants of the study selected the top-6 barriers and drivers. In Round 3, the participants ranked the barriers

and drivers by their importance. The conclusions of the study will be drawn in the final Chapter.

CHAPTER V: CONCLUSION

This research has shed light into the current situation of e-commerce in Uzbekistan from the perspective of entrepreneurs. Three rounds of web-based surveys were conducted using the Delphi method. During Round 1, the participants named all the barriers and drivers they faced with while either engaging or attempting to engage in e-commerce related activities. The researcher aggregated and analyzed the results of Round 1. Those examples were then grouped into categories. Each category was provided with explicit examples. Those categories were then presented to the participants in Round 2. Then, the participants selected the most important categories from the lists of 11 barriers and 11 drivers. As a result, the participants then ranked the top 6 barriers by their importance in Round 3. Consequently, the categories were scored as follows from most important to least important:

- Barriers: Logistics, Infrastructure, Population, Internet penetration, Culture, Staff.
- Drivers: Internet growth, Market, Business, Logistics, Payments, Population.

According to the study's results, it can be concluded that entrepreneurs in Uzbekistan were facing a variety of technology related challenges including local and international logistics, data storage services and warehouse management system, and Internet quality and affordability. Moreover, the participants were experiencing some human related difficulties such as population illiteracy in digital technology usage, the Uzbek buying and selling culture, and a talent shortage in developing e-commerce overall.

The e-commerce barriers identified by Uzbekistani entrepreneurs had similarities with e-commerce barriers encountered neighboring countries such as Kazakhstan and

Azerbaijan. However, the sets of barriers differ from neighboring countries with respect to their perceived importance. For example, the majority of identified barriers in Kazakhstan were present in the list of identified barriers in Uzbekistan, however, Uzbek entrepreneurs did not consider “Brand awareness” as a barrier to e-commerce growth, though they mentioned “Banking system”, “Staff”, and “Tax” – related challenges. Likewise the identified barriers in Azerbaijan were applicable to Uzbekistan, but here, the list of e-commerce barriers contained more factors.

In comparison to Jaehun and Normatov’ (2010) findings a decade ago, Internet is still considered the most important driver of e-commerce in Uzbekistan. Although there were other similarities of e-commerce drivers in Jaehun and Normatov’s (2010) study, the participants of this study ranked their importance differently. In addition, the entrepreneurs of Uzbekistan were no longer considering legal framework and government support as the most important factors.

Recommendations

The current study investigated positive and negative forces influencing the growth of e-commerce in Uzbekistan from the perspective of entrepreneurs. Therefore, it is important to research the consumer perspective as well in order to gain a deeper understanding of the e-commerce industry in Uzbekistan. Additionally, the researcher recommends conducting a number of studies to investigate each category of the identified barriers. For instance:

- To research e-commerce fulfillment solutions, which includes logistics and inventory storage by surveying logistics industry experts. The current study revealed that e-commerce entrepreneurs are struggling with logistics services in

Uzbekistan and consider them as the most important barrier. Therefore, studying the insights of the e-commerce fulfillment solutions will bring a deeper understanding of the e-commerce industry in Uzbekistan.

- To investigate correlation between e-commerce technology related improvements, population literacy in digital technology usage, buying and selling culture, and e-commerce talent management. These barriers were selected by the Uzbekistani entrepreneurs as the most important factors influencing the e-commerce growth in the country. The outcomes of the proposed study can help the industry participants to develop a strategy for development of e-commerce in Uzbekistan.
- To study electronic payment options and international card integrations within Uzbekistan and their perceived value from user perspective. In the literature review, the researcher identified that e-commerce participants in Uzbekistan and in the nearby countries are experiencing difficulties with electronic payments. Therefore, there is a value to research the subject area to determine the causes of the common problem in the Central Asia.

Contributions

This work contributes to the field of e-commerce in several ways. Firstly, it provides a better understanding of the barriers to e-commerce participation which are preventing a successful entry by new entrepreneurs, and the drivers that are facilitating the adoption of e-commerce in the country. The findings can be used as a platform for other researchers to investigate deeper into the industry of e-commerce in Uzbekistan. This study can also be used to study the feasibility of e-commerce adoption in

developing countries, specifically in Central Asia. Secondly, this research provides current and future business owners the lists of barriers and drivers of e-commerce field in Uzbekistan. Therefore, entrepreneurs are better prepared for possible challenges when engaging in e-commerce. The lists generated from opinions of the entrepreneurs used as participants for this study had three or more years of experience in managing, operating or owning an e-commerce business. These findings may be useful for those who are interested in joining the industry. Thirdly, Uzbekistan is still considered a developing country and not many international e-commerce giants are currently present. A better understanding of the regional specificities about e-commerce may path the way for attracting international players that envision the market potential in Uzbekistan and see their opportunities for growth of this almost untapped market. This overview of Uzbekistani e-commerce market may help international investors to consider entering the e-commerce market.

REFERENCES

- “On measures to further improve the field of information technology and communications”. February 19, 2018, 5349
- Akhmetova, Z., Baimukhanbetova, E., Belgozhakzy, M., Alikbaeva, A., Tulebaeva, N. (2020, March 24). The development of e-commerce infrastructure in modern conditions [Conference session]. Title of Conference: E3S Web of Conferences, Almaty, Kazakhstan. doi:10.1051/e3sconf/202015904028
- Almoussa, M. (2013, June 1). Barriers to E-Commerce adoption: Consumers' perspectives from a developing country. *Scientific Research Publishing*, 5(2), p. 7. doi:DOI:10.4236/ib.2013.52008
- Alyoubi, A., A. (2015). E-commerce in Developing Countries and how to Develop them during the Introduction of Modern Systems. *Procedia Computer Science*, 65, 479-483. doi:10.1016/j.procs.2015.09.127
- Aripov, J., Ho Kyun, S. (2014). Factors influencing e-commerce adoption in Uzbekistan SMEs. *Management Review: An International Journal*, 9(2), 67-97.
- Avella, J. R. (2016). Delphi panels: Research design, procedures, advantages, and challenges. *International Journal of Doctoral Studies*, 11, 305-321. Retrieved from <http://www.informingscience.org/Publications/3561>
- Basole, R. C., Russell, M. G., Huhtamäki, J., Rubens, N., Still, K., & Park, H. (2015). Understanding Business Ecosystem Dynamics. *ACM Transactions on Management Information Systems*, 6(2), 1-32. doi:10.1145/2724730

- Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking: A tool to enhance trustworthiness or merely a nod to validation? *Qualitative Health Research, 26*(13), 1802–1811. <https://doi.org/10.1177/1049732316654870>
- Biswal, J., N., Maduli, K. (2017). Critical analysis of drivers and barriers of sustainable supply chain management in Indian thermal sector. *International Journal of Procurement Management, 10*(4), 411-430. doi:10.1504/IJPM.2017.10005121
- Bobokhujaev, S., I., Usmanova, A., A., & Abdullaeva, D., U. (2020). The Role and Place of Electronic Trade Systems in the Digital Economy. *International Journal of Innovative Technology and Exploring Engineering Regular Issue, 9*(4), 427-431. doi:10.35940/ijitee.d1442.029420
- Bytyqi, S. (2020). Online Versus Traditional Shopping in Developing Countries Study Case - Kosovo. *International Journal of Social Sciences Perspectives, 7*(1), 10-21. doi:10.33094/7.2017.2020.71.10.21
- CIA. (2020). The World Factbook. Retrieved November 14, 2020, from [https://www.cia.gov/library/publications/the-world-factbook/geos/uz.html#:~:text=Ethnic%20groups%3A%20This%20entry%20provides,4.4%25%20\(2017%20est.\)](https://www.cia.gov/library/publications/the-world-factbook/geos/uz.html#:~:text=Ethnic%20groups%3A%20This%20entry%20provides,4.4%25%20(2017%20est.))
- Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative Content Analysis: A Focus on Trustworthiness. *SAGE Open*. <https://doi.org/10.1177/2158244014522633>
- Gallego, M., D., Bueno, S., Terreño, J., F. (2016). Motivations and barriers to set up e-commerce in Spain: A Delphi study. *Management Studies, 32*(140). doi:10.1016/j.estger.2016.08.002

- Gibbs, J., Kraemer, K., L., Dedrick, J. (2003). Environment and policy factors shaping global e-commerce diffusion: A cross-country comparison. *The Information Society*, 19(1), 5-18. doi:10.1080/01972240309472
- Grime, M., Wright, G. (2016). *Delphi Method*. Wiley Statsref: Statistics Reference Online, 1-6. doi: 10.1002/9781118445112.stat07879
- Ibikunle, O. (2013). E-commerce in developing nations: Issues and challenges. Consumer attitude in the Nigerian market. Degree Thesis.
- Ibragimova, G., Husnuddinova, D., Akhmatova, K., Shodibekova, D. (2019). Challenges on digital economy in sample of various income economies as a development instrument in Uzbekistan. *American Journal of Economics and Business Management*, 2(2), 41-53.
- Ibrahimova, K., Suleymanov, E., Rahmanov, F. (2019). Influence of innovations on economic development in Azerbaijan. *Academic Journal of Economic Studies*, 5(3), 58–63. doi:10.1109/2.901164
- Ilhamova, Y. S. (2019). Development of electronic commerce in the Republic of Uzbekistan. *Theoretical & Applied Science*, 78(10), 174-177. doi:10.15863/tas.2019.10.78.31
- Ismailov, I. (2020). Network economics and e-commerce problems and development perspectives in Azerbaijan. Retrieved November 20, 2020 from https://www.researchgate.net/publication/339295792_Network_economics_and_e-commerce_problems_and_development_perspectives_in_Azerbaijan

- Jaehun, J., Normatov, I., R. (2010). Using the Delphi approach to identify e-commerce facilitators: The case of Uzbekistan. *The Journal of Information Systems*, 19(4), 207-232.
- Kemp, S. (2020). Digital 2020: Uzbekistan. Retrieved from <https://datareportal.com/reports/digital-2020-uzbekistan>
- Mekhmonov, S., U., Temirkhanova, M., J. (2020). Actual issues of electronic commerce development in the republic of Uzbekistan. *International Journal of Financial Management and Economics*, 3(1), 39-45.
- Merriam-Webster. (n.d.). Entrepreneur. In Merriam-Webster.com dictionary. Retrieved November 18, 2020, from <https://www.merriam-webster.com/dictionary/entrepreneur>
- MITC. (2020). The overall speed of access to international networks (Mbps). Retrieved from <https://mitc.uz/en/stat/2>
- OECD. (2013). Electronic and Mobile Commerce. Retrieved November 20, 2020 from [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP/IE/IIS\(2012\)1/FINAL&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/ICCP/IE/IIS(2012)1/FINAL&docLanguage=En)
- Pandey, S., Patnaik, S. (2014). Establishing reliability and validity in qualitative inquiry: A critical examination. *Jharkhand Journal of Development and Management Studies*, 12(1), 5743-5753.
- Pink Elephant. (n.d.). ITSM & business management training and consulting. Retrieved from https://d16cvnquvjw7pr.cloudfront.net/resources/whitepapers/Zendesk_WP_PinkElephant.pdf

- PwC. (2016). Guide to doing business and investing in Uzbekistan. Retrieved November 14, 2020, from <https://www.pwc.com/uz/en/publications.html>
- Qualtrics. (2020). Validation. Retrieved from <https://www.qualtrics.com/support/survey-platform/survey-module/editing-questions/validation/#:~:text=Validation%20is%20used%20to%20alert,kind%20of%20answer%20from%20respondents.>
- Ramdansyah, A., D., Taufik, H. (2017). Adoption model of e-commerce from SMEs perspective in developing country evidence – case study for Indonesia. *European Research Studies Journal*, 20(4B), 227-243.
- Rebiazina, V., A., Smirnova, M., M., Daviy, A., O. (2020). E-commerce adoption in Russia: Market- and store-level perspectives. *Russian Management Journal*, 18(1), 5– 28. doi: 0.21638/spbu18.2020.101
- Sagidova, U. (2015). Implementation of e-government in Azerbaijan: Opportunities and challenges. Master's Degree Thesis. Seoul National University.
- Samadi, B., Gharleghi, B., Syrymbetova, M. (2015). An analysis of consumers' trust, logistic infrastructure and brand awareness towards e-commerce implementation in Kazakhstan. *International Journal of Business and Management*, 10(10), 96-107. doi:10.5539/ijbm.v10n10p96
- Skulmoski, G. J., Hartman, F. T., Krahn, J. (2007). The Delphi Method for Graduate Research. *Journal of Information Technology Education: Research*, 6, 001-021. doi:10.28945/199
- Stat.uz. (2020). Population of Uzbekistan. Retrieved November 14, 2020, from <https://stat.uz/en/open-data/2-uncategorised/7163-o-zbekiston-aholisi-en>

- Su, F., Zhang, Y. (2012). "Study on countermeasure of e-commerce of tourism enterprise: From the perspective of e-commerce maturity," 2012 *IEEE Symposium on Robotics and Applications (ISRA)*, Kuala Lumpur, 2012, pp. 427-430, doi: 10.1109/ISRA.2012.6219216.
- Swerdlow, S. (2019, September 1). Charting progress in Mirziyoyev's Uzbekistan [Editorial]. *The Diplomat*. Retrieved November 14, 2020, from <https://thediplomat.com/2019/08/charting-progress-in-mirziyoyevs-uzbekistan/>
- Thangaratinam, S., Redman., C., W. (2005). The Delphi technique. *The Obstetrician & Gynaecologist*, 22(7), 120-125. doi:10.1576/toag.7.2.120.27071
- The World Bank. (2020). Individuals using the Internet (% of population). Retrieved November 14, 2020, from <https://data.worldbank.org/indicator/IT.NET.USER.ZS?end=2018&locations=UZ&start=2010>
- Tsai, Y., Cheng, Y. (2012). Analyzing key performance indicators (KPIs) for e-commerce and Internet marketing of elderly products. *Archives of Gerontology and Geriatrics*, 55(1),126-132. doi:10.1016/j.archger.2011.05.024.
- Turban, E., King, D., Mckay, J., Marshall, P., Lee, J., Viehland, D. (2008). *Electronic Commerce: A managerial Perspective*. New Jersey: Prentice Hall.
- WTO. (2020). Electronic commerce. Retrieved from https://www.wto.org/english/thewto_e/minist_e/mc11_e/briefing_notes_e/bfecom_e.htm

APPENDIX A: SURVEY QUESTIONS

Round 1 Questions

Q1. In your opinion, what barriers slow e-commerce growth in Uzbekistan?

Q2. In your opinion, what drivers enhance the growth of e-commerce in Uzbekistan?

Round 2 Questions

Q1. Please Select Top-5 Barriers

- Logistics (Poor and expensive delivery services: local post services and international shipping)
- Infrastructure (High cost of communication and data storage services, undeveloped road infrastructure, warehouse system, navigation solutions)
- Staff (Non-compliance with business communication rules, professionals/talent shortage)
- Population (Illiteracy in digital technology usage: Internet, devices, fintech)
- Culture (Buying and selling culture: lack of trust in cashless transactions)
- Internet (Price, coverage, accessibility, quality: unstable and slow, low Internet penetration)
- Government/Legislation (No standards for the provision of services, low level of investment into the industry, strict internet censorship, frequent inspections, over complicated process in introducing features into a business)
- Taxes (Lack of tax incentives, high taxes)
- Payment (Lack of full integration with international cards, weak development of micro-credit installments for consumer goods and services, lack of convenient payment tools)

- Banking system (Inconvenient bank account usage options and services)
- Businesses (Poor update of available products on platforms/channels by sellers, absence of unified POS for suppliers which cause a barrier for integration)

Q2. Please Select Top-5 Drivers.

- Logistics (Liberalization of Uzbekistan Post, high quality and affordable delivery services)
- Infrastructure (Investment into data warehouses, highway roads)
- Population (Development of popularization of e-commerce services among the population, improving fintech literacy of users, growth of computer literacy among population, increased population)
- Culture (Large-scale work to improve the culture of using the Internet)
- Market (Availability of a wide range of niche markets, large market size, international giants entering the market, competition/increase in demand from e-commerce)
- Internet (Cheaper/fair pricing, increased speed, quality internet, anti-monopolization of the internet, growth of Internet penetration)
- Government/Legislations (Reduced customs duties, simplified customs clearance process, tax exemptions for new businesses during 1-3 years, fewer inspections, assistance in establishing international relations with suppliers, a hotline for entrepreneurs who want but do not know how to work in this area, work on the digitalization of business and services, Internet freedom, subsidies and investments, the state website/body on which bona fide / trusted online stores of Uzbekistan are posted)

- Taxes (Lower taxes on online and telephone sales, incentives for local and international e-commerce businesses, reduction of the tax burden on entrepreneurs in the field of trade, less tax scrutiny)
- Payment (Development of payment systems: smooth integration of payment methods, mass issuance of UZCARD or HUMO cards for the population)
- Banking system (Simplification of the process to open a bank account for companies and loans, investments into the development of e-banking, additional incentives for non-cash payments)
- Businesses (Emergence of e-commerce companies and their collaboration to reduce costs, work on the digitalization of business and services)

Round 3 Questions

Q1. Please Rank Top-5 Barriers

1. Logistics (Poor and expensive delivery services: local post services and international shipping)
2. Internet (Price, coverage, accessibility, quality: unstable and slow, low Internet penetration)
3. Population (Illiteracy in digital technology usage: Internet, devices, fintech)
4. Staff (Non-compliance with business communication rules, professionals/talent shortage)
5. Infrastructure (High cost of communication and data storage services, undeveloped road infrastructure, warehouse system, navigation solutions)
6. Culture (Buying and selling culture: lack of trust in cashless transactions)

Q2. Please Rank Top-5 Drivers

1. Internet (Cheaper/fair pricing, increased speed, quality Internet, anti-monopolization of the internet, growth of internet penetration)
2. Logistics (Liberalization of Uzbekistan Post, high quality and affordable delivery services)
3. Population (Development of popularization of e-commerce services among the population, improving fintech literacy of users, growth of computer literacy among population, increased population)
4. Market (Availability of a wide range of niche markets, large market size, international giants entering the market, competition/increase in demand from e-commerce)
5. Payment (Development of payment systems: smooth integration of payment methods, mass issuance of UZCARD or HUMO cards for the population)
6. Businesses (Emergence of e-commerce companies and their collaboration to reduce costs, work on the digitalization of business and services)