

DIGITALIZATION OF THE INTERNATIONAL TRADE AND BUSINESS  
DEVELOPMENT

HALE ŞAPÇI

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PROF. DR. ERKUT AKKARTAL

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## **PLAGIARISM**

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

DATE: 23/01/2022

HALE ŞAPÇI

## ÖZET

Teknoloji alanında yaşanan gelişmeler hayatımızın birçok noktasını doğrudan etkilemiştir. Teknolojinin gelişimi ile beraber gelen dijitalleşme, gündelik hayatımızdan iş hayatımıza kadar olan perspektifte büyük rol oynayan bir kavram haline gelmiştir. Son yıllarda yediğimiz yemeği, giydiğimiz kıyafeti ve hatta ihracatını-ithalatını yaptığımız malzemeleri bile internet ortamından tedarik edebiliyoruz. Günümüzde teknolojiden faydalanmayı tercih etmeyen pek çok firma olmakta birlikte, bu firmalar teknolojiyi kullanmamaları sebebiyle çok büyük bir zaman ve maliyet kaybına uğramaktadırlar. Yaptığım çalışmanın amacı ise bu noktada dijitalleşmenin beraberinde getirdiği avantajların iş geliştirme ve uluslararası ticaret kapsamında ne ölçüde önemli olduklarını, sürecin tam olarak neresinde devreye girdiklerini göstermektir. Dijitalleşmenin getirdiği avantajların dışında, uluslararası ticaret teorileri, uluslararası ticaret kurumları/kuruluşları, iş geliştirmenin tarihçesi ve aşamaları hakkında da bilgi vermeyi amaçladım.

Tezimi hazırlarken ana hipotezim, dijitalleşme olgusunun uluslararası ticaret alanında hizmet veren firmalar için zaman ve maliyet tasarrufu sağlayan bir kavram olmasıydı. Yaptığım literatür taraması sonucunda elde ettiğim verilere göre teknolojinin; iş geliştirme sürecini ve uluslararası ticareti ne ölçüde kolaylaştırdığına dair bilgiler yer almaktadır. Yukarıda da belirttiğim gibi tezimi hazırlarken literatür taraması yönteminden faydalandım. Ayrıca elde ettiğim verileri kontrol etmeme yardımcı olması açısından anket yöntemiyle bilgi toplama yoluna da başvurdum. Yaptığım çalışmalar sonucunda ise gelişen dünya düzeninde teknolojinin ve dijitalleşmenin hayatımızın her alanını etkilediği gibi uluslararası ticaret ve iş geliştirme gibi alanları da büyük ölçüde etkilediğini, zamansal ve ekonomik olarak büyük faydalar sağladığını ve sağlayacağını elde ettim. Yaptığım çalışma ile literatüre ticaretin tarihçesi, uluslararası ticaret teorileri, iş geliştirme modelleri ve dijitalleşmenin beraberinde getirdiği kavramların açıklanması gibi verilerle katkıda bulunmayı amaçladım.

## **ABSTRACT**

Advances in technology have directly affected many aspects of our lives. Digitalization, which comes with the development of technology, has become a concept that plays a big role in the perspective from our daily life to our business life. In recent years, we can procure the food we eat, the clothes we wear, and even the materials we export and import from the internet. Today, although there are many companies that do not prefer to benefit from technology, these companies lose a great deal of time and cost because they do not use technology. The purpose of my work is to show how important the advantages brought by digitalization are within the scope of business development and international trade, and where exactly they come into play in the process. Apart from the advantages of digitalization, I also aimed to provide information about international trade theories, international trade institutions/organizations, the history and stages of business development. While preparing my thesis, my main hypothesis was that the digitalization phenomenon is a time and cost saving concept for companies serving in the field of international trade. According to the data I obtained as a result of the literature review, I made; It contains information on how much it facilitates the business development process and international trade. As I mentioned above, I used the literature review method while preparing my thesis. I also resorted to collecting information using the survey method to help me control the data I obtained. As a result of my studies, I have learned that technology and digitalization in the developing world order affect all areas of our lives, as well as areas such as international trade and business development, and provide and will provide great benefits in terms of time and economy. With my study, I aimed to contribute to the literature with data such as the history of trade, international trade theories, business development models and the explanation of the concepts brought by digitalization.

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## **ORIGINALITY**

The contribution of this study arises in terms of demographics variables effecting digitalization perceptions.

Different levels of Age, Education Level, Level of Position and Gender haven't been investigated solely.

So, this thesis concentrates only those four indicators for the perception of digitalization.

## 1. INTRODUCTION

In the era of digitalization so many topics and so many variables have been affecting the human perceptions.

Facing the pandemic has brought us in such a different period that preferences have completely changed.

Distributive technologies such as artificial intelligence, virtual reality, augmented reality, big data analytics, cyber security, 3D printers, software integrations, cyber physical systems, simulation, autonomous robots, blockchain, digital twin, cloud computing, horizontal and vertical system, 5G, internet of things, blockchain, cloud computing (Ref:1)

Therefore, all these technologies make people to differ their perception. Whoever not all of the people have changed in the same direction.

Changes have occurred sometimes with respective some demographic variables. In this study the perception of digitalization with respect to Age, Education Level, Gender, Level of Position have been investigated. Of course, there could be so many contributor variables which effects the topic but for simplicity those variables have been used in order to interpret the results easily.

Digitalization on international trade has been continuing to bring us to many advantages such as easy to follow up logistics operations, money transfers, documentation movements etc. On the other hands without any trace of hesitation, sustainability (Ref:2), internet of things (Ref:3) and gamification (Ref:4) topics are contributing as a side effect to digitalization perceptions.

In the literature especially in the last decade so many variables effecting digitalization have been investigated.

Ercan & Kutay (2016), in their study investigated the impact of and contribution of Internet of things to the business life. They informed that adaptation of IoT into the industrial production, discussed its positive contributions in different application examples such as automatic storage, preventive maintenance, underground mining, smart environmental systems and given additional information about the open research issues.

Paolo Guerrieri & Valentina Meliciani (2014), in their study they reached that digitalization can increase productivity and employment growth.

Morteza (2020), With this study she contributed to the sustainability literature by systematically defining the sustainability functions of Industry 4.0. This study can serve Industry 4.0 stakeholders – leaders in the public and private sectors, industrialists, and academicians – to better understand the opportunities that the digital revolution may offer for sustainability, and work together more ability functions around the world as effectively, equally, and fairly as possible.

Kantarci, Öget, Murat Özalp, and Cenk Sezginsoy (2017), in their study they aim to understand the e-commerce sector and the changes in the factors affecting the sector in the world and in Turkey, identify the development areas that may affect Turkey's e-commerce growth with new perspectives and present the steps that can be taken to the evaluation of the relevant stakeholders.

Magomedov, I A, H A Murzaev & A M Bagov (2020), in their study they focused on the main aspects of the development of the digital economy. It looks at the role of digital technologies in the economic development of modern society. The world's largest companies that affect the development of the digital economy are discussed and the impact of digital technologies on society's attitude towards the economy is also discussed.

Taşel (2020), mentioned in his study the increase of global trade and digital networks in recent years. It has been possible to observe the effects of digitalization in various sectors, especially with the increase in the use of internet-based technologies due to the recent COVID-19 global epidemic. Physical trade has been significantly affected due to reasons such as people avoiding physical contact and curfews. In this period, when attention is paid not only to the business dimension, but also to social and physical distance, individuals also benefit from digital technologies in many areas. For this reason, an increase in e-commerce volume has been observed, especially with the increase in the demand for mobile applications, the time spent on the internet, and the integration of all socialization processes in daily life into the digital environment.

Görçün (2018), mentioned in this study how robots and robotic systems will be functional and what will happen in the future and evaluations about them are

mentioned. This article also tried to examine the roles of robots in logistics, transportation, distribution and manufacturing.

Korcan; ARSLANTEKİN, DOĞAN. (2016), they mentioned in their study In the study big data has been discussed conceptually and its relation with other concepts, big data technologies and methods used for processing of big data have been explained and different examples regarding institutions creating awareness for big data and usage area of big data around the world have been given.

Shen, Zhidong, and Qiang Tong. (2010) They mentioned in this article focuses on the security requirements in cloud computing in the digitalization-enhancing business environment. A method and model are proposed to create a reliable computing environment for the cloud computing system by integrating the reliable computing platform into the cloud computing system.

Teo, Thompson S.H. (2001) The aim of this study was to evaluate existing research on the digital economy, involve the private sector in the development of research that informs investment and policy decisions, and promote a better understanding of the growth and socioeconomic impacts of information technology and electronic commerce. Aspects of the digital economy covered include macroeconomic assessment, organizational change, small businesses, access, market structure and competition, employment and workforce.

Özkanlısoy and Akkartal(2021), mentioned about the digital transformation, especially in supply chains. They figured out the current applications, contributions and challenges of it in such a significant way that effects the managerial decisions.

Digitalization implementations have wide range of applications also in fleet management (Akkartal and Aras, 2021) which is a tool used for trade. Especially, as far as sustainability issues concern, digitalization has many benefits supporting management in diversified areas.

Internet of thing (IoT) is playing a vital role for traceably in trade in last decades as well (Abdelhadi and Akkartal, 2019). It facilitated international Trade and creates added value. It also helps logistics operations which is an invariable part of international trade.

Simulations, which is one of the most important part of decision making process for international trade, can ve performed by digitalization much easier and motivates the managers to take tactical decisions in international trade (Akkartal at.al, 2010).

By digitalization, some advanced methos such as gamification (Akkartal G.R. et all, 2019), can be performed and simulated for trade scenarios for the future as well

Another facility of digitalization was revealed by Aslan et. al.(2021), which explains the cloud applications implemented in business and trade by the information systems used in international trade.

## **2. INTERNATIONAL TRADE**

Trade is a concept that started with the history of civilization and it has reached today. Also, it will continue as long as human beings exist. International trade, with the commonly known dictionary meaning; is the purchase and sale of goods and services by public institutions and organizations with different countries. Necessary terms and conditions in this definition; it is necessary that it takes place between two different countries and that its subject is the exchange of good or services. As a result of overproduction or underproduction of good and services in states with clear political borders, there has been a relationship between countries for these goods and services. This relationship is based on the development and economic conditions of the countries. These social and economic facts form the basis of international trade (Nicita, 2013).

### **2.1. Historical Development of International Trade**

Trade is a phenomenon that has existed since ancient times. Silk and Spice Routes built in the Middle Ages are important developments in terms of trade. Trade routes have changed with geographic discoveries and colonialism has become widespread with the discovery of new continents. The interest rates to be applied to the loans have been determined and the mortgage institution has been determined with the Laws of Hammurabi in the Babylonian Kingdom in the B.C. 1800. In the A.C. 1500s, the foundations of modern international banking were laid, and from the 1650s forward transactions began to be used. In the 15th century, the European continent was in a closed agricultural society with the World economy. A large part of the population dominated by the feudal structure worked in an orderly manner, and trade was mostly carried out in cities. With the developments in the intellectual field, geographical discoveries and rapid population growth, changes began to occur in the commercial life in Europe. With these developments, feudalism and religion began to lose their former power, new economic centers were born as a result of the Renaissance and Reform movements, and commercial capitalism began to develop with the emergence of new inventions. Towards the end of the 16th century, Mercantilism emerged as a valid commercial system in Europe. The trade carried on with this system has faced intense pressure from the states and obstacles that restrictive measures have been developed (Garcia et al., 2015).

The mercantilist period is a period in which it is aimed to make all kinds of social and economic changes in social areas in order to ensure capital accumulation. The

liberalization process of international trade did not emerge after the 1980s, contrary to what is commonly claimed. Between 1870 and 1914, there was an economic integration between countries and international economic relations increased. Before 1870, international tariffs and transportation costs were reduced. Since the 1870s, the customs rates applied to imports have been increased. In parallel with the decrease in foreign trade of many countries, trade relations have improved. Countries are in efforts to rapidly industrialize their national economies. After the Second World War, various organizations were established to develop multilateral foreign trade and increase international economic relations. During the time between the two world wars, the efforts of nations to turn to themselves and follow a closed policy and to increase international economic relations developed as a reaction. With the effect of the 1929 Economic Crisis following the First World War, many countries that faced foreign payment and external balance problems resorted to trade-restrictive policies such as trade barriers and foreign exchange controls, and this situation had a very bad effect on international economic relations (Dowling & Ray, 2000) World trade was badly affected, and there was a global contraction in the volume of international trade. As a result, there was no considerable improvement in global output and trade volume until the end of World War II. In order to ensure international economic, political and social structuring; with the end of the Second World War, the United Nations (UN) organization, then the International Monetary Fund (IMF) and the World Bank (IBRD) were established under the leadership of the United States of America (USA). With this conference, the economy is organized around three institutions: International Monetary Fund, International Trade Organization (ITO) and the International Reconstruction and Development Bank. The International Monetary Fund has played a role in eliminating international economic bottlenecks with the steps it has taken to eliminate non-permanent periodic financial difficulties, thus trying to prevent global trade bottlenecks. The negative effects of restrictive foreign trade policies on all countries after the World Economic Crisis in 1929 created a broad consensus on reducing restrictions on foreign trade. Since the second half of the 1960s, developing countries have taken important steps towards open growth. During the Second World War to the 1970s, a unique economic development was seen in the world economy.

Globalization, which was perceived as a single world economy with the rapid increase in international trade and liberalization in the 1990s, has been one of the most remarkable reasons and indicators (Grinols and Perrelli, 2006).

## **2.2.Treaties and Organizations for the Development of International Trade**

The purpose of economic integration in the international sense, the economic relations of the countries in the integration movement; to realize, develop and harmonize the distribution of resources effectively, to liberalize the restrictions on trade and to reach the amount of development by increasing the level of social welfare. This integration is to eliminate the issues that limit and prevent trade in the economies of the countries, to provide freedom in the purchase of goods and services and to create a common market. Countries that have taken the decision of economic integration may go through certain stages according to the degree of convergence and unification they have targeted. Among these stages; there are articles such as Economic Cooperation Agreements, Free Trade Association, Customs Unions, Common Market, Economic Union, Economic and Monetary Union. Economic Cooperation Treaties aim to increase the ongoing trade volume, not to bring a structural change to international trade. For this, they aim to eliminate the obstacles and limitations of international trade and to minimize the controls. In addition, the main purpose of Free Trade Zones is the removal of customs tariffs and quantity restrictions, and an economic integration where independent trade policies are implemented against other countries. At the same time, countries that have taken a customs union decision will have gone to protect their economies against other countries. The Common Market allows for the unrestricted circulation of commodities and labor. According to this; quantitative restrictions that prevent the free movement of goods and factors of production among participation states, and customs duties, work permits, and capital transfer permits are eliminated. Economic Union means the complete integration of the economies of the countries. In addition, both institutions and economic policies of the member countries are unified. Economic and Monetary Union means that the financial and social policies act in harmony with the national currency, as well as the elements of the economic and monetary union that the countries have taken (Çatalbaş, 2014).

### **2.2.1. The General Agreement on Tariffs and Trade (GATT)**

One of the international treaties signed to liberalize foreign trade and increase economic cooperation is the International Trade and Customs Tariffs Agreement. This organization was established in 1947 with the participation of 23 countries with the goal of expanding international goods flows by lowering customs barriers and removing quantity restrictions. With the participation of many new countries after its establishment, it has become an important international organization in the western world. All these positive developments have been reversed since the early 1970s. These negative developments continued with the 1973 oil crisis. As a result of the negative developments caused by the oil crisis, protectionist tendencies have started to show themselves in many countries and necessary measures have been taken to consolidate national economies (Busch & Reinhardt, 2003). The GATT's objectives are separated into two categories: general and specific. To realize efficient use of global resources by providing consistent growth in real income and effective demand, to promote the social welfare of members, and to contribute to the development of international commerce and production, according to the general purposes section. In the special purposes section; to reduce restrictions and barriers to international trade in order to achieve general aims. The basis of the GATT administration is formed by the countries that are members of this organization. This organization has four organs. The highest authorized body is the General Assembly. Each member has the right to one vote in the general assembly in the decisions taken as a method of operation. Decisions are usually taken on a majority basis. The Council of Representatives acts as an independent body and conducts the affairs of the parties. The Advisory Group was established in 1975. This group; It makes recommendations and recommendations to the general assembly on international trade (Jackson, 1967).

### **2.2.2. European Free Trade Association (EFTA)**

In order to liberalize foreign trade and accelerate international goods flows, many organizations have been formed to try to solve the problem on a more regional scale. European Free Trade Association was established under the leadership of England in 1960 between seven Western European countries (England, Portugal, Sweden, Denmark, Switzerland, Norway, Austria). Also it based only on free Exchange of industrial products (Hope et al., 2014).

### **2.2.3. European Economic Community (EEC)**

The Common Market, the European Economic Community, whose main foundations were laid since the Second World War; signed in Rome on 25 March 1957. Later, it was formalized by the Treaty of Rome on 1 January 1958. The European Economic Community treaty consists of 248 articles. Known as the "Treaty 6" in history and the states that signed this agreement first, they are called by this name because there were six of them. These countries are Germany, Italy, France, Netherlands, Belgium and Luxembourg. Three more states joined them and the number of members became nine by the time. These countries are Denmark, England and Ireland (Pardo, 2013).

### **2.2.4. World Trade Organization (WTO)**

The World Trade Organization was established on April 15, 1994. The purpose of this organization is to increase the living standards by improving the relations between the member countries in the field of trade and economy, to ensure a stable increase in the volume of income and demand in real terms, to provide employment, to assure the availability of world resources in a more effective and effective way and to take some measures to protect the environment. To attain and actualize these objectives, it is required to remove all types of barriers and borders that impede international trade, as well as all types of hurdles in their import and export processes. Two important rules have been developed to remove different types of applications. One of them is the "Most Favoured Nation". According to this rule; The convenience and concession given to one country will also be given to other member countries, and equality between member countries has been tried to be achieved. The second rule is the "Rule of National Treatment". This rule, on the other hand, ensures that all kinds of goods and services are treated equally in the tax practices applied in the country, without making any distinction between domestic and foreigners. The ease brought by these two rules provided equality between member states and caused their goods to be treated equally in the domestic markets of other countries. In the World Trade Organization, decisions are taken unanimously. Otherwise, if a unanimous decision cannot be taken, the issue that cannot be decided is submitted to the vote again, and as a result, majority of the votes are used to make decisions. (Deardorff and Stern, 2002).

### **2.2.5. Organization for Economic Co-operation and Development Nations (OECD)**

Organization for Economic Co-operation and Development (OECD) is an international economic organization established on 14 December 1960 with reference to the Paris Convention. The OECD was established in 1948 for the purpose of restructuring within the framework of the Marshall Plan taken by the USA after the economic collapse of the second world war. It is also a direct successor of the previously established Organization for European Economic Cooperation (OEEC) (Woodward, 2009). The problems of the world economy, caused by the economic depression after the Second World War, became more evident towards the end of the 1950s. These economic development problems have started to gain importance for developed and developing countries. In 1959, the United States of America, France, England and West Germany, which was divided in two by the second world war, held a meeting and discussed international cooperation between developed and developing countries. During these meetings, they decided to convene the Special Economic Committee on 12-13 January 1959 in order to determine the future international cooperation. With the meeting of the Special Economic Committee, a working group was established within the committee and a draft agreement was prepared that includes the continuation of the functions of the European Economic Cooperation Organization. The report prepared by this working group for the updating of the OEEC was published on 7 April 1960. The preparations to transform the Organization for European Economic Cooperation (OEEC) into the Organization for Economic Co-operation and Development (OECD) were completed in 1960. In the year of 1961, the Organization for Economic Co-operation and Development (OECD) entered into force with the Paris Agreement. In the first article of the Organization for Economic Co-operation and Development (OECD) agreement, clearly mentioned the necessity of giving importance to international economic development not only for the member countries of this organization, but also for the non-member countries that dominate the world economy. As a result of the OECD meetings held every year, the economic and financial policies of the countries that are members of the OECD are examined and the developments in the world economy are reviewed.

In the final report issued as a consequence of the conference; in addition to the member nations' economic and financial policies, common attitudes are determined in

the face of the main problems in the world economy and it is tried to prevent the members from being negatively affected by the economic and financial developments in the world, aimed at harmonization in national policies. In addition, every year the OECD reviews the general view of the world economy and publishes reports on the economic and financial developments of the member countries (Zimmermann and Smith, 2011).

#### **2.2.6. World Customs Organization (WCO)**

The idea of establishing the World Customs Organization by the European Economic Cooperation Committee was first put forward during the examinations of the Working Group formed on 12 September 1947. This new institution, hosted by Belgium, started its duty with the establishment of the Economic Committee and the Customs Committee in Brussels. Today, the name of the Economic Committee is the Organization for Economic Cooperation and Development, and the name of the Customs Committee is the World Customs Organization. The main purpose of these two committees is to undertake studies on ensuring international standardization by developing customs procedures that constitute the basic structure of economic, financial and international trade of countries. Furthermore, the Customs Cooperation Council was founded as an institutional entity to investigate current issues in the creation and improvement of customs legislation and customs processes in customs systems. (Wolfgang and Dallimore, 2012). The World Customs Organization is an intergovernmental body responsible for the execution of the convention and recommendation for the solution of customs problems. The World Customs Organization is currently responsible for the operation of over 95% of the international trade. The World Customs Organization has been a significant international organization that ensures the protection of the interests of the customs administrations of countries with different economic development levels all over the world. With the enterprise of the World Customs Organization, the enlargement of the world trade volume, as well as the development of technology and informatics, and the rapid change and transformation processes, the globalizing world economies undertake different duties and responsibilities (Weerth, 2009).

### **2.3. International Trade Theories**

#### **2.3.1. Traditional Trade Theories**

### **2.3.1.1.Mercantilism**

The concept of mercantilism describes a generally accepted political system and a period in the development of economic thought in the 17th and 18th centuries. In 1763, Mirabeau's *Philosophie Rurale* introduced this notion as a commercial system. Economists advocating mercantilism defend the opposite of liberal economics, which advocates that international trade be completely free and believes that all countries will gain through free trade, and they believe that keeping international trade completely under control is best for the economy of the countries. According to this approach, the amount of wealth in the world is fixed. Especially Western European countries preferred protectionist policies in international trade in order to get a larger share of this fixed wealth. States with this understanding believed that the wealth and power of a country depended on the number of precious metals such as gold and silver obtained by increasing exports. However, in this system where state control is at the highest level, the understanding that importing goods other than raw materials harms the general economy has prevailed. Therefore, the basic principle on which the understanding of Mercantilism is based can be explained as follows. Nation-states will process the raw materials they have brought from abroad at cheap prices and turn them into final goods, and they will increase their wealth by selling it to the foreign market (Magnusson, 2015). Mercantilists are aware that the abundance of precious metals obtained with increasing exports will cause a price increase. Mercantilists did not see this as a negative situation because it was the merchant class who benefited from this trade. The main reason for the emergence of mercantilism is that empires lost power and gave way to nation states in the said period. The emergence of nation states and their independence were undoubtedly possible with a strong economy and army. In order to achieve this, nation states have processed the raw materials they brought from their colonies into final products by processing them in their own country's territory, and they have also solved the market problem by selling these goods to the colonies they control (Wallerstein and Boyacı, 2004).

### **2.3.1.2.Absolute Advantage Trade Theory**

This thesis is ascribed to Adam Smith (1776), usually regarded as the inventor of modern economics and the first proponent of free trade. Absolute advantage, according to him, is the ability of a person or a nation to manufacture a certain good for

less money than another person or in a different nation. Consequently, a country that engages in cross-border trade should concentrate on manufacturing items in which it has a clear competitive advantage. According to Smith, "what is prudent in the conduct of a private family can hardly be foolish in the behavior of a great country." Better use some of our own industry's output in a way that gives us an advantage if a foreign entity can provide us with a good for less funds than we can establish it ourselves. (Yüksel and Saridoğan, 2011). Smith insisted that increased output would result from specializing in the production of products and services. Additionally, when a nation export some of the cheaper items it produces and imports the cheaper goods produced by its trading partners, available resources are used more efficiently globally. Smith maintained that, as per mercantilism, no government participating in a trade could have benefited from such transactions because one nation's product is another nation's acquisition. Smith believed that if all nations engaged in free trade and focused on specialized industries, everyone would gain. This suggests that trade is feasible when one nation produces a specific good with less labor than another nation, and vice versa. According to Smith, even if a state's employment exceeds its domestic consumption in the free market era, this will stimulate the country to increase its productive capacity. As a result, the nation's wealth and revenue would grow far faster. Smith believed that every nation or individual had a definitive advantage over everyone else. Might the government continue to generate all of the commodities for internal and export use? Will both nations be able to exchange goods and earn when one country provides all of the goods? These are some of the questions that need to be answered. These concerns have been addressed by comparative advantage theory (Seretis and Tsaliki, 2016).

### **2.3.1.3.Comparative Advantage Theory**

David Ricardo introduced the theory of comparative advantage to address some questions that the absolute advantage theory did not address (1817).

Even if one state has a demonstrable advantage in creating all of the products traded, Ricardo asserted that countries will benefit from trading. Ricardo underlined that the country should concentrate on producing products for which it has the highest output at the lowest investment return as compared to other countries. (Yüksel and Saridoğan, 2011). It might be argued that each country has a comparative advantage for a product with the highest production efficiency as long as the costs of manufacturing vary

amongst trading nations. The following assumptions underpin complementarity hypothesis: Only two countries trade; they transfer only two products; there is high competition; trade has no effect on how income is allocated among trading partners; technological varies massively throughout all nations; trade is required in part because labor productivity fluctuates across nations; employment is the only factor that influences production; there are no economic sanctions; trade is balanced; and there are no operating costs between regions. Critics pointed out that the theory did not deal with the causes for differences between labor productivity and technology between involved nations. Factor Proportions Theory, predicated on comparative advantage theory, attempted to demonstrate why productivity growth and future innovation differed between nations. (Hunt and Morgan, 1995).

#### **2.3.1.4. Heckscher – Ohlin Trade Theory**

The Heckscher-Ohlin Theorem (H-O model), proposed by Eli Heckscher and Bertil Ohlin, is based on the Ricardian comparative advantage. The concept is also known as "component endowment theory," since it stressed how domestic factor endowments affected cross-border production and commerce. Foreign commerce occurs as a result of variations in the relative costs of production elements that result from either an abundance or a scarcity of resources (labour and capital) inside nations. Therefore, nations ought to create and export items for which they have a low-cost component of production, and they ought to purchase goods or inputs that are in short supply domestically. A key element in understanding regional variations in labor productivity has been found to be variations in the utilization of capital per worker (Dornbusch, Fischer, and Samuelson, 1980).

According to H-O, countries employ diverse combinations to generate varied products because Factor endowments are not transferable across them. It is assumed that the products will have consistent returns to scale, same elements, and equivalent production factors across trade countries. Unlike the Ricardian model, which assumes just one component of production (labor), the H-O model assumes two elements of production (labor and capital) that may be freely exchanged between two similar nations and generate two distinct commodities. The "2 2 2 model" is another name for this one, and it simply refers to the fact that two countries engage in commerce, produce two goods, and have two homogenous inputs of production. In addition, the model

underlined that, unlike the Ricardian idea of factor endowments, an economy naturally guarantees the outcomes of financial development through trade. In contrast to the H-O model, the Heckscher-Ohlin-Vanek (HOV) theory predicts the factor content side of international commerce as a result of the painstaking effort of determining the structure of trade throughout the world of diverse items. They argue that the labor, capital, or land components of production are what produce the products and services. Countries would export products and services based on their abundant production resources, in line with the HOV model. This suggests that in nations with a high level of capital, the capital adequacy in manufacturing is likely to be larger than in spending. The H-O model generally concluded that countries with an abundance of capital will export items that require capital and buy goods that require labor. Likewise, a state with an oversupply of manpower would export labor-intensive commodities while importing capital-intensive ones. (Leamer, 1995).

### **2.3.2. Modern International Trade Theories**

Empirical evidence from postwar global commerce; trade liberalization is defined by a growth in trade between similar economies and an increase in the percentage of information-intensive trade as well as intra-industry trading in industrial commodities. Although the Traditional Factor Endowment Theory may explain inter-industry trade between developed and developing nations by focusing on the comparative advantages of various factor endowments, it falls short of describing the phenomena observed in global trade. Aspects like as its reliance on basic and limiting beliefs, as well as the appearance of Leontief's Paradox, restrict Factor Endowment Theory's capacity to represent a large portion of today's globalized world international commerce. (Journal et al., 2015).

In this framework, New Foreign Commerce Theories (NFTTs) were proposed in the early 1960s to explain empirical phenomena seen in global commerce, and they evolved by the late 1970s. Competitive advantage develops in sectors dependent on information-intensive technology in today's digital world. As a result, the relevance of things such as natural resources, money, and labor that once provided a competitive edge is rapidly fading, while information is increasing significance. (Verter, 2015).

### **2.3.2.1.Skilled Labor Theory**

Donald B. Keesing suggested that the Theory of Skilled Labor may explain trade in industrial products, which accounts for a significant portion of international commerce between industrialized nations. According to this theory, nations with a professional or professionally competent workforce would specialize in and export skilled labor-intensive items, whereas countries with an abundance of low skilled workers will specialize in and export goods incorporating unskilled labor. The Factor Endowment Theory and the Skilled Labor Theory are remarkably similar. Savings are required for capacity building and physical capital creation; consequently, qualified labor-intensive products and capital-intensive commodities are essentially same with. Keesing attempted to discover the ability of human assets to influence global trade with his empirical and theoretical research in 1965, 1966, and 1968. There are two grounds, according to Keesing, for treating skilled labor as a separate element of manufacturing. The first is that labor productivity may have an impact on commerce and industry establishment. The principal explanation is that it is crucial in understanding economic progress. Therefore, since economic growth and foreign trade are intertwined, the qualified workforce that affects economic growth may also affect trade. To examine the effects of professional qualifications on international trade, Keesing divided the workforce in each industry into eight occupational groups. Then, he calculated the number of skilled labors required for the trade of manufactured industrial goods of ten industrial countries in 1962 within the framework of eight occupational groups and finally used the net skilled labor coefficients based on the skilled labor force used in exports and the skilled labor force requirements used in imports. Keesing's conclusions in his work reveal interesting features (Bresnahan, Brynjolfsson, and Hitt, 2002).

First feature; The first five industrial countries, including the USA, Germany, England, Japan and France, are net exporters in all eight occupational groups. The remaining countries such as Italy, Belgium, Switzerland, Sweden and the Netherlands are net exporters except for some occupational groups.

The second feature; The first three governments like the USA, Germany and England have a significant share of approximately 95.4% of the exports made in industries that require the employment of scientists and engineers, which Keesing defines as the first occupational group. As a result of this study, Keesing found that the exports of many

industrial countries are skilled labor intensive, and therefore he stated that skilled labor should be included in the models as a separate production factor in explaining international trade (Harvey, 1985).

#### **2.3.2.2. Technology Gap Theory**

Factor Endowment Theory exhibits a static structure because it accepts technological change as constant. However, in 1961 M.V. Posner created the Technology Gap Theory, which considers dynamic variables including technology development as a trade predictor. The heart of the Technology Gap Theory, as per Posner, is founded on the notion that the continual process of innovation and creativity essentially boosts commerce between nations with similar production factors and choices. According to the Technology Gap Theory, the development of new products and manufacturing techniques is a significant portion of trade amongst industrialized nations. Because of the goods and manufacturing methods in question, innovative enterprises in developed nations enjoy temporary monopolistic strength in global marketplaces. This brief monopoly will last till the expiration of copyrights and patents. As a result, according to the Technology Gap Theory, developed nations are first exporters of the items in issue. Afterwards, when dominant forces fade and technology is imitated, these items become more expensive in terms of labor and natural resources. It has begun to be manufactured by superior emerging countries. When a result, as emerging nations gain a competitive edge, these countries begin to export new products and production processes, and industrialized countries begin to import. Although the Technology Gap Theory adds a dynamic aspect to global trade theory by adding technical development as a driver of commerce, it has not been effective in explaining the causes and magnitude of the technology disadvantage. Later, R. Vernon tried to complete the shortcomings of the Technology Gap Theory by developing the Theory of Product Periods (Cotsomitis, DeBresson, and Kwan, 1991).

#### **2.3.2.3. The Period of Production Theory**

In 1966, R. Vernon introduced the Product Period Theory as an extension and generalization of the Technology Proposed Hypothesis. According to this Theory of Product Periods, Vernon reveals that new products pass through many stages during their development and that comparative advantage changes throughout product periods, and argues that the invention of new products is concentrated in countries such as the

USA. Textiles, television, radio, petrochemical and leather products, calculators, automobiles, office apparatuses, semi-transparent microchips and especially electronic products are among the products that have undergone the process of changing dynamic comparative advantages throughout product periods. Studies into the applicability of the Product Period Theory are gaining traction nowadays, in tandem with changes such as the rapidity of technical improvements, the globalization of production through multinational corporations, and the significance of global marketplaces. Although the Theory of Product Periods tries to explain the trade in industrial goods with dynamic comparative advantages, it is a theory whose validity is increasingly being discussed in parallel with the globalization of technology and production (Koskela, 2020).

#### **2.3.2.4. Similarity Theory in Preferences**

The Theory of Similarity in Preferences was proposed by Steffan B. Linder in 1961. Linder established the Theory of Similarity in Preferences, claiming that while the Factor Endowment Theory might justify trade in basic commodities like natural resources, it must have been inadequate to describe trade in modern commodities. The hypothesis assumes that trade in manufacturing goods takes place mostly between nations with comparable economic levels and tastes. In this situation, the demand-side Theory of Similarity in Preferences differs significantly as from supply-side Production Factors Theory. According to Linder, for a good to be exported, there must first be domestic market demand. The request in question is called the representative request (Atik, 2006).

Domestic producers initially only produce goods that they consider profitable in the domestic market, and then they seek exports as the domestic market reaches saturation point.

Therefore, exports starting at this stage are made towards the markets of countries with similar demand structures. According to Linder, the main determinant of both potential export goods and potential imports of a country is domestic demand. In addition, in the process of transforming potential trade into realized trade, it is important for producers to enter the market, and factors like distance, transportation costs and trade restrictions as customs tariffs and quotas can determine the level of trade. Linder emphasizes that the more similar the preferences of the countries are, the greater the trade in industrial goods between countries and considers the similarity of

per capita income levels, since there is a strong relationship between income levels and preferences. Linder argues that since countries with similar income levels consume similar goods and trade in similar goods, trade in industrial goods between them will be high. The Similarity in Preferences Theory, in contrast to the Factor Endowment Theory, argues that trade will develop more between countries with similar preferences and income levels, and that the tradable goods are similar but differentiated industrial goods. Therefore, although the aforementioned theory makes a demand-side analysis and touches on product differentiation, it cannot explain its limitations and is more of a valid theory for countries with a small domestic market. In this context, the Theory of Similarity in Preferences cannot provide a complete explanation of international trade (Ağcadağ and Gövdere, 2021).

#### **2.3.2.5.Economies of Scale Theory**

According to Factor Endowment Theory, both items are produced in both nations under circumstances of constant returns to scale. As a result, when two nations are identical in every way, this theory cannot explain the rise of trade based on growing returns to scale. Looking at current practices, it is clear that many sectors gain from scale economies as production becomes more efficient and size increases. Nations with a big domestic consumer interest from economies of scale and lower manufacturing costs, according to the Economies of Scale Model. These nations export commodities with efficiencies of scale while importing others. Countries with a small home market, on the other hand, can profit from economies of scale by producing for international markets. (Silberston, 1972).

As a result, countries specialize in a narrow range of items, allowing them to manufacture commodities more effectively through economies of scale and trade with one another to consume a variety of products. Increasing returns to scale can be connected to "economies" shown in cost cuts. These are known as internal and external economies of scale. While upping returns to scale means that the increase in output exceeds the boost in inputs, the term cost savings means that when the scale of production in a firm or industry is grew, the rate of increase throughout costs is less than the rate of increase in output, and thus the ordinary cost of manufacture decreases. In this context, economies of scale or growing returns to scale refer to the same thing being handled with two independent ways, such as production and cost, and reducing

costs to scale or increasing returns to scale emerge if average production costs reduce as production size increases (Halbert, 2013). Internal and external economies of scale are the two types of economies of scale. Internal economies of scale imply that when a firm's production scale expands, average costs fall regardless of other businesses' production sizes. The car business is one of the sectors with internal scale economies. External economies of scale, on the other hand, are regarded as a drop in the average costs of each business when the size of production in the industry on which the firm depends rises in its entirety. Because they differ, the link between internal and external economies of scale and industry market structure attracts attention. An industry with fully exogenous economies of scale has a perfectly competitive market structure comprised of numerous tiny enterprises. As a result, it does not give a cost benefit to huge corporations. Internal economies of scale, on the other hand, offer huge enterprises a cost advantage over small firms, resulting in an imperfectly competitive market structure. While both internal and exterior economies of scale contribute to international commerce, ongoing study on the function of economies of scale in trade has concentrated on economy of scale for two primary reasons. The first argument is that internal economies of scale are easier to establish in reality than external economies of scale. The second argument is that internal economies of scale trading countries are simpler from external scale savings scenarios. (Corden, 1972).

#### **2.3.2.6.Monopolistic Competition Theory**

The inclusion of uneven competitive marketplaces into trade flows with growing returns to scale is now the most active field of international trade theory. While the initial interest in increasing returns to scale stemmed primarily from the belief that this element was a drastic move to the foundation of Factor Endowment Theory, recent interest in imperfectly competitive markets has emerged from such a desire to discuss the properly accounted in terms of inter trade. In this setting, Edward H. Chamberlin created Monopolistic Competition Theory in 1933. (Roberts and Sonnenschein, 1977). Monopolistic Competition Theory uses realistic assumptions in its analysis. Because; increasing returns to scale, monopolistic competition markets and product differentiation gain importance and technological changes are taken into account. Factors of production are assumed to be mobile between countries and transportation costs are included in the analysis. The determinant of the international price is the companies operating in monopolistic competition markets. Because countries are both

exporters and importers of a good due to intra-industry trade, they cannot specialize according to their comparative advantages. Bertrand price competition and product differentiation underpin Monopolistic Competition Theory. In Bertrand price competition, each business sets a price that maximizes profits while treating other firms' pricing as given. However, the enterprises in issue differentiate their products in order to avoid being a total substitute for either the goods of current rival companies or the goods of new entrants. Each business can so behave as a monopolistic firm on the product it differentiates. The establishment of monopolistic competition is influenced by product differentiation. The goal of product uniqueness is to give the consumer the impression that the product is distinct from many other commodities. The close substitution of goods at the end of product differentiation causes them to remain in the same group of goods. Goods that have become close substitutes with product differentiation are differentiated in terms of quality, model, scope or advertisement and brand. Another factor that explains monopolistic competition is economies of scale. Businesses that profit from internal economies of scale by concentrating on a smaller product range attain low average production, manufacture differentiated items that are close substitutes, and import commodities that they produce not make. (Breit and Ransom, 2014).

### **3. BUSINESS DEVELOPMENT**

The whole of the activities that are put into operation in order to technically handle the applications of the existing system of the institutions and increase the capacity is called business development. All employees involved in the business development process are a part of the process. Institutions create business development departments in order to better monitor the activities. The objectives of business development include increasing corporate income, developing existing products and services, reaching new markets and communicating with different users in the existing market. At this stage, business development prepares the business sequence, making preparations for revealing potential markets and businesses. Implementation creates the process with support and continuous monitoring. In general, it is responsible for business development, developing existing opportunities, creating new opportunities and implementing the whole process in the field (Phan, 2003).

#### **3.1. Basic Concepts of Business Development**

##### **3.1.1. Entrepreneurship**

Globalization, which has increased its effectiveness all over the world, especially since the 1990s, has brought with it an intense competitive environment. Businesses joining this very hostile climate must differentiate their goods on the one hand, and access new spheres of operation on the other. All of these activities raise the value and function of entrepreneurs. In national economies, macroeconomic parameters (national income, employment, economic growth, etc.) are in parallel with increasing and promoting the effectiveness of entrepreneurship in the country. Entrepreneurship in its narrowest sense includes capturing ideas and converting those ideas into products and/or establishing a venture to bring services and products to market. In recent years, the difference in meaning between the concepts of enterprise and business has been gradually disappearing. Entrepreneurship is the technique of identifying and developing possibilities to provide value the new or existing businesses. In addition, entrepreneurship is the activity of adding new concepts to an existing production process, using different production techniques, marketing the product, selling it and turning it into profit (Audretsch, 2012).

It has been noted that in nations where entrepreneurship is promoted, assets are concentrated, resulting in decreased unemployment. In other sense, through encouraging entrepreneurship, macroeconomic indicators are improved. As a result, individuals have gotten closer to their economic wellbeing predictions.

When seen through this paradigm, nations with high levels of entrepreneurial mobility include Australia, Canada, South Korea, Norway, and the United States; it is seen that it is at lower levels in countries such as Japan, Argentina, Brazil, India, Singapore and Western European countries. Countries where entrepreneurship is intense are the countries that have a say in the world economy and politics. Entrepreneurship is a key dynamic of economic and social change (Wiklund et al., 2011).

Entrepreneurs, one of the cornerstones of business life, have some common characteristics. These features include innate abilities as well as features that can be learned later. It is possible to list the characteristics of successful entrepreneurs as follows;

- High desire, identity, long-term ability, high intensity level, persistence in problem solving, significant level of inventiveness, capacity to create

objectives, pride, resolve to finish a task and achieve, tenacity to try again, willingness and ability to take risks in life capacity to focus, lessons learned from mistakes, generate value, discover chances.

In addition, entrepreneurs undertake many functions in the economy and social life. The functions they undertake emphasize the importance of entrepreneurs once again. The functions of entrepreneurs can be summarized as follows;

- Introducing new products or changing the quality of known products,
- Developing and implementing new production methods,
- Creating new and improved organizations in the industry,
- Expanding into new markets,
- Finding new input sources,
- Increasing relations between management and employees,
- Developing relations between business, public and government.

It is among the most traditional forms of entrepreneurship to create items that have never been manufactured before, using creativity and technology advancements. Going outside of the routine in product marketing and distribution procedures, sensing customers' ever-changing expectations as early as feasible, and implementing a quick yet reasonable behavioral approach in accordance with these aspirations are also included in the range of innovation. Opening out to new markets gives businesses a huge advantage in terms of recognizing possibilities that no one else sees and being market leaders. Transforming internal (internal) and external (external) crises into opportunities is possible with a developed entrepreneurial spirit. Entrepreneurs are divided into private entrepreneurs and public entrepreneurs. The only difference between these two concepts is related to the structure of ownership. A private entrepreneur is a person who produces by borrowing or using resources that are privately owned. A public entrepreneur is someone who spends the public's money for the public. In addition, public entrepreneurs need to pay more attention to the social values of the society (Carlsson et al., 2013).

### **3.1.2. Enterprise**

They are innovative movements that companies create internally. For a project to be considered a venture, it must: include an activity that is unknown to the organization, involve more loss or an important increased risk of failure than the organization's core

business, involve a higher degree of uncertainty than the core business, and aim to increase sales, profit, productivity, or quality. The boundary between a new initiative and the continuance of typical commercial activities is not always apparent, but it is critical to recognize it. From a business standpoint, an organization's judgment as to whether the business is a new endeavor helps establish the sort of management required for the project. This choice is important to the project's success. Changing an existing employment to meet new difficulties is not the same as creating a new job. Because new initiatives necessitate a fresh approach to leadership (Efeoğlu, 2014). A project can be considered a "enterprise" if the following conditions are met. These conditions are;

- If it includes an activity that is new to the organization,
- If it is internally accepted or managed,
- Involves more loss or a significantly higher risk of failure than the organization's core business,
- If it is characterized by greater uncertainty than the underlying business,
- If it will be managed separately sometimes during its lifetime,
- If undertaken for the purpose of increasing sales, profit, productivity or quality.

The boundary between a new initiative and the continuance of typical commercial activities is not always apparent, but it is critical to recognize it. From a business standpoint, an organization's judgment about whether the corporation is a new endeavor helps establish the sort of management required for the project. This choice is important to the project's success. Companies take risks in order to expand and adapt to rival threat. Finally, entrepreneurship is absolutely necessary if business and strategic goals require innovation and its transformation into a new business, a relevant business, or otherwise (Aytaç, 2015).

### **3.1.3. Start-up**

Before actually starting a business, both the elements of the entrepreneurial process and the analysis that will help each process step should be considered. This activity is often referred to as opportunity or “pre-start” analysis. This study is important to be able to analyze before entering the job. There are three important goals in this process. These goals are;

- Understanding the dimensions of the opportunity and coming to a conclusion about the attractiveness or repulsion of the opportunity.
- Understanding the importance of the effort required to uncover the opportunity.
- Define the course of action for obstacles and risks unique to an enterprise.

Start-ups frequently have less funding, authority, or brand presence, less scientific and engineering resources, fewer strategic connections, and unfinished or non-existent corporate procedures. There are 4 basic stages for pre-start-up development. The first stage focuses on building the desire to start a business. A venture opportunity is found and a company concept/plan/model is produced in the second step. The third step involves gathering the required resources and establishing the business. In the last stage, the company begins to adapt to the market. (B. Kim, Kim, and Jeon, 2018).

In the process of being a start-up, there is a possibility of failure as well as being successful, and this process involves various risks.

These risks are;

- Lack of capital,
- Continuous energy requirement,
- Personal failure,
- Job insecurity,
- Income uncertainly,
- Possibility of bankruptcy.

Aside from these fundamental risk considerations, it is critical for the individual to have limited understanding of financial concerns and stocks and bonds while making dangerous judgments. For two key reasons, the success of start-ups is critical for entrepreneurial operations. For starters, startups promote competition, creativity, and wealth creation. Secondly, the emergence of successful start-ups sends a positive message to potential entrepreneurs who are left behind, inspires them and increases their self-efficacy levels. There are several factors that affect the success of start-ups. A strong management team, an appealing market, an appealing new product or service, strong evidence of customer interest, the ability to overcome the credibility gap, the ability to grow quickly and profitably, flexibility in business models and technology, and the earning potential of large investors are among these (Nabi, Holden, and Walmsley, 2006).

### **3.1.4. Opportunity**

A broad opportunity; there may be a potential to address a market demand (or interest or want) that gives greater value through a creative combination of resources. Identifying opportunities is one of the most critical duties of an entrepreneur. For an opportunity to be good, it must meet two conditions. These; it is the representation of a desired situation in the future and that it is achievable. How attractive an opportunity is can be understood after: someone will develop the idea of what the business strategy is, the resources needed to pursue the opportunity will be determined, the cost of these resources will be determined, and finally, how much value (value) will remain to the entrepreneur. Among the triad of opportunity definition, there are the stages of awareness, development and evaluation.

Entrepreneurial engagement is required for the opportunity identification trio to succeed.

One of the most crucial abilities of a successful entrepreneur is the ability to identify and select the proper possibilities for new business. The process of successfully developing opportunities leads to the establishment of successful jobs. This process comprises recognizing the opportunity, evaluating the opportunity, and developing the opportunity. The development process is iterative and periodic: At various phases of development, an entrepreneur analyzes multiple times. (Denrell, Fang, and Winter, 2003).

Key factors influencing the core process of opportunity recognition and development leading to business creation:

- Interventional agility
- Information asymmetry and prior knowledge
- Social networks
- Personality traits; optimism, self-efficacy and creativity
- Type of opportunity itself

Although opportunity identification is seen as a vital step in the entrepreneurial process, the meaning that researchers assign to the term varies widely. In the studies carried out, to express the definition of opportunity; terms such as perceiving opportunity, discovering, determining, constructing and creating are used. This

situation, which can be interpreted as an extension of the differences of opinion regarding the concept of opportunity, is actually a natural result of the diversity in the emergence of opportunities. Opportunity identification is a phenomenon that takes place at the beginning of the entrepreneurial process and does not mean the whole process; because once an opportunity has been identified, various activities must be undertaken to take advantage of it. Various processes such as sourcing resources, preparing a business plan, creating an organization are performed after opportunity identification. Therefore, opportunity identification is not synonymous with entrepreneurship. In addition, since opportunity identification is an abstract phenomenon, it is very difficult to express this phenomenon clearly by both the entrepreneur and the people around the individual (Tseng, Lee, and Friley, 2005).

### **3.1.5. Business Plan**

Any business plan is a documented strategy created at the start of anything. The plan's content should include a detailed, comprehensible, and straightforward explanation of the job. Simply offer an executive summary that is easy to grasp for everyone. The plan is anticipated to incorporate functional elements of the task, as well as short and long-term goals. Although it is expected to make 3-year plans as a general acceptance, this period should not be considered as a condition. The time covered by the business plan may be longer or shorter depending on different business lines, financial and corporate structures (Anderson, 2003).

In contrast to preparing the business plan and developing his own concept, the entrepreneur can objectively assess his own talents and their relationship to the company's goals. At this point, it is possible to prepare a table in which abilities are evaluated. The entrepreneur can simply list the skills relevant to the business plan and score each skill as weak, mediocre, good, or very good. In this way, the entrepreneur reviews the talents that will be required for the success of the business model, what he lacks from these talents, and what issues he needs to receive support during the 3-year period. This step has effects such as how to solve the deficiencies and strengths during the creation of the next institutional structure, in which areas there is a need for personnel employment or service procurement, the impact of these purchases on the financial structure and the shaping of the financial plan. Anyone interested in the business can read the prepared plan. Business plans can be thought of as a protocol

between investors and entrepreneurs, especially those who will invest in the business. From this point of view, the entrepreneur is expected to provide information from different perspectives and to elaborate on his idea. These can basically be grouped into three groups;

- Entrepreneurial Perspective
- Marketing and Market Perspective
- Investor and Financial Perspective

The Business Plan can be thought of as a written text in which the entrepreneur expresses himself, expresses new ideas and communicates with people who will benefit from the business model.

From this point, it is possible for the entrepreneur to express his point of view and support his idea, to write down the advantages and strengths of this idea, and to talk about his future plans (Abrams and Barrow 2008).

Company plans help entrepreneurs reach out to diverse individuals, locate financial resources, and evaluate their ideas. It enables the entrepreneur to alter his own concept. In general, most of the effort is noted when developing the business plan, and questions that have never been asked are brought to mind as a result. From this perspective, business plans are the most significant and initial control step for the growth of the company. The first step is for an entrepreneur to make detailed financial calculations for the realization of the idea, to define the market and target audiences, to analyze this market and to put them in writing.

Basically, the business plan should start as a report that presents the business idea, reveals the differences of the business and ensures that everyone can understand the business, and should be able to clearly demonstrate how the business will be managed and human resources and their strengths, as well as the advantages of the business idea. In addition, providing detailed information about the service or product offered, detailing the resources currently available in the business model will provide the necessary information to the parties examining the business. The business plan is read by different eyes for different purposes. For example, banks read the business plan in terms of opportunities and risks. Investors, on the other hand, can read it for purposes such as understanding the character of the entrepreneur, doing background checks,

providing higher returns, and making market and financial forecasts (Brinckmann, Grichnik, and Kapsa, 2010).

Business plans generally need to contain four pieces of information that may be of interest to investors;

- Credit Character
- Cash Flow
- Collateral
- Equity Contribution

### **3.2. Business Development Methods of Today**

Firms from practically every country now do business with companies from other countries. While it is challenging for businesses to advertise themselves and their products and earn respect in their own markets, doing it on a worldwide scale is considerably more difficult. Companies utilize numerous strategies to do this, with the goal of reaching more consumers or sellers. The most used methods today; they are places or tools where advertisements can be made, such as fairs, websites, promotional brochures, catalogs. In addition to these, there are platforms that we can call common areas that enable companies to come together. In order to understand how effective these methods are, it is necessary to examine the methods of direct marketing, product promotion, websites and e-commerce.

#### **3.2.1. Direct Marketing Methods**

Changes in customer preferences, technology and lifestyles have brought about changes in marketing styles. With this change affecting the business world, innovation and change have become inevitable in marketing activities. Mass marketing has begun to lose its importance and has been replaced by direct marketing methods. It has become preferred by businesses and institutions. In particular, the customer-oriented marketing approach has led to the development of direct marketing activities. Businesses use direct marketing to engage directly with target audiences in order to elicit a response or complete a transaction. (Lynn, 2015).

Although the history of direct marketing in the world dates to the 60s, it has changed very rapidly. Although the concept of direct marketing was first build by Lester Wunderman, it is actually a marketing technique that has been used since the

1940s. The transformation of markets into small market segments, unlike the mass, the increase in population and the urban confusion brought about by the modernization of customers brought along many problems. Traditional marketing method made shopping difficult. With the increase in the number of working women in modern societies, there has been a diversity in needs. In addition, the fact that these needs can be purchased from anywhere in the world in a short time and it saves time has led to an increase in the significance of direct marketing (Y. A. Kim, Song, and Kim, 2009).

Direct marketing strategy has many distinctive features. Unlike general advertising, advertising in direct marketing is aimed at selling, making a sale. Therefore, the characteristics of the advertisement to which direct marketing will be applied should be different. These advertisements should contain sufficient information, be significantly persuasive, have promises that will create a desire to order or obtain information, and that can motivate customers. In addition, information about the audience to which the messages will be sent is required for direct marketing. With lists of names and addresses, purchasing habits should be constantly reviewed and renewed. One of the most important features of direct marketing is that it can measure itself. This “self-measuring” feature provides the ability to measure the effectiveness of the entire marketing program. For this, studies are tested in the pre-planning process. Expectations need to be clearly stated in order to be able to reveal the exact measurement. Finally, the cost of direct marketing is quite high. Direct impact advertising costs approximately 15-25% or more of net sales. The direct marketing method includes features such as flexibility, low cost, being selective, providing uninterrupted communication with the consumer, advertising that affects sales and consumers, providing practical service and making the right investment (Patterson, 1998).

### **3.2.1.1.Direct Marketing Techniques**

#### **3.2.1.1.1. Telemarketing**

As the target market grows, the need to reach the market with faster, reliable and effective techniques arises. One of the most important techniques that meet this need is the use of the telephone as a direct marketing tool. The concept of telemarketing emerged with the use of the telephone in marketing as a communication tool. Telemarketing is an interactive communication system that is carried out for target

consumer groups with the use of communication technology and trained personnel. In personal selling, the order is made by calling the customer or by telephone. The biggest advantage of this communication is that it is fast and interactive. In addition, the telephone has an important role in the functioning of many direct marketing techniques. To summarize, it is stated that the most productive issues of telemarketing are primarily the emergence of sales, meeting the purpose, finding loyal customers, conducting surveys that can reach concrete information, responding to their expectations by establishing healthy communication with customers, reaching the target audience (Mitchell, 2003).

One of the positive features of telemarketing is that it is two-way. Being bidirectional provides some advantages. It enables us to reach a conclusion by evaluating which areas are successful and in which areas the marketing activities are unsuccessful, to save time by accessing information in a short time, and to be open to innovations. Thanks to telemarketing, the reasons for failure are investigated and changes to be made are determined. Telemarketing has both positive and negative aspects. The telemarketer needs to be accustomed to rejection. The first disadvantage encountered in telemarketing is that the customer does not listen to the marketing staff or does not spare time. In order to overcome this situation, questions that may attract the attention of the customer can be asked. It may be necessary to leave the conversation to the customer rather than the marketer. The talking party should have more customers. Open-ended questions can be asked to know the client's real appeal. Although negativity does not always mean bad, in order to turn it into a sale, the customer's e-mail address can be obtained and this negative situation can be turned into a positive one (Koumetio, Cherif, and Hassan, 2019).

#### **3.2.1.1.2. Computers and Electronic Advertising**

Today, the influence of computers is increasing day by day. Computer networks, which are becoming widespread day by day, are used in place of the telephone and fax, and are used in all areas of life, not only for analysis and preparation of reports. Computers are widely used in all business functions. However, the effective use of computers in businesses does not happen all of a sudden, it gains efficiency as it passes through a number of stages. "With the help of computer connections, access to information and information exchange can be realized in a very short time. Two- and

three-dimensional works can be done easily, so it becomes extremely easy to transform creative thoughts into graphics and shapes. Therefore, one of the most important contributions of computer use in advertising design can be counted as the beneficial effects of computer use in workplaces on overall productivity in the business environment. Businesses can benefit from the opportunities offered by the computer in order to protect themselves from the competition of large enterprises and to reach customers. In the field of direct marketing, success can be achieved by taking advantage of these advantages of technology.

Along with the advantages and disadvantages of technology, the problems that arise with the high cost, finding experienced personnel in the field and the increase in the use of computers should not be ignored (Dedrick, 1994).

#### **3.2.1.1.3. Radio and Television Broadcasts**

Mass media such as radio and television have a suitable structure for direct marketing activities, thanks to their rapid communication (Pirnar, 2005). Radio establishes a special bond with the listeners and establishes a unique relationship with the customer. Contrary to classical improvisation, it is possible to impress the audience with sound improvisation. It may differ from other marketing tools in that several different advertisements are presented in different markets at the same time. The most important feature of web-based applications is the realization of sales via television with the internet. It has common features with "M-commerce". If it works in coordination with m-commerce and web-based sales methods, the chance of success increases (Coase, 1965).

#### **3.2.1.1.4. Direct Mailing**

Direct mailing is the mailing of promotional materials such as brochures, newsletters and special letters to customers' addresses. Although direct marketing is an effective marketing method, it is also a costly method. In reality, it costs 15-20 times more to reach someone by direct mail than with a television commercial or a full-page newspaper ad. Direct mailing, which is one of the most important methods of direct marketing, ensures that the messages conveyed to the target audiences are conveyed correctly and effectively. Being selective and personal, it makes a difference from other direct marketing methods, it establishes an effective communication with customers, increases sales and ensures the success of the business. In addition, its flexibility and

openness to change are among its other advantages. Direct mail has both positive and negative aspects. In the direct mail method, the number of customers is sometimes not at the desired level. The message to be delivered can only reach the person to whom the mail was sent. This may force businesses to use other methods. The gradual increase in the cost of the materials used may also be the reason why businesses are not preferred in the future (Swoboda et al., 1997).

#### **3.2.1.1.5. Electronic Mail (E-mail)**

E-Mail is an internet-based communication tool, and a message is sent electronically to a person's e-mail address. A list of e-mail addresses may be used for this submission. There is no discernible difference between them and a traditional letter. Any form of item, such as photographs, music, or movies, can be attached to an e-mail and sent to the laptop of the other receiver. Every day, billions of e-mails are sent throughout the world. It is more extensively used than print letters since it is less expensive and easier to use, but its usage in formal business is confined because to its lack of trustworthiness. Marketing via email has many benefits and can be very effective when used well. The first striking and most important feature is that it allows to target and reach a market. Electronic mail is one of the most effective ways to reach customers, establish one-to-one relationships, and do one-on-one marketing on the Internet. E-mail-based marketing communication provides direct communication with existing customers and prospects. Personalized product and service offers, e-bulletins, replies to customers' complaints and suggestions can be provided via e-mail messages. Businesses are increasingly benefiting from e-mail and marketing activities. Direct mailing provides significant advantages over other marketing activities as it is fast and convenient for businesses in terms of communication. It is one of the reasons why it is preferred because of its low cost and its loyal customers. In terms of companies, it is one of the important factors to obtain prior permission from the consumers to be reached. Because unauthorized e-mails do more harm than good to the business. For this reason, it is important to use e-mail services with prior permission (Dürscheid and Frehner n.d., 2013).

#### **3.2.1.1.6. Internet**

Companies can reach larger target audiences with online marketing. They can do this at less cost and by providing services according to the personal needs and tastes

of customers. Sellers can create a database about buyers with online marketing. They can segment the market according to more realistic criteria. There is a possibility of service every day of the week and every hour. In web marketing, it is possible to attract customers to your site by promoting your products. However, although they are very informative as a product introduction, boring documents with a lot of text or large volumes of images and non-standard web applications do not appeal to users (Fuchs, 2009).

The main feature that enables the internet to be used as an effective and efficient direct marketing tool is that it is an interactive communication tool and allows one-to-one marketing. Advantages of using the internet in direct marketing; Although the low cost provides many advantages, it makes it easier to reach the target by showing itself in areas such as providing personal service, advertising and printing. The speed and convenience provided by the internet on the web page, and the company's information such as telephone and fax are important factors. It has its positive aspects as well as its drawbacks. The most important of these is the insufficient number of people reached. In addition, the fact that every message reaches everyone who is interested or unrelated, some technical problems, viruses that are transmitted along with many files cause disruptions in business and waste of time (Zheng, 2009).

### **3.3.Business Model**

Commerce models are acknowledged as components that are made by tending to the natural components of a commerce which basically characterize why that commerce exists. Although it may be a concept utilized basically for internet-based start-ups that started to develop at the conclusion of the 90s, there's no clear definition of agreement due to its exceptionally wide scope. No matter how it is characterized, there are three questions that a great trade demonstrate looks for to reply. These questions are: "What is customer value?", "How does the firm generate revenue?" and "Who is the customer?". After 2000, "business models" began to enter the management dictionary too much. However, although business models have become a fashionable topic of discussion, there is still much confusion about what business models are and how they are used. Many definitions of "Business models" exist, but none are generally accepted. New companies fall flat in spite of the nearness of showcase openings, modern commerce thoughts, satisfactory assets, and gifted businesspeople. One conceivable reason for usually the essential model that drives the commerce. There has been an

awfully genuine alter within the world in later a long time. Therefore, the way of doing business should be seriously rethought. It is necessary to perceive organizational structures, the definition of the market, marketing understandings, leadership approaches and the whole world in a new way (Massa, Tucci, and Afuah, 2017).

The concept of business model was first mentioned in the articles by Bellman and Clark in 1957 and in Jones articles in 1960. The business model structure is based on the basic ideas of business strategy and the theoretical traditions associated with it. More directly, the business model is based on the value chain concept and advanced considerations of value systems and strategic positioning. Entrepreneurial economies are prominently featured in business model research. An effective model encompasses unique combinations that result in superior value creation, generating superior returns to the firm in return (DaSilva and Trkman, 2014).

The business model has six different functions:

- Configuring value dimensions
- Determine market segmentation
- Define the firm's value chain structure
- To reveal the income generation mechanisms in a specific way
- Indicate the firm's position in the value web
- Formulate the competitive strategy

### **3.3.1. Recommended Frameworks for Business Model Development**

#### **3.3.1.1. Framework Proposed by Osterwalder, Pigneur and Tucci**

Osterwalder, Pigneur and Tucci compared the most cited models and studied their components to identify the most important building blocks among business models in the literature. As a result of this study, nine building blocks of the business model seen in Table 1. Emerged.

***Table 4. Nine Business Model Building Blocks***

| Pillar                    | Business Model Building Block | Description                                                                                                                 |
|---------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Product                   | Value Proposition             | Gives an overall view of a company's bundle of products and services.                                                       |
| Customer Interface        | Target Customer               | Describes the segments of customers a company wants to offer value to.                                                      |
|                           | Distribution Channel          | Describes the various means of the company to get in touch with its customers.                                              |
|                           | Relationship                  | Explains the kind of links a company establishes between itself and its different customer segments.                        |
| Infrastructure Management | Value Configuration           | Describes the arrangement of activities and resources.                                                                      |
|                           | Core Competency               | Outlines the competencies necessary to execute the company's business model.                                                |
|                           | Partner Network               | Portrays the network of cooperative agreements with other companies necessary to efficiently offer and commercialize value. |
| Financial Aspects         | Cost Structure                | Sums up the monetary consequences of the means employed in the business model.                                              |
|                           | Revenue Model                 | Describes the way a company makes money through a variety of revenue flows.                                                 |

As a result of this study, the following definition has been proposed for the business model: "It is a conceptual tool that includes many components and relationships that allows to explain the business logic of a business.

The esteem that a company offers to one or more client sections, and the value necessary to create profitable and sustainable income streams; and it is a definition of the firm structure and partnership relationship that will be created to create, market and deliver the capital relationship (Osterwalder et al., 2005).

### **3.3.1.2. Framework Proposed by Morris, Schindehutte and Allen**

A standard framework has been drawn that defines the business model. This framework; It should be simple, measurable logical, detailed and meaningful. Therefore, a framework is proposed that includes three levels specific to decision-making: 'establishment', 'proprietary' and 'rules'. In addition, 6 decision areas are created at every level.

The Organization Level is the level to characterize the center components. A well-formulated demonstrate ought to address 6 fundamental questions as seen in Table 1. Components that are most consistent with each other; esteem conveyance, the client, inner forms and competencies, and how the firm will make cash. An extra component of competitive technique has been included to these four, reflecting the center competencies and the got to change the esteem suggestion into a maintained commercial center position. At the exclusive level, the objective of the show is to create special combinations of choice factors that give an advantage within the commercial

center. At this level, the system gets to be a customizable device and the entrepreneur focuses on how to form esteem in each of the 6 choice ranges by advancing it. The rules level portrays the directing standards vital to administer the execution of the choices made at levels one and two. In this proposition, answers to a few questions were sought in arrange to create the trade demonstrate. The primary address, "How will the firm make esteem?" is the primary address almost the esteem suggestion. The questions here should address the nature of the product/service blend, the firm's generation and benefit conveyance, and how to form an fitting suggestion to the client. The address "For whom will the firm make esteem?" centers on the nature and scope of the showcase in which the firm competes. Client sorts, geographic disseminations, client interaction necessities have critical suggestions for how the organization is organized, organization asset necessities, and what it offers. "What is the firm's source of inside advantage?" The term 'core competence' is utilized for the inside ability or set of capacities that creates the firm comparatively superior than others. "How will the firm gain cash?" The reply to the address is vital. A center component of the firm's commerce show is its financial demonstrate. The financial demonstrate gives reliable method of reasoning for making a benefit. This issue can be drawn nearer with four subcomponents: the degree of settled versus variable costs that rules the working control or taken a toll structure; the firm's accentuation on tall or moo volumes in terms of showcase opportunity and internal capacity; the firm's capacity to attain moo or tall edges; and the pay demonstrate that incorporates the firm's sources of pay and the versatility of wages. (Morris, Schindehutte, and Allen, 2005).

**Table 5. Six Questions That Underlie A Business Model**

| A Business Model's Underpinning Six Questions                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Question 1: How can we produce value?                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <ul style="list-style-type: none"> <li>- Mainly items, mainly services and a heavy mix</li> <li>- Standardized/some customization/high customization</li> <li>- Wide line, medium breadth and thin line</li> <li>- Deep, medium, and shallow lines</li> <li>- Access to the product, the product itself, or the product packaged with the product of another company.</li> <li>- Internal production or service delivery, outsourcing, licensing, resale, or reselling with value added</li> </ul> |

- 
- Distribution methods: direct and indirect (If indirect, single or several channels.)

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**Question 2: For whom do we produce value?**

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- Organizational Type: B2B, B2C, or Both
- Local/regional/national/international
- Upstream suppliers, downstream suppliers, government agencies, institutions, wholesalers, retailers, service providers, and end consumers are all customers in the value chain.
- General or broad market, many market segments, specialty market
- Transactional/relational

---

**Question 3: Where do we get our expertise from?**

---

- Operating/production systems
- Selling/marketing
- Management, mining, and packaging of information
- Technology, research and development, inventiveness, and intellectual
- Arbitrage/financial transactions
- Supply chain administration
- Using networks and resources

---

**Question 4: How do we position ourselves to compete?**

---

- A reputation for operational excellence, reliability, dependability, and speed
- Quality, selection, features, and availability of a good or service
- Innovation management
- Low cost/efficiency
- Intimate client interaction or relationship

---

**Question 5: How do we earn money?**

---

- Fixed, mixed, and flexible sources of pricing and revenue
- Leverage levels: high, medium, and low
- Volumes: high/medium/low
- Margins: high/medium/low

---

**Question 6: What are our goals in terms of time, scope, and size?**

---

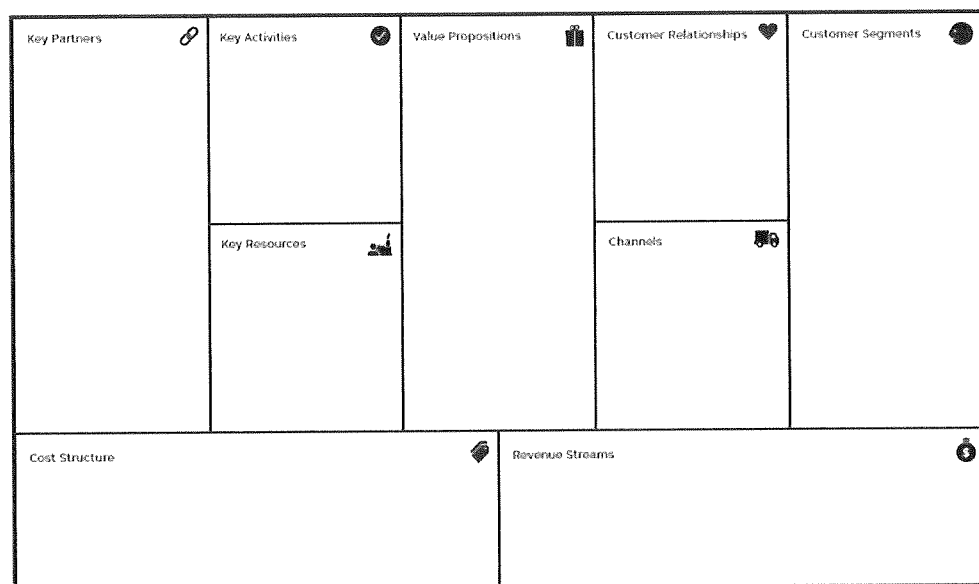
- 
- Subsistence approach
  - Income approach
  - Growth approach
  - Speculative approach
- 

### 3.3.2. Canvas Business Model

The Canvas Commerce Demonstrate may be a show created by Alex Osterwalder that connects significance to effortlessness. It puts the esteem advertised to the buyer at the central point. Osterwalder and Pigneur put it this way: “What we require could be a commerce show that everybody can get it. We ought to begin from the same point and conversation almost the same thing. The concept ought to be basic, significant, and instinctively reasonable.

*But it ought to moreover maintain a strategic distance from distorting the complex aspects”.*

**Table 6: The Business Model Canvas**



The Canvas trade demonstrate gives a common dialect for characterizing, visualizing, assessing and altering trade models and comprises of nine building pieces. (Sparviero, 2019).

- 1- **Customer Segment:** A commerce serves one or more client fragments. Within the Client Section area, this segment or areas are characterized.
- 2- **Value Propositions:** Businesses need to undertake to discover arrangements to customers' issues and meet client needs with esteem recommendations. The center of the trade arrange is the esteem suggestion.
- 3- **Channels:** Esteem suggestions are conveyed to clients through communication, conveyance and deals channels. By characterizing the channel structure, the focuses where the client is come to are decided.
- 4- **Customer Relations:** Client relations are set up and kept up with each client office. What sorts of client connections will be created and which ones are economical are clarified in this segment.
- 5- **Revenue Streams:** Income streams are given by effective esteem suggestions displayed to client portions. The structure of the income stream is characterized and the long run income stream is overseen from this point.
- 6- **Key Resources:** Key assets are required to convey and disseminate other components display within the model. These assets have to be secured and always accessible.
- 7- **Core Activities:** A number of key exercises are being created that are vital for the presence of the trade. These exercises provide an thought of what the commerce does.
- 8- **Key Partnerships:** A few exercises are outsourced and a few assets are obtained through key associations exterior the association. Associations are built up and kept up to reach these assets.
- 9- **Cost Structure:** Other components within the trade demonstrate are assessed with the taken a toll structure. Taken a toll structure ought to be arranged in a way to extend competitiveness.

### 3.4.Review of “Amazon” Business Model

As of now, “Amazon.com” is the world's biggest e-commerce company. It has done this by utilizing particular trade models, which offer captivating information on how esteem is made and productively captured whereas working with rivals. Amazon.com has proceeded to create its commerce demonstrate, pushing the limits of what is conceivable on the web, though the larger part of dab com endeavors regularly works on the premise of basic commerce models with pre-specified income streams. It can be

contended that Amazon.com's competitive procedures have played a critical part within the advancement of the company's trade show. Amazon.com begun off as a web bookshop in July 1995, and by September of that year, it was making \$20,000 in week by week deals. After working as a web bookseller for nearly three a long time, the commerce rapidly extended its item line to incorporate things other than books, beginning with music, motion pictures, toys, and hardware. The opening of several additional stores, including ones for software and home improvement, came after these diversifications. Parallel to these product diversifications, Amazon.com launched its first international sites, Amazon.co.uk and Amazon.de, in October 1998 by acquiring the German-owned Telebook and the UK-based online retailer book pages. This was justified by Amazon.com's "grow big fast" strategy, which aimed to make Amazon the largest mass merchandiser in the internet marketplace. The "grow large quickly" approach was used in conjunction with a general company strategy that places the client first. According to Amazon.com's Annual Report from 1997, the business model's primary objective was expansion rather than profitability, and this objective could be attained by putting a long-term emphasis on customers. The company's objective was expressed to be "the foremost customer-centric organization within the world" within the Yearly Report of 1998. This priority is still there nowadays. The reason of Amazon.com is to "be the foremost customer-centric company on Soil where individuals can look and find anything they need to purchase online," agreeing to the firm's site. This claim has been bolstered by the presentation of items and administrations that have gone past the beginning online deals of books to incorporate the deal of any kind of item, counting the conveyance of online substance and administrations by means of Ignite gadgets and tablet computers. Amazon.com has earned a notoriety for being a trade that prioritizes its clients over all else, indeed at the hazard of not paying consideration to or reacting to rivals. Jeff Bezos, CEO of Amazon.com, made the taking after explanation in reaction: "We do not overlook competitors; we attempt to be delicate to what they are doing, and there are things that we benchmark exceptionally closely. But endeavoring to create these customer-focused strategies is where a part of our company's and culture's vitality and inspiration start from. And in truth, i accept that they perform superior in energetic settings." In reality, Amazon.com's unmistakable state of mind to rivals illustrates the customer centricity of its generally trade demonstrate and technique. Amazon.com's commerce show has made noteworthy utilize of coopetition in specific since the organization sees it as a

implies of creating indeed more prominent client esteem than would something else be accessible. Amazon.com has been especially particular in its information of how competitors can too be collaborative accomplices within the interest of improved shopper esteem from the start, indeed in spite of the fact that this esteem creation potential serves as the establishment for all coopetition endeavors. (Ritala, Golnam, and Wegmann, 2014).

The company's knowledge that the web commerce segment can suit various competing endeavors in numerous parts which there's potential for collaboration in these extending markets is the primary sign of Amazon.com's competitive mentality. The understanding that the strategies, foundation, and brand of Amazon.com are more valuable to the clients when they are utilized as broadly as conceivable, counting through the utilization of competitors, is the moment major issue persuading Amazon.com's competitive aspirations. As the discussion and comments recorded over illustrate, Amazon.com has been centered on making esteem for its clients and has decided that participation may play a noteworthy part in accomplishing this objective. In a few of the coopetition-based commerce models over the history of the organization, certain procedures and methods of insight related to coopetition as a portion of client esteem creation have been put into reality. Besides, since it has been continuously consolidated into Amazon.com's commerce show over time, the part of coopetition can be considered as a developing component of the company's technique.

By expanding its item offerings through the creation of modern stores, Amazon.com transitioned from being a web bookstore to a shopper shopping stage. In November 2000, Amazon.com extended its commerce demonstrate to include a third-party commercial center. The primary utilizes of Amazon.com's coopetition-based commerce techniques was Amazon Commercial center. In quintessence, it permits vendors to utilize e-commerce devices and administrations to offer their products nearby Amazon.com on the same item detail page on the site, seeking after what Jeff Bezos alluded to as "the one store methodology." To put it another way, a single page gives the client the choice to purchase a brand-new thing specifically from Amazon.com or a brand-new or utilized thing from another dealer on the Amazon Commercial center. In quintessence, Amazon Commercial center is the leading illustration of a agreeable commerce methodology. In arrange to encourage collaboration, Amazon.com gave third-party dealers computerized strategies to move

their millions of modern, utilized, and out-of-print book inventories into the modern item pages inside the Amazon.com books tab. As a result, they were given the chance to offer their products on prevalent websites that had already exclusively advertised things from Amazon.com. Indeed assist, Amazon.com included a work that permitted solitary book buyers to offer their claim books for deal on the Amazon.com item page (Betz, 2016).

The subsidiary Amazon Services, created to assist other shops in enhancing their online presence, was officially launched in 2003. Various e-commerce services provided by Amazon Services enable retailers to control pricing and other transactional terms, manage and coordinate the logistical processes for the transfer of physical or digital goods, guarantee the quality of the goods sold, confirm the reliability of buyers and sellers, settle payments, and set up fund's transfers. Amazon released the Kindle e-reading device to the public in November 2007. The "AZW" format, which is exclusive to Amazon.com, is used by Kindle to display books.

The Ignite 2 is an made strides form of the Arouse that Amazon.com discharged to the advertise in February 2009. The declaration that Arouses books had surpassed print books on Amazon.com came on May 20th, 2011. Counting books without Encourage versions and barring free e-books, Amazon detailed that since April 2011, it had sold 105 books for its Encourage e-reader for each 100 hardcover and soft cover books sold. It is curiously to note that Amazon.com has been within the print book industry for 15 a long time, whereas the company has as it were been within the Encourage book showcase for less than 4 a long time. Three out of each four books sold are allegedly in Ignite format. As a result, the extension of e-books could be a key component of Amazon.com's "ended up huge rapidly" procedure; in this occurrence, the presentation of the coopetition-based commerce show came after the development had as of now started.

Generally, Amazon.com has changed from a web retailer to one of the beat environments for media and web administrations in almost 15 a long time since to the coopetition-based commerce models laid out over. The longitudinal case displayed recommends that competitive intuitive can include esteem for the industry members in a way that would not be conceivable through the isolated application of competitive and collaborative methodologies. Competitive intelligent can shape the person

commerce models of the central performing artists (Wadhwa, Vashisht, and Phutela, 2020).

#### **4. DIGITALIZATION**

Many activities are starting to take place in digital settings as a result of growing digitalization and, in particular, information technology advancements. Traditional purchasing practices have begun to give way to online shopping, where new, creative methods are appearing daily. Due in large part to the growing use of digital technology, consumers can now easily compare and select the product with the qualities they desire from a wide range of alternatives. Due to this circumstance, both domestic and foreign enterprises must operate in a more cutthroat atmosphere. Determining how digitization is affecting the economy and trade is crucial for this reason. Globalization, the process by which national economies are integrated into a broad interconnected global economic system, has led to significant growth in international trade. The Internet and, accordingly, digital services are becoming increasingly widespread all over the world. Digitalization is changing the way people communicate and interact with their environment. New technologies and devices, including smartphones, computers, driverless cars, and smart wearables, are all changing the way information is accessed and disseminated. The development of information and communication technologies and the innovations that arise in parallel increase the growth performance of economies. Technological innovations play an important role in growth. Developments in information and communication technologies also affect global trade models. The continuous digitalization of financial forms has driven to the rebuilding of financial exercises. At this point, it is conceivable to conversation around the Computerized Economy approach as a critical concept. With the computerized economy approach, the application of internet-based advanced advances to the generation and exchange of products and administrations has ended up a progressively vital portion of the worldwide economy. Web; It can make a more straightforward advertise by decreasing the costs that buyers have to be cause to get data almost dealer costs and item offerings. The sum of looks made by buyers increments as the Web causes look costs to diminish. With decreased look costs and expanded look volume by buyers, cost competition between dealers gets to be more furious, in the long run coming about in lower showcase costs. Providing real-time communication between economic actors and thus

reducing search costs has helped to overcome geographical distance and sometimes even resulted in the disappearance of distances (Kantarci, Özalp, and Sezginsoy, 2017).

#### **4.1. Development and Economic Impact of Digital Technologies**

Increasing globalization and the competitive conditions it brings along with the development of technology have started to create differences in the service processes of enterprises. It is conceivable to say variables such as the improvement of data advances and the increment in digitalization among the most reasons for this separation. Long financial waves, too called Kondradiev waves, relate to developments and advances that alter not as it were generation forms, but too the way of life. After the steam, steel, power and petrochemical transformations, network-based digitalization is the driving constrain of the commerce and private life scene nowadays. The Internet, which started in the 1990s and has become increasingly widespread, allows information technology systems to be connected easily and inexpensively. Innovations in information and communication technologies (ICT) are considered radical innovations. Their introduction as a general-purpose technology provides a host of technological and organizational changes in a wide variety of activities. For example, telegraph and internet are inventions that require large infrastructure investments after their inventions. It has influenced not as it were the broadcast communications or IT divisions, but too the commerce procedures of all companies that are not portion of these divisions. Nowadays, data innovation is considered as 'general reason technology'. In this course, it empowers regulation ventures and coordination, which leads to an increment in efficiency by lessening costs. It empowers companies to offer unused items or administrations; timing, quality and assortment cause positive outside impacts. On the other hand, contrasts within the financial execution and worldwide competitiveness of nations generally depend on the selection, accessibility and utilize of Data and Communication Advances (ICT). Different development hypotheses emphasize the significance of innovative alter as a source of financial development. These speculations advocate the view that advancement is the most driver of financial development in worldwide economies. Moreover, numerous ponders have investigated the degree of innovation's commitment to competitiveness and development of firms, businesses, and national economies. For this reason, the concepts of innovative alter and development have ended up an imperative investigate zone for researchers in numerous regards (Evangelista, Guerrieri, and Meliciani, 2014).

Schumpeter investigated Britain, Germany, and the United States in his book "Business Cycles," which was released in 1939. He concentrated on five industries, mainly textiles, railroads, steel, autos, and electricity, which he believed had a substantial impact on economic progress. According to him, the most important factor that enables the economy to move forward is "Innovation". In addition, innovations will emerge thanks to entrepreneurs working in companies. Schumpeter emphasized that the concept of innovation does not have a single meaning, but innovations can be made in many different ways. While these are sometimes a new product, they may mean a new merger or the discovery of new markets for the company. Advanced capital, labor and technological progress are the three main sources of economic growth of nations. Innovation is the key driver for businesses and countries as it builds on technological changes. Therefore, most theorists draw attention to the concept of technological progress and its significant effects on economic growth (Magomedov, Murzaev, and Bagov n.d., 2020).

In this direction, the increasing digitalization and developing new technologies are among the critical issues in many respects. Because new digital technologies and the internet unlock many potentials to increase economic efficiency, greatly reducing search, entry, transportation and reproduction costs.

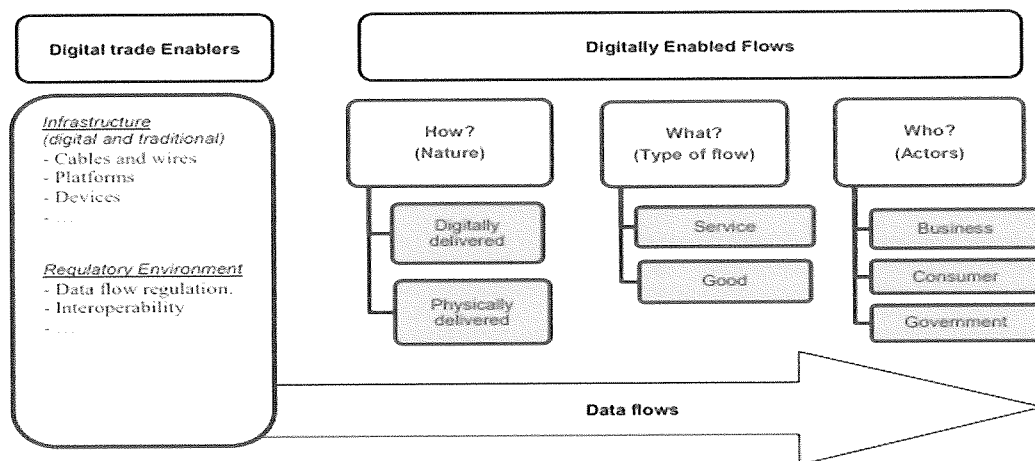
#### **4.2.Digital Economy and Digital Commerce Approach**

In later a long time, the increment in worldwide exchange and computerized systems has begun to pick up energy. From a financial point of see, the digitalization of financial exchanges has driven to the rebuilding of numerous financial exercises. Digitalization, concurrent communication with financial on-screen characters, decreases look costs with straightforwardness and makes an electronic environment instead of physical separations, which makes a difference to overcome topographical separations. This computerized arrange creates important intelligent, particularly within the setting of international trade. Digital systems empower buyers and venders to put through quicker, and communication and coordination costs can be decreased. Sometime recently the advanced approach, the method for the most part takes put physically. Nowadays, businesses advantage incredibly from advanced innovations in terms of the administrations they give and coming to clients. With the computerized economy approach, the application of internet-based computerized advances to the generation and exchange of merchandise and administrations has gotten to be a

progressively vital portion of the worldwide economy (Babbitt, Brynjolfsson, and Kahin, 2001).

Another approach that risen with digitalization is the concept of "Computerized Commerce". In spite of the fact that there's no single known and acknowledged definition of the concept of digital commerce, there's developing agreement that it envelops carefully empowered commerce exchanges in products and administrations that can be displayed carefully or physically which include buyers, firms and governments. That's, whereas all shapes of advanced commerce are given by advanced innovations, not all computerized commerce may be conveyed carefully. In this setting, advanced stages are getting to be progressively imperative to encourage online exercises, primarily by lessening exchange and data costs for businesses and customers. These stages exist in numerous regions such as computer program working frameworks, entries, media, healthcare and installment frameworks. The stages make a two-sided advertise by interfacing two diverse conclusion client bunches, producing arrange benefits (Taşel, 2020).

**Table 4. An Unofficial Classification of Digital Trading**



According to Table 4, digital commerce refers to the process of performing transactions of different product groups between businesses or with consumers in an online environment. Information flow is one of the most important elements in the realization of these processes.

The utilize of advanced commerce exchanges increments the speed at which trade operations reach more partners and react to orders more successfully. Advanced

commerce exercises too successfully combine inter-organizational exercises, online connections such as providers, merchants, accomplices and clients on a worldwide premise. Digitalization increments the scale, scope and speed of commerce. It empowers companies to bring unused items and administrations to more carefully associated clients around the world. It too empowers businesses, particularly little ones, to utilize unused and imaginative computerized devices such as to overcome obstructions to development, offer assistance encourage installments, empower collaboration, maintain a strategic distance from contributing in settled resources through the utilize of cloud-based administrations, and utilize elective financing instruments (Teo, 2001).

The dimensions of digital commerce can basically be grouped under 3 categories;

- **How the transaction is done:** It determines which transactions are digital commerce.
- **Product:** It includes information/data as an additional product in addition to goods and services.
- **Actors subject to transaction:** It refers to actors subject to digital commerce.

With digital commerce, different dimensions of commerce come to the fore. With the development of e-commerce, a better understanding of the order and shipping processes of products has been achieved and different actors involved in international trade have started to come to the fore. E-commerce revamps conventional exchange structures with the adaptability advertised by electronic systems. Different enhancements, such as diminishing costs, as well as expanding competitiveness and productivity, are conceivable by updating conventional structures. Another imperative point is that e-commerce can increment the productivity of the supply chain by giving synchronous data approximately item accessibility, stock level, generation prerequisites. In expansion, e-commerce can play an imperative part in expanding participation by sharing data with other accomplices within the supply chain on issues such as request determining and generation arranging. Without a doubt, e-commerce has appeared noteworthy improvements with the increment in advancement patterns. Later changes in installment frameworks have made this segment indeed more appealing. With the increment within the introduction towards portable applications

and the web being utilized more effectively through versatile phones, the introduction towards e-commerce has expanded instead of physical spaces.

As a result of the expansion of payment systems as well as the diversification of cargo options and the increase in innovative activities in this sense, there are developments in e-commerce volume (Georgiadis, Stiakakis, and Ravindran, 2013).

#### **4.3.Industry 4.0**

The fourth mechanical insurgency, which is still within the improvement arrange, lays the basis for all on-screen characters included in mechanical generation to communicate with each other, to get to all data at the same time, and to make tall, included esteem through these information. The fast improvement and integration of computer equipment, computer program, systems and computerized innovations, which are the determinants of the 3rd Mechanical Insurgency, changed social orders and the economy, fair as after the rural transformation or mechanical insurgencies. With the spread of data innovations and computerization, an unused organize has been come to in which cyber-physical frameworks, energetic information handling and esteem chains are interconnected. Territorial, financial, innovative and product streams that influence the course of the world and shape its future; with the interconnection of sensors, generation devices and data advances, mechanical chains have been shaped past a single company (Özsoylu et al., 2017).

- This unused handle is considered as the fourth organize of industrialization. This period is called “Industry 4.0” in German writing and “Industrial Internet” in English writing. It is conceivable to characterize the best definition of this unused time, to be specific Industry 4.0, as "Web of Machines, Computers, People and Things". Industry 4.0 may be a collective term that incorporates numerous modern computerization frameworks, information trades and generation advances. The foremost vital recognizing components of Industry 4.0 can be assembled beneath three headings;
- **Speed:** Mechanical improvements within the unused period are creating at an awfully quick pace. A modern mechanical improvement is seen each day, and unused innovative improvements clear the way for more current ones.
- **Breadth and Depth:** The improvements within the unused period are based on the computerized insurgency. Be that as it may, this quick advancement leads

to profound changes not as it were within the generation structure, but moreover within the commerce world, society and the living conditions of the person.,

- **System Effect:** The unused period changes the structure of companies, segments but moreover nations and incorporates the all-encompassing change of frameworks (Ghobakhloo, 2020).

Industry 4.0 is a collective whole of technologies and concepts of value chain organizations. Industry 4.0;

- Cannot happen without an IT infrastructure,
- Realizes smart production with information infrastructure,
- The process will be solid with legal infrastructure,
- Will continue to develop with new business models.

#### **4.3.1. IT Infrastructure**

It is not possible to reach the fourth stage of the industry (Industry 4.0) without an IT infrastructure. In order to be successful, it is essential that the infrastructure is created smoothly and according to the requirements of the age. Therefore, first of all, the elements that make up this infrastructure should be well understood. Indispensable for Industry 4.0; elements such as IPv6, cloud computing system, broadband, cyber-physical systems and the internet of things should be implemented (Weill, Subramani, and Broadbent, 2002).

##### **4.3.1.1.IPv6**

All gadgets interfacing to the Web require an IP address. Each computer associated to the Web is allotted an IP address, and other computers reach this computer with this address. In other words, two diverse gadgets must have an IP address in arrange to communicate. A web page server can too be associated by writing the net browser IP address; in any case, since it isn't down to earth to compose these numbers, a space title framework comparing to the IP address is utilized. These connections have been provided for many years with the IPv4 protocol. When IPv4 was first released, developments were not foreseen and the number of addresses was limited to 4.3 billion. After the widespread use of the Internet and the developing technology, these addresses were quickly consumed and new solutions were sought. Introduced as a solution in 1996, when the number of Internet users exceeded 2 billion, especially when connecting

things to the Internet came to the fore, IPv6 was designed to provide much more IP addresses.

With this new system, expanded address space, new security features, improved quality of service features, automatic address configuration and expandability features have been gained (Caicedo, Joshi, and Tuladhar, 2009).

#### **4.3.1.2. Broadband System**

Today, communication and communication opportunities without the Internet are extremely limited. Within the framework of technological developments, narrowband and broadband concepts have emerged according to internet access speeds. More importantly, today's technologies have features that cannot work without infrastructure. As technology develops, Mbit/s indicators that determine the current broadband concept will also change. As a matter of fact, in 1G communication, where analog modulation and the system were used before, the coverage area is very low, only voice transmission can be made to each user with a certain frequency separation and away from cellular, while digital communication has been provided with the developing 2G and its most important representative GSM, and with the increase in the quality of voice communication, data transmission has been achieved. Later, 3G was launched to users and offered to high quality users in mobile internet service-broadband internet access-multi-media applications. 4G and the latest trend 4.5G were introduced after 3G could not complete its expansion. Broadband technology and applications are not only related to information technologies and information systems, but also make themselves felt in many different sectors. Broadband is in a position to pave the way for economic development, growth, creation of new employment areas, and savings and efficiency in infrastructure investments. Having global competitiveness has now become an integral part of long-term development plans. Continuous investment is required for the development of broadband services, therefore, sharing the local network, where the amount of investment and service diversity is high, is encouraged by technologically developed countries (Küçük et al., 2016).

#### **4.3.1.3. Cloud Computing System**

On the one hand, computers are getting smaller and cheaper, almost every individual carries a computer in their pocket, and on the other hand, the widespread and

accessible use of the internet necessitated the change and development of the information infrastructure.

In order to adapt to these changing and developing conditions, “cloud computing” has been developed and is still an ongoing process.

In its simplest form, cloud computing is defined as “receiving services related to information systems from third parties”. Cloud Computing System can also be defined as “a service structure that enables applications to be run over a remote server in the internet environment or to keep user data accessible on the remote server at any time”. Computer experts state that all computer users will switch to the cloud computing system in a short time. With the development of this sector, many new sectors will come into operation. Cloud computing will have a major impact primarily on telecom and IT sectors, as well as sectors such as media, government, education and health. Undoubtedly, its biggest impact is laying the groundwork for smart production.

Today, there has been a trend towards cloud computing in the information and communication technologies sector, and companies serving globally have started to offer solutions in line with this trend. Cloud computing is more of a transformation than an innovation (Shen and Tong, 2010).

#### **4.3.1.4. Internet of Things**

The Web of things is characterized as the objects existing within the world that some way or another get to the Web and communicate with other gadgets. In spite of the fact that no agreement has been come to, the Web of Things is characterized as "a around the world arrange of interestingly addressable objects shaped among themselves, and the objects in this arrange communicating with each other with a specific convention". It is additionally conceivable to characterize this concept as a framework of gadgets that communicate with each other and shape an cleverly organize by interfacing and sharing data through different communication conventions (Wortmann and Flüchter, 2015).

Within the report distributed by the Worldwide Media transmission Union (ITU) in 2005, arguing that the objects within the world will be associated both perceptually and intellectuals after mechanical advancements as the Internet of Things;

- Item identification (labeling objects)
- Sensor and wireless sensor networks (sensing objects)
- Embedded systems (thinking things)
- Nanotechnology (shrinking objects)

Cascaded the internet of things. The ultimate goal of these developments has been determined as Standardization/Harmonization and Confidentiality/Social-Ethical aspects. Many advantages are gained by the active and detailed use of the Internet of Things; (Ercan et al., 2016)

- In the production phase, the production and production process become practical since the managers can easily intervene in the production process with smart communication tools, regardless of their position.
- The supply chain is getting smarter by means of sensors and labels to be placed on the objects.
- Since the internet of things will be realized through smart devices, energy and infrastructure costs are reduced.
- In a factory where machines and robots manage the production process, human resources are also less needed.
- Increase in income and profit level is provided.

#### **4.3.1.5.Big Data**

Huge information is the title given to information sets that are as well expansive and complex for current data frameworks to handle. In other words, information that surpasses the information collection, capacity, administration and examination capabilities of known database administration frameworks and program instruments is called "Big Data. Big data includes every move a user makes on the internet. Every site visited during the day; every point clicked on the site is a data. Until now, all this information has been described as information garbage, since it is not possible to store the data in existing databases and use it in reporting systems.

These movements on the internet, which have existed since the first day of the internet, but whose importance and function have just been understood, have now begun to be analyzed and evaluated, and big data has emerged. For a long time, these data were stored in pre-designed tables in the form of predetermined numerical or verbal data types and became big data. However, the important thing is not the volume of the data,

but the ability to analyze it and turn it into a value. All this information is now intended to be used and it is aimed to extract treasure from the information dump (Sagiroglu and Sinanc, 2013).

For this reason, the concept of enormous information has as of late been characterized as "the utilize of covered up data and astonish relationships with factual and information mining procedures by coordination distinctive advanced information sets of businesses, governments and organizations". Enormous information is an application that creates it conceivable to create choices by utilizing numerous diverse information together. In expansion to its tall volumes, huge information comprises of data with tall information generation speed and tall information inconstancy and gives bolster for choices to be taken with modern data preparing and examination strategies, making sense of information and optimizing forms. Enormous information offers exceptionally vital openings. There are three vital values that can be accomplished basically: diminishing costs, moving forward decision-making, and progressing items and administrations. Enormous information, when deciphered with the proper examination strategies, will clear the way for businesses to be more exact in their choices, oversee their dangers superior, and dare innovative breakthroughs. Considering that the correct methodologies can as it were be delivered based on the correct data, the significance of huge information for Industry 4.0 is additionally clear (Doğan and Arslantekin, 2016).

#### **4.3.2. Smart Manufacturing**

Cleverly generation frameworks are frameworks where all the components that make up the generation prepare perform their capacities independently and in communication with each other. Brilliantly fabricating undertaking implies a mechanical undertaking that's solid and has the most noteworthy level of information get to, and is characterized as undertakings with a tall level of optimization. Businesses that embrace savvy fabricating are moreover adaptable and effective. Savvy fabricating can be characterized as the extreme objective of Industry 4.0. Much appreciated to savvy generation, the essential reasoning of Industry 4.0, which is to play down the human calculate within the generation handle and to make a generation handle with sensors, computerization and idealized forms, will be realized. In this way, within the unused time, a large communication arrange has been made among the generation staff,

and adaptable and energetic self-organized generation forms will be realized in arrange to supply preferences related to generation for the personalized items that have the most prominent request of the shoppers. It has been clear that a unused period will be entered in generation with the arrangement of foundation such as the web of things, huge information and cloud frameworks.

With the introduction of cyber-physical systems, robots and 3d printers into the smart production process, the old understanding of production will change and flexible production, which has been discussed for many years, will come into play (Davis et al., 2015).

#### **4.3.2.1.Cyber Physical Systems**

Cyber physical systems are one of the indispensable elements of smart manufacturing systems. Without cyber-physical systems, automation in production and a systematic flow of the process cannot be achieved. Intelligent production will be realized with the help of cyber-physical systems built on the infrastructure described above. Cyber-Physical systems are systems that can carry out production processes such as monitoring, coordination and control, and operations performed in the logistics and value creation process at the highest level. In this system; With the help of sensors and actuators, the physical world is connected with the virtual computing world. Thanks to this system, which consists of different constituent components, global behaviors are created. These components include software systems, communication technologies, sensors/actuators, often including “embedded technologies” to interact with the real world (Wolf, 2009).

Cyber-Physical Systems that combine these two worlds consist of two important elements: the can access the data very quickly and process the obtained data and include it in the production process. In addition, since it is possible to establish a connection with the outside world, it is possible to adapt to external conditions (Breit and Ransom, 2014).

#### **4.3.2.2.Robotic Systems**

Robots, which are the collaborative work areas of many disciplines such as Mechanical Engineering, Electrical and Electronics Engineering and Computer Engineering, are multifunctional, reprogrammable, designed to move special parts

through materials, parts, tools or variable programmed movements to perform various tasks, are manipulators. Robots are managed with a program (software) and replace human power, prevent unnecessary power loss and save time.

In order for a device to be described as a robot, it must first operate autonomously. In other words, robots can perform their defined functions without direct human intervention. When the development process of robots is examined, it has been studied on the use of robots instead of humans, and robot studies have been focused especially on communicating with machines. For a long time, he worked on production lines away from people, except for the installation and maintenance stages (Kortenkamp, Simmons, and Brugali, 2016).

The use of robots in industry has been in question since the early 1960s. The robot called the ultimate, which was first used in printing processes at General Motors in 1961, was dependent on the human factor. However, robot technology has developed rapidly in a short time. In recent years, industrial robot technology, especially robot arms, has reached maturity to meet many needs in production. It provides the desired speed, accuracy and ease of use. Studies on robots have focused mainly on improving their "sight" functions, thus hand-eye coordination. In addition, research and development studies in this field have gained momentum in the direction of maturation of robot-robot and robot-human interaction.

As robot technology develops, flexibility in production will be provided and the transition to smart production will accelerate. The widespread use of industrial robots and the adaptation of robots to the flexible working environment, as well as the facilitation of robot calibration and use, and the diversification and reduction of robots in size to meet simpler industrial needs, will also pave the way for the realization of smart production (Görçün, 2018).

## **5. DIGITALIZATION OF INTERNATIONAL TRADE**

### **5.1.Purpose of the research**

In this study, it was tried to determine whether there is a relationship between the research questions measuring the digitalization of international trade and demographic variables. The relationship of each of the 21 questions asked about the digitalization of international trade with demographic variables such as gender, last graduated school, age and position worked was tested. Thus, for example, it has been

determined whether the groups of women and men are related to the groups of variables that measure the digitalization of international trade.

### **5.2.Data Collection Method**

The data were collected through a questionnaire consisting of 25 questions prepared online on the Survey Monkey website.

### **5.3.Sample and Population**

The sample of this study consisted of 100 people who participated in the online survey. However, since 13 of the participants did not answer the research questions, the data were analyzed on a total of 87 samples.

### **5.4.Analysis of Data**

In this study, there are 21 research questions consisting of 5 categories between completely agree (1) and completely disagree (5). The gender variable, which is one of the demographic questions, consists of 2 categories as male and female. The last graduated school variable consists of 4 categories: high school, university, master's and doctorate. The age variable consists of 5 categories: 18-25, 25-40, 41-50, 51-65 and 65+. Finally, the position level variable consists of 5 categories: director, senior manager, mid-level manager, Specialist and Specialist Assistant. Whether the demographic variables were related to the research variables was tested with the chi-square test since all of the variables were categorical.

The chi-square test measures the relationship between two categorical variables by means of the contingency table obtained from the variable groups. As a result of the calculation made on the observed and expected cell values, it is revealed whether the variable groups are independent from each other. For tables larger than 2x2, at most 20% of the expected cell values in the Chi-square test can be less than 5 (Yates, Moore & McCabe, 1999). For samples with more than 20% cell values less than 5, Fisher's exact test should be used instead of the chi-square test. This test gives the Fisher-Freeman-Halton Exact Test value for tables larger than 2x2. <sup>1</sup>If the results of the Chi-square or Fisher-Freeman-Halton Exact Test are significant (significant), the significance value should be checked for each cell individually. This value is the adjusted residuals value in SPSS. If the adjusted residual values are less than the critical

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<sup>1</sup><https://www.ibm.com/support/pages/node/420335>

value of -1.96 or greater than +1.96, which is the critical value for 5% significance, it can be said that that cell differs significantly from other cells. MacDonald & Gardner (2000) stated in their study that since this significance value is calculated for many cell values, Bonferroni adjustments should be made in order to prevent Type 1 Error. However, Sharpe (2015) stated in his study that adjusted residual values can be used without the need for Bonferroni adjustments. Adjusted residual values in our study were used without Bonferroni adjustments and the results were interpreted accordingly.

Finally, the correlation relationships of the research variables with each other were examined. Since the research variables were categorical variables, Kendall's Tau was used for correlation measurement. Kendall's Tau measures the strength of the relationship between two ordinal variables (Puka, 2011). The results were interpreted by looking at the Kendall's Tau correlation coefficient for the variables that had a significant correlation between them.

### **5.5. Research Hypotheses**

In this study, analyzes were made on categorical data. Chi-square independence test is used in analyzes with categorical data. This test tells whether two categorical variables are independent of each other. In this case, the hypotheses to be established will be "H0: two variables are independent of each other" and "H1: two variables are not independent of each other". In this study, it was measured whether there was a relationship between demographic variables and research variables. In this case, the null and alternative hypotheses for the relationship between the gender variable and the research variables will be established as follows.

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H0.1: Gender and Q1 is independent of each other.

H1.1: Gender and Q1 is dependent of each other.

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H0.2: Gender and Q2 is independent of each other.

H1.2: Gender and Q2 is dependent of each other.

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H0.3: Gender and Q3 is independent of each other.

H1.3: Gender and Q3 is dependent of each other.

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H0.4: Gender and Q4 is independent of each other.

H1.4: Gender and Q4 is dependent of each other.

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H0.5: Gender and Q5 is independent of each other.

H1.5: Gender and Q5 is dependent of each other.

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H0.6: Gender and Q6 is independent of each other.

H1.6: Gender and Q6 is dependent of each other.

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H0.7: Gender and Q7 is independent of each other.

H1.7: Gender and Q7 is dependent of each other.

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H0.8: Gender and Q8 is independent of each other.

H1.8: Gender and Q8 is dependent of each other.

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H0.9: Gender and Q9 is independent of each other.

H1.9: Gender and Q9 is dependent of each other.

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H0.10: Gender and Q10 is independent of each other.

H1.10: Gender and Q10 is dependent of each other.

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H0.11: Gender and Q11 is independent of each other.

H1.11: Gender and Q11 is dependent of each other.

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H0.12: Gender and Q12 is independent of each other.

H1.12: Gender and Q12 is dependent of each other.

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H0.13: Gender and Q13 is independent of each other.

H1.13: Gender and Q13 is dependent of each other.

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H0.14: Gender and Q14 is independent of each other.

H1.14: Gender and Q14 is dependent of each other.

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H0.15: Gender and Q15 is independent of each other.

H1.15: Gender and Q15 is dependent of each other.

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H0.16: Gender and Q16 is independent of each other.

H1.16: Gender and Q16 is dependent of each other.

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H0.17: Gender and Q17 is independent of each other.

H1.17: Gender and Q17 is dependent of each other.

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H0.18: Gender and Q18 is independent of each other.

H1.18: Gender and Q18 is dependent of each other.

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H0.19: Gender and Q19 is independent of each other.

H1.19: Gender and Q19 is dependent of each other.

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H0.20: Gender and Q20 is independent of each other.

H1.20: Gender and Q20 is dependent of each other.

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H0.21: Gender and Q21 is independent of each other.

H1.21: Gender and Q21 is dependent of each other.

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The null and alternative hypotheses for the graduation variable were established as follows.

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H0.1: Graduation and Q1 is independent of each other.

H1.1: Graduation and Q1 is dependent of each other.

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H0.2: Graduation and Q2 is independent of each other.

H1.2: Graduation and Q2 is dependent of each other.

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H0.3: Graduation and Q3 is independent of each other.

H1.3: Graduation and Q3 is dependent of each other.

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H0.4: Graduation and Q4 is independent of each other.

H1.4: Graduation and Q4 is dependent of each other.

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H0.5: Graduation and Q5 is independent of each other.

H1.5: Graduation and Q5 is dependent of each other.

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H0.6: Graduation and Q6 is independent of each other.

H1.6: Graduation and Q6 is dependent of each other.

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H0.7: Graduation and Q7 is independent of each other.

H1.7: Graduation and Q7 is dependent of each other.

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H0.8: Graduation and Q8 is independent of each other.

H1.8: Graduation and Q8 is dependent of each other.

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H0.9: Graduation and Q9 is independent of each other.

H1.9: Graduation and Q9 is dependent of each other.

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H0.10: Graduation and Q10 is independent of each other.

H1.10: Graduation and Q10 is dependent of each other.

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H0.11: Graduation and Q11 is independent of each other.

H1.11: Graduation and Q11 is dependent of each other.

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H0.12: Graduation and Q12 is independent of each other.

H1.12: Graduation and Q12 is dependent of each other.

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H0.13: Graduation and Q13 is independent of each other.

H1.13: Graduation and Q13 is dependent of each other.

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H0.14: Graduation and Q14 is independent of each other.

H1.14: Graduation and Q14 is dependent of each other.

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H0.15: Graduation and Q15 is independent of each other.

H1.15: Graduation and Q15 is dependent of each other.

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H0.16: Graduation and Q16 is independent of each other.

H1.16: Graduation and Q16 is dependent of each other.

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H0.17: Graduation and Q17 is independent of each other.

H1.17: Graduation and Q17 is dependent of each other.

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H0.18: Graduation and Q18 is independent of each other.

H1.18: Graduation and Q18 is dependent of each other.

---

H0.19: Graduation and Q19 is independent of each other.

H1.19: Graduation and Q19 is dependent of each other.

---

H0.20: Graduation and Q20 is independent of each other.

H1.20: Graduation and Q20 is dependent of each other.

---

H0.21: Graduation and Q21 is independent of each other.

H1.21: Graduation and Q21 is dependent of each other.

---

The null and alternative hypotheses for the age variable were established as follows.

---

H0.1: Age and Q1 is independent of each other.

H1.1: Age and Q1 is dependent of each other.

---

H0.2: Age and Q2 is independent of each other.

H1.2: Age and Q2 is dependent of each other.

---

H0.3: Age and Q3 is independent of each other.

H1.3: Age and Q3 is dependent of each other.

---

H0.4: Age and Q4 is independent of each other.

H1.4: Age and Q4 is dependent of each other.

---

H0.5: Age and Q5 is independent of each other.

H1.5: Age and Q5 is dependent of each other.

---

H0.6: Age and Q6 is independent of each other.

H1.6: Age and Q6 is dependent of each other.

---

H0.7: Age and Q7 is independent of each other.

H1.7: Age and Q7 is dependent of each other.

---

H0.8: Age and Q8 is independent of each other.

H1.8: Age and Q8 is dependent of each other.

---

H0.9: Age and Q9 is independent of each other.

H1.9: Age and Q9 is dependent of each other.

---

---

H0.10: Age and Q10 is independent of each other.

H1.10: Age and Q10 is dependent of each other.

---

H0.11: Age and Q11 is independent of each other.

H1.11: Age and Q11 is dependent of each other.

---

H0.12: Age and Q12 is independent of each other.

H1.12: Age and Q12 is dependent of each other.

---

H0.13: Age and Q13 is independent of each other.

H1.13: Age and Q13 is dependent of each other.

---

H0.14: Age and Q14 is independent of each other.

H1.14: Age and Q14 is dependent of each other.

---

H0.15: Age and Q15 is independent of each other.

H1.15: Age and Q15 is dependent of each other.

---

H0.16: Age and Q16 is independent of each other.

H1.16: Age and Q16 is dependent of each other.

---

H0.17: Age and Q17 is independent of each other.

H1.17: Age and Q17 is dependent of each other.

---

H0.18: Age and Q18 is independent of each other.

H1.18: Age and Q18 is dependent of each other.

---

H0.19: Age and Q19 is independent of each other.

H1.19: Age and Q19 is dependent of each other.

---

H0.20: Age and Q20 is independent of each other.

H1.20: Age and Q20 is dependent of each other.

---

H0.21: Age and Q21 is independent of each other.

H1.21: Age and Q21 is dependent of each other.

---

The null and alternative hypotheses for the Position Level variable were established as follows.

---

H0.1: Level of Position and Q1 is independent of each other.

H1.1: Level of Position and Q1 is dependent of each other.

---

H0.2: Level of Position and Q2 is independent of each other.

H1.2: Level of Position and Q2 is dependent of each other.

---

H0.3: Level of Position and Q3 is independent of each other.

---

|                                                                |
|----------------------------------------------------------------|
| H1.3: Level of Position and Q3 is dependent of each other.     |
| H0.4: Level of Position and Q4 is independent of each other.   |
| H1.4: Level of Position and Q4 is dependent of each other.     |
| H0.5: Level of Position and Q5 is independent of each other.   |
| H1.5: Level of Position and Q5 is dependent of each other.     |
| H0.6: Level of Position and Q6 is independent of each other.   |
| H1.6: Level of Position and Q6 is dependent of each other.     |
| H0.7: Level of Position and Q7 is independent of each other.   |
| H1.7: Level of Position and Q7 is dependent of each other.     |
| H0.8: Level of Position and Q8 is independent of each other.   |
| H1.8: Level of Position and Q8 is dependent of each other.     |
| H0.9: Level of Position and Q9 is independent of each other.   |
| H1.9: Level of Position and Q9 is dependent of each other.     |
| H0.10: Level of Position and Q10 is independent of each other. |
| H1.10: Level of Position and Q10 is dependent of each other.   |
| H0.11: Level of Position and Q11 is independent of each other. |
| H1.11: Level of Position and Q11 is dependent of each other.   |
| H0.12: Level of Position and Q12 is independent of each other. |
| H1.12: Level of Position and Q12 is dependent of each other.   |
| H0.13: Level of Position and Q13 is independent of each other. |
| H1.13: Level of Position and Q13 is dependent of each other.   |
| H0.14: Level of Position and Q14 is independent of each other. |
| H1.14: Level of Position and Q14 is dependent of each other.   |
| H0.15: Level of Position and Q15 is independent of each other. |
| H1.15: Level of Position and Q15 is dependent of each other.   |
| H0.16: Level of Position and Q16 is independent of each other. |
| H1.16: Level of Position and Q16 is dependent of each other.   |
| H0.17: Level of Position and Q17 is independent of each other. |
| H1.17: Level of Position and Q17 is dependent of each other.   |
| H0.18: Level of Position and Q18 is independent of each other. |
| H1.18: Level of Position and Q18 is dependent of each other.   |
| H0.19: Level of Position and Q19 is independent of each other. |
| H1.19: Level of Position and Q19 is dependent of each other.   |

---

H0.20: Level of Position and Q20 is independent of each other.

H1.20: Level of Position and Q20 is dependent of each other.

---

H0.21: Level of Position and Q21 is independent of each other.

H1.21: Level of Position and Q21 is dependent of each other.

---

For hypotheses measured with 95% confidence, if the significance value is less than 0.05, the null hypothesis will be rejected. In other words, it will be concluded that the variables are not independent from each other.

## 6. FREQUENCIES OF DEMOGRAPHIC VARIABLES

In this study, gender, graduation status, age and working position variables were analyzed as demographic variables. Frequency values and frequency percentages of demographic variables are given in the table below.

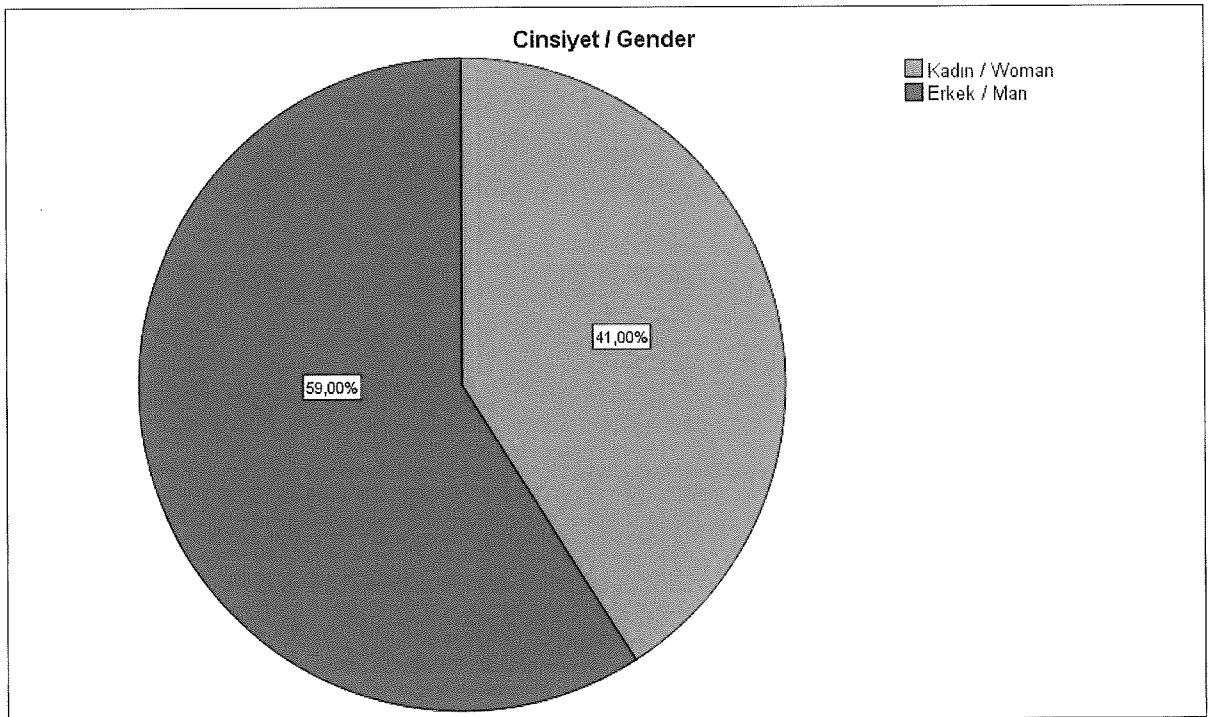
**Table 5. Frequencies of Demographic Variables**

| Variable                     | Groups               | Frequency | Percent (%) |
|------------------------------|----------------------|-----------|-------------|
| Gender                       | Woman                | 41        | 41.0        |
|                              | Man                  | 59        | 59.0        |
| Graduation of latest school? | PHD                  | 2         | 2.0         |
|                              | MS                   | 20        | 20.0        |
|                              | University           | 70        | 70.0        |
|                              | high school          | 8         | 8.0         |
| Age                          | 18 - 25              | 16        | 16.0        |
|                              | 26 - 40              | 27        | 27.0        |
|                              | 41 - 50              | 42        | 42.0        |
|                              | 51 - 65              | 12        | 12.0        |
|                              | 65+                  | 3         | 3.0         |
| Level of position worked?    | Director             | 18        | 18.0        |
|                              | Senior Manager       | 26        | 26.0        |
|                              | Mid-Level Manager    | 26        | 26.0        |
|                              | Specialist           | 19        | 19.0        |
|                              | Specialist Assistant | 11th      | 11.0        |

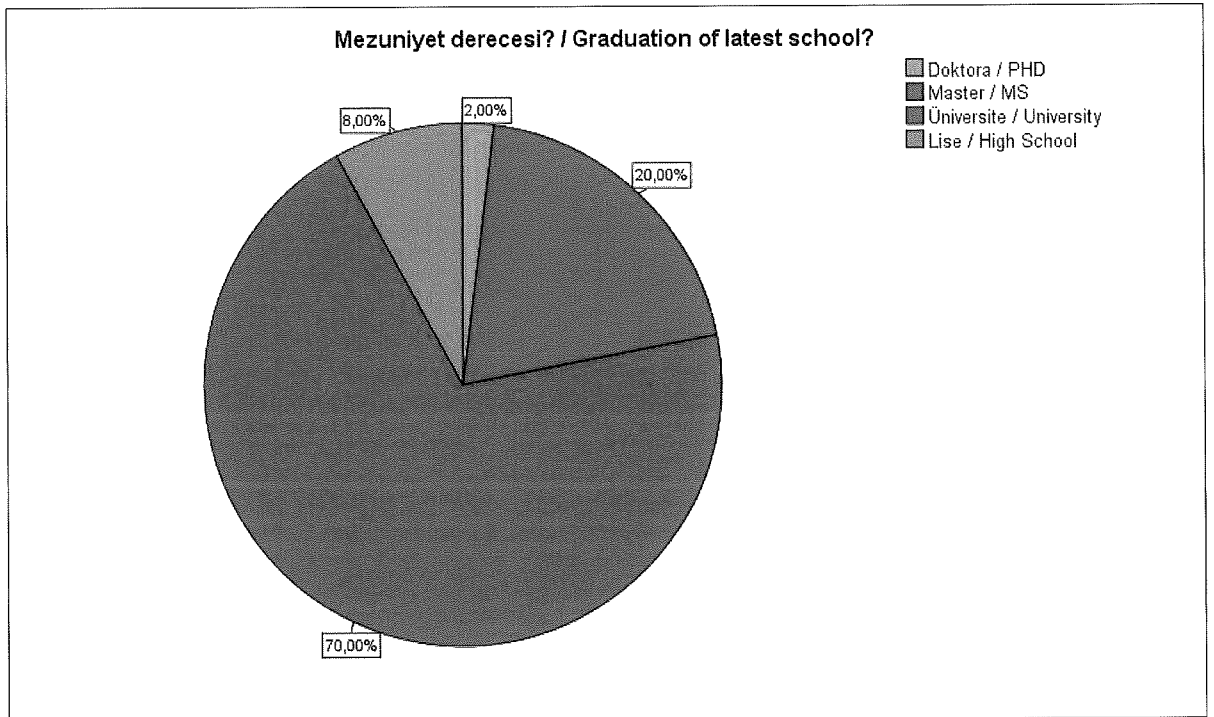
When the table is examined, it can be seen that the numbers of men and women are close to each other. In the last graduated school variable, only 2 people who graduated from doctorate degree appear. In order for the analyzes to yield healthy results, the doctorate graduate group was combined with the master's graduate group. In age groups, it is seen that there are only 3 people in the 65+ group. This group was combined with the 51-65 age group. It is seen that the number of observations in the group is sufficient for the position variable studied.

Pie charts for demographic variables are as follows.

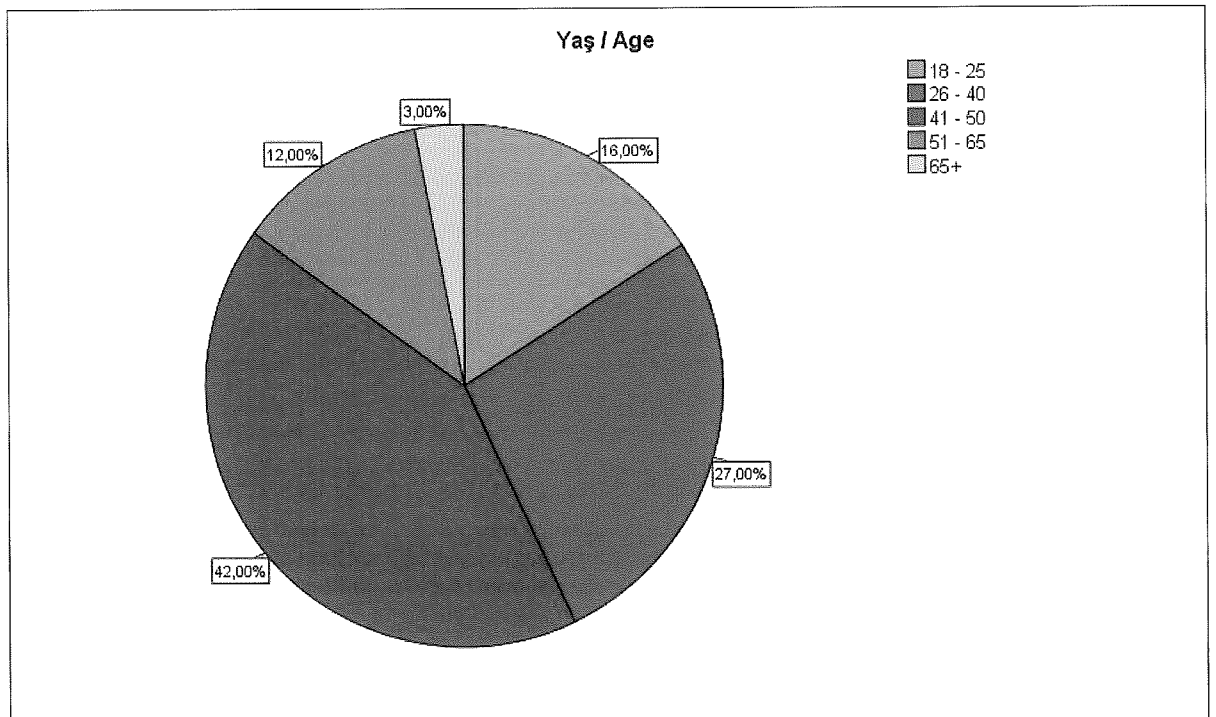
**Figure 1. Pie Chart for Gender**



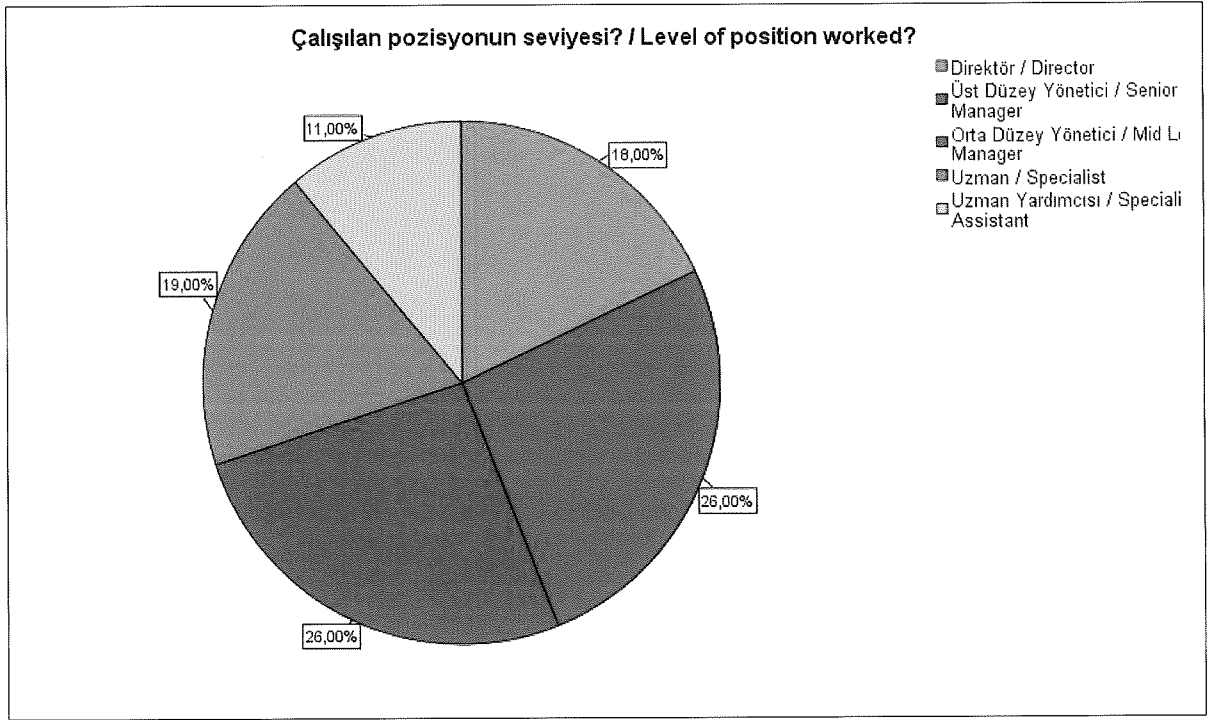
**Figure 2. Pie Chart for Graduation**



**Figure 3. Pie Chart for Age**



**Figure 4. Pie Chart for Level of Position**



## 7. FREQUENCIES OF RESEARCH VARIABLES

The question contents of 21 questions determined as research variables in this study, the frequency and percentage values of the answer groups are given in the table below.

**Table 6. Frequencies of Research Variables**

| Variable                                                                                               | Groups           | Frequency | percent |
|--------------------------------------------------------------------------------------------------------|------------------|-----------|---------|
| Q1- The role of digitalization is important in determining the selling price of the product / service. | Totally Agree    | 44        | 50.57%  |
|                                                                                                        | agree            | 40        | 45.98%  |
|                                                                                                        | No Opinion       | 2         | 2.30%   |
|                                                                                                        | Disagree         | one       | 1.15%   |
|                                                                                                        | Totally Agree    | 43        | 49.43%  |
| Q2- Electronic media provides many advantages at the stage of writing specifications.                  | agree            | 33        | 37.93%  |
|                                                                                                        | No Opinion       | 9         | 10.34%  |
|                                                                                                        | Disagree         | one       | 1.15%   |
|                                                                                                        | Totally Disagree | one       | 1.15%   |

|                                                |                  |      |        |
|------------------------------------------------|------------------|------|--------|
|                                                | Totally Agree    | 24   | 27.59% |
| Q3- The realization of the tender should agree |                  | 32   | 36.78% |
| be done completely in digital                  | No Opinion       | 15   | 17.24% |
| environment.                                   | Disagree         | 13   | 14.94% |
|                                                | Totally Disagree | 3    | 3.45%  |
|                                                | Totally Agree    | 26   | 29.89% |
|                                                | agree            | 35   | 40.23% |
| Q4- Post-tender contract signing must be       | No Opinion       | 11th | 12,64% |
| completely digitalized.                        | Disagree         | 12   | 13.79% |
|                                                | Totally Disagree | 3    | 3.45%  |
|                                                | Totally Agree    | 30   | 34.48% |
| Q5- All citizens should have a digital         | agree            | 44   | 50.57% |
| signature.                                     | No Opinion       | 4    | 4.60%  |
|                                                | Disagree         | 9    | 10.34% |
|                                                | Totally Agree    | 31   | 35.63% |
|                                                | agree            | 26   | 29.89% |
| Q6- All money transactions must be done        | No Opinion       | 7    | 8.05%  |
| in 100% digital environment.                   | Disagree         | 17   | 19.54% |
|                                                | Totally Disagree | 6    | 6.90%  |
|                                                | Totally Agree    | 28   | 32.18% |
| Q7- Warehousing and stock control must         | agree            | 36   | 41.38% |
| be performed completely by Internet of         | No Opinion       | 13   | 14.94% |
| Things.                                        | Disagree         | 9    | 10.34% |
|                                                | Totally Disagree | one  | 1.15%  |
|                                                | Totally Agree    | 47   | 54.02% |
| Q8- Companies should use an Enterprise         | agree            | 30   | 34.48% |
| Resource Planning (ERP) software.              | No Opinion       | 6    | 6.90%  |
|                                                | Disagree         | 4    | 4.60%  |
|                                                | Totally Agree    | 42   | 48.28% |
| Q9- Planning of distribution operation         | agree            | 35   | 40.23% |
| should be done in a completely digital         | No Opinion       | 4    | 4.60%  |
| environment.                                   | Disagree         | 5    | 5.75%  |
|                                                | Totally Disagree | one  | 1.15%  |

|                                                                                                 |                  |     |        |
|-------------------------------------------------------------------------------------------------|------------------|-----|--------|
| Q10- The impact of digitalization on international trade is very high in operational dimension. | Totally Agree    | 54  | 62.79% |
|                                                                                                 | agree            | 26  | 30.23% |
|                                                                                                 | No Opinion       | 5   | 5.81%  |
|                                                                                                 | Disagree         | one | 1.16%  |
| Q11- Digitalization has made access to global supply channel easier.                            | Totally Agree    | 56  | 64.37% |
|                                                                                                 | agree            | 26  | 29.89% |
|                                                                                                 | No Opinion       | 4   | 4.60%  |
|                                                                                                 | Totally Disagree | one | 1.15%  |
| Q12- Data security of international trade has decreased in the digitalization process.          | Totally Agree    | 9   | 10.34% |
|                                                                                                 | agree            | 23  | 26.44% |
|                                                                                                 | No Opinion       | 34  | 39.08% |
|                                                                                                 | Disagree         | 18  | 20.69% |
| Q13- Digitalization has increased transparency in international trade.                          | Totally Disagree | 3   | 3.45%  |
|                                                                                                 | Totally Agree    | 27  | 31.03% |
|                                                                                                 | agree            | 39  | 44.83% |
|                                                                                                 | No Opinion       | 15  | 17.24% |
| Q14- Customer relationship management has become much easier with electronic channels.          | Disagree         | 5   | 5.75%  |
|                                                                                                 | Totally Disagree | one | 1.15%  |
|                                                                                                 | Totally Agree    | 42  | 48.28% |
|                                                                                                 | agree            | 31  | 35.63% |
| Q15- Digitalization, provides confidence in the field of international trade.                   | No Opinion       | 4   | 4.60%  |
|                                                                                                 | Disagree         | 10  | 11.49% |
|                                                                                                 | Totally Agree    | 22  | 25.29% |
|                                                                                                 | agree            | 35  | 40.23% |
| Q16- After digitalization, our company's competitiveness in global markets has increased.       | No Opinion       | 15  | 17.24% |
|                                                                                                 | Disagree         | 14  | 16.09% |
|                                                                                                 | Totally Disagree | one | 1.15%  |
|                                                                                                 | Totally Agree    | 27  | 31.40% |
| Q17- Our company's foreign sales volume has increased with digitalization.                      | agree            | 42  | 48.84% |
|                                                                                                 | No Opinion       | 14  | 16.28% |
|                                                                                                 | Disagree         | 3   | 3.49%  |
|                                                                                                 | Totally Agree    | 31  | 35.63% |
|                                                                                                 | agree            | 39  | 44.83% |

|                                                                                               |               |    |        |
|-----------------------------------------------------------------------------------------------|---------------|----|--------|
|                                                                                               | No Opinion    | 13 | 14.94% |
|                                                                                               | Disagree      | 4  | 4.60%  |
|                                                                                               | Totally Agree | 32 | 37.21% |
| Q18- Our operational costs decreased with digitalization.                                     | agree         | 46 | 53.49% |
|                                                                                               | No Opinion    | 4  | 4.65%  |
|                                                                                               | Disagree      | 4  | 4.65%  |
|                                                                                               | Totally Agree | 26 | 29.89% |
| Q19- Our delivery time of products have decreased with digitalization in international trade. | agree         | 43 | 49.43% |
|                                                                                               | No Opinion    | 9  | 10.34% |
|                                                                                               | Disagree      | 9  | 10.34% |
|                                                                                               | Totally Agree | 26 | 29.89% |
| Q20- Digitalization has a huge impact on reducing our purchasing costs.                       | agree         | 43 | 49.43% |
|                                                                                               | No Opinion    | 10 | 11.49% |
|                                                                                               | Disagree      | 8  | 9.20%  |
|                                                                                               | Totally Agree | 46 | 52.87% |
| Q21- Digitalization has made the process easier to measure customer satisfaction.             | agree         | 35 | 40.23% |
|                                                                                               | No Opinion    | 4  | 4.60%  |
|                                                                                               | Disagree      | 2  | 2.30%  |

When the table is examined, it can be seen that the questions consist of groups ranging from I completely agree (1) to completely disagree (5). As with demographic variables, groups with few values were combined in research variables. Thus, chi-square analyzes were performed for 21 research variables with at least 3 and at most 5 groups.

## 8. FACTOR AND RELIABILITY ANALYSIS OF RESEARCH VARIABLES

Factor and reliability analysis was conducted for 21 questions, which are research questions. Factor loadings, reliability value, KMO and Bartlett's test values can be seen in the table below.

**Table 7. Factor and Reliability Analysis**

| Factor Name                                                                       | Factor Items              | Factor          |
|-----------------------------------------------------------------------------------|---------------------------|-----------------|
| <b>digitalization</b>                                                             | <b>Reliability: 0.844</b> | <b>Loadings</b> |
| Data security of international trade has decreased in the digitalization process. |                           | 0.842           |

|                                                                                                    |         |
|----------------------------------------------------------------------------------------------------|---------|
| Post-tender contract signing must be completely digitalized.                                       | 0.814   |
| Digitalization has made access to global supply channel easier.                                    | 0.814   |
| Digitalization has a huge impact on reducing our purchasing costs.                                 | 0.812   |
| Our delivery time of products have decreased with digitalization in international trade.           | 0.796   |
| Companies should use an Enterprise Resource Planning (ERP) software.                               | 0.751   |
| Our company's foreign sales volume has increased with digitalization.                              | 0.740   |
| The impact of digitalization on international trade is very high in operational dimension.         | 0.735   |
| All citizens should have a digital signature.                                                      | 0.725   |
| The realization of the tender should be done completely in digital environment.                    | 0.720   |
| All money transactions must be done in 100% digital environment.                                   | 0.703   |
| Planning of distribution operation should be done in a completely digital environment.             | 0.668   |
| Warehousing and stock control must be performed completely by Internet of Things.                  | 0.662   |
| After digitalization, our company's competitiveness in global markets has increased.               | 0.659   |
| Electronic media provides many advantages at the stage of writing specifications.                  | 0.643   |
| The role of digitalization is important in determining the selling price of the product / service. | 0.611   |
| Digitalization, provides confidence in the field of international trade.                           | 0.598   |
| Digitalization has increased transparency in international trade.                                  | 0.549   |
| Customer relationship management has become much easier with electronic channels.                  | 0.503   |
| Our operational costs decreased with digitalization.                                               | 0.449   |
| Digitalization has made the process easier to measure customer satisfaction.                       | 0.401   |
| <b>KMO and Bartlett's Test</b>                                                                     |         |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy                                                    | 0.750   |
| Approx. Chi-Square                                                                                 | 661,788 |
| Bartlett's Test of Sphericity                                                                      | df      |
| Shallow.                                                                                           | 210     |
|                                                                                                    | 0,000   |

Principal components analysis and Cronbach's Alpha value were used in the factor and reliability analysis for the values obtained in the table. Varimax was used as

the rotation method in principal component analysis (PCA). A KMO value of 0.5 and above and a significant Bartlett's test value indicate that the correlation matrix is suitable for PCA analysis (Durmuş, Yurtkoru, & Çinko, 2011).

Reliability values of factor items were measured with Cronbach's Alpha coefficient. A Cronbach's Alpha value of 0.6 and above is sufficient for reliability (Akgül & Çevik, 2003; 435–436). In this case, it can be said that the items used in the scale are appropriate.

## 9. ASSOCIATION OF GENDER AND RESEARCH VARIABLES

The relationships between gender, a two-group categorical variable, and 21 categorical variables measuring the digitalization of trade were tested with the chi-square test. Analyses showing the relationships between gender and research variables were performed separately for each research variable.

### 9.1. Gender and The role of digitalization is important in determining the selling price of the product/service.

The result of the chi-square test, which measures the relationship between gender and the first question, is given in the table below.

**Table 8. Gender and Q1**

| Gender | Q1       | Totally Agree | agree | No Opinion | Test     | value | p     |
|--------|----------|---------------|-------|------------|----------|-------|-------|
|        | count    | 19            | 12    | 2          |          |       |       |
| woman  | Expected | 16.7          | 15.2  | 1.1        | Fisher's |       |       |
|        | Count    |               |       |            | Exact    | 2,704 | 0.236 |
|        | count    | 25            | 28    | one        | Test     |       |       |
| Man    | Expected | 27.3          | 24.8  | 1.9        |          |       |       |
|        | Count    |               |       |            |          |       |       |

It is seen that there is no significant relationship between gender and the first question ( $p > 0.05$ ).

### 9.2. Gender and Electronic media provide many advantages at the stage of writing specifications.

The result of the chi-square test, which measures the relationship between gender and the second question, is given in the table below.

**Table 9. Gender and Q2**

| Gender | Q2                | Totally Agree | agree | No Opinion | Test     | value  | p            |
|--------|-------------------|---------------|-------|------------|----------|--------|--------------|
|        | count             | 11th          | 13    | 9          |          |        |              |
| woman  | Expected Count    | 16.3          | 12.5  | 4.2        |          |        |              |
|        | % Within Gender   | 33.3%         | 39.4% | 27.3%      | Fisher's |        |              |
|        | Adjusted Residual | -2.3          | 0.2   | 3.2        | Exact    | 11,358 | <b>0.003</b> |
|        | count             | 32            | 20    | 2          | Test     |        |              |
| Man    | Expected Count    | 26.7          | 20.5  | 6.8        |          |        |              |
|        | % Within Gender   | 59.3%         | 37.0% | 3.7%       |          |        |              |
|        | Adjusted Residual | 2.3           | -0.2  | -3.2       |          |        |              |

It is seen that there is a significant relationship between gender and the second question ( $p < 0.05$ ). As a result of pairwise comparisons made over Adjusted Residual values, it is seen that the number of women who say they have no idea is significantly higher than the number of men. In this case, it can be said that men think that the electronic environment provides many advantages in writing specifications compared to women.

### 9.3. Gender and the realization of the tender should be done completely in digital environment.

The result of the chi-square test, which measures the relationship between gender and the third question, is given in the table below.

**Table 10. Gender and Q3**

| Gender | Q3             | Totally Agree | agree | No Opinion | Disagree | Test     | value | p     |
|--------|----------------|---------------|-------|------------|----------|----------|-------|-------|
|        | count          | 7             | 11th  | 7          | 8        |          |       |       |
| woman  | Expected Count | 9.1           | 12.1  | 5.7        | 6.1      | Fisher's |       |       |
|        | count          | 17            | 21    | 8          | 8        | Exact    | 2,467 | 0.496 |
| Man    | Expected Count | 14.9          | 19.9  | 9.3        | 9.9      | Test     |       |       |

It is seen that there is no significant relationship between gender and the third question ( $p>0.05$ ).

#### **9.4. Gender and Post-tender contract signing must be completely digitalized.**

The result of the chi-square test, which measures the relationship between gender and the fourth question, is given in the table below.

**Table 11. Gender and Q4**

| Gender | Q4             | Totally Agree | agree | No Opinion | Disagree | Test                  | value | p     |
|--------|----------------|---------------|-------|------------|----------|-----------------------|-------|-------|
| woman  | count          | 9             | 10    | 7          | 7        | Pearson<br>Chi-Square | 4,997 | 0.172 |
|        | Expected Count | 9.9           | 13.3  | 4.2        | 5.7      |                       |       |       |
| Man    | count          | 17            | 25    | 4          | 8        |                       |       |       |
|        | Expected Count | 16.1          | 21.7  | 6.8        | 9.3      |                       |       |       |

It is seen that there is no significant relationship between gender and the fourth question ( $p>0.05$ ).

#### **9.5. Gender and All citizens should have a digital signature.**

The result of the chi-square test, which measures the relationship between gender and the fifth question, is given in the table below.

**Table 12. Gender and Q5**

| Gender | Q5             | Totally Agree | agree | No Opinion | Disagree | Test                      | value | p     |
|--------|----------------|---------------|-------|------------|----------|---------------------------|-------|-------|
| woman  | count          | 9             | 18    | 2          | 4        | Fisher's<br>Exact<br>Test | 1,618 | 0.693 |
|        | Expected Count | 11.4          | 16.7  | 1.5        | 3,4      |                           |       |       |
| Man    | count          | 21            | 26    | 2          | 5        |                           |       |       |
|        | Expected Count | 18.6          | 27.3  | 2,5        | 5.6      |                           |       |       |

It is seen that there is no significant relationship between gender and the fifth question ( $p>0.05$ ).

#### **9.6. Gender and All money transactions must be done in 100% digital environment**

The result of the chi-square test, which measures the relationship between gender and the sixth question, is given in the table below.

**Table 13. Gender and Q6**

| Gender | Q6             | totally agree | agree | No. Opinion | Disagree | totally Disagree | Test                      | value | p     |
|--------|----------------|---------------|-------|-------------|----------|------------------|---------------------------|-------|-------|
| woman  | count          | 9             | 10    | 4           | 6        | 4                | Fisher's<br>Exact<br>Test | 4,278 | 0.378 |
|        | Expected Count | 11.8          | 9.9   | 2.7         | 6.4      | 2.3              |                           |       |       |
| Man    | count          | 22            | 16    | 3           | 11th     | 2                | Test                      |       |       |
|        | Expected Count | 19.2          | 16.1  | 4.3         | 10.6     | 3.7              |                           |       |       |

It is seen that there is no significant relationship between gender and the sixth question ( $p>0.05$ ).

#### **9.7. Gender and Warehousing and stock control must be performed completely by Internet of Things**

The result of the chi-square test, which measures the relationship between gender and the seventh question, is given in the table below.

**Table 14. Gender and Q7**

| Gender | Q7             | Totally Agree | agree | No Opinion | Disagree | Test                      | value | p     |
|--------|----------------|---------------|-------|------------|----------|---------------------------|-------|-------|
| woman  | count          | 11th          | 12    | 8          | 2        | Fisher's<br>Exact<br>Test | 4,538 | 0.210 |
|        | Expected Count | 10.6          | 13.7  | 4.9        | 3.8      |                           |       |       |
| Man    | count          | 17            | 24    | 5          | 8        | Test                      |       |       |
|        | Expected Count | 17.4          | 22.3  | 8.1        | 6.2      |                           |       |       |

It is seen that there is no significant relationship between gender and the seventh question ( $p>0.05$ ).

### **9.8. Gender and Companies should use an Enterprise Resource Planning (ERP) software**

The result of the chi-square test, which measures the relationship between gender and the eighth question, is given in the table below.

**Table 15. Gender and Q8**

| Gender | Q8             | Totally Agree | agree | No Opinion | Disagree | Test                      | value | p     |
|--------|----------------|---------------|-------|------------|----------|---------------------------|-------|-------|
| woman  | count          | 16            | 12    | 3          | 2        | Fisher's<br>Exact<br>Test | 1,282 | 0.760 |
|        | Expected Count | 17.8          | 11.4  | 2.3        | 1.5      |                           |       |       |
| Man    | count          | 31            | 18    | 3          | 2        |                           |       |       |
|        | Expected Count | 29.2          | 18.6  | 3.7        | 2,5      |                           |       |       |

It is seen that there is no significant relationship between gender and the eighth question ( $p>0.05$ ).

### **9.9. Gender and Planning of distribution operation should be done in a completely digital environment**

The result of the chi-square test, which measures the relationship between gender and the ninth question, is given in the table below.

**Table 16. Gender and Q9**

| Gender | Q9             | Totally Agree | agree | No Opinion | Disagree | Test                      | value | p     |
|--------|----------------|---------------|-------|------------|----------|---------------------------|-------|-------|
| woman  | count          | 14            | 15    | 2          | 2        | Fisher's<br>Exact<br>Test | 1,261 | 0.778 |
|        | Expected Count | 15.9          | 13.3  | 1.5        | 2.3      |                           |       |       |
| Man    | count          | 28            | 20    | 2          | 4        |                           |       |       |
|        | Expected Count | 26.1          | 21.7  | 2,5        | 3.7      |                           |       |       |

It is seen that there is no significant relationship between gender and the ninth question ( $p>0.05$ ).

#### 9.10. Gender and The impact of digitalization on international trade is very high in operational dimension

The result of the chi-square test, which measures the relationship between gender and the tenth question, is given in the table below.

**Table 17. Gender and Q10**

| Gender | Q10            | Totally Agree | agree | No Opinion | Test       | value | p     |
|--------|----------------|---------------|-------|------------|------------|-------|-------|
|        | count          | 18            | 10    | 4          |            |       |       |
| woman  | Expected Count | 20.1          | 9.7   | 2.2        | Fisher's   |       |       |
|        | count          | 36            | 16    | 2          | Exact Test | 2,537 | 0.298 |
| Man    | Expected Count | 33.9          | 16.3  | 3.8        |            |       |       |

It is seen that there is no significant relationship between gender and the tenth question ( $p>0.05$ ).

#### 9.11. Gender and Digitalization has made access to global supply channel easier.

The result of the chi-square test, which measures the relationship between gender and the eleventh question, is given in the table below.

**Table 18. Gender and Q11**

| Gender | Q11            | Totally Agree | agree | No Opinion | Test       | value | p     |
|--------|----------------|---------------|-------|------------|------------|-------|-------|
|        | count          | 19            | 11th  | 3          |            |       |       |
| woman  | Expected Count | 21.2          | 9.9   | 1.9        | Fisher's   |       |       |
|        | count          | 37            | 15    | 2          | Exact Test | 1,724 | 0.394 |
| Man    | count          |               |       |            |            |       |       |

|          |      |      |     |
|----------|------|------|-----|
| Expected | 34.8 | 16.1 | 3.1 |
| Count    |      |      |     |

It is seen that there is no significant relationship between gender and the eleventh question ( $p>0.05$ ).

### 9.12. Gender and Data security of international trade has decreased in the digitalization process.

The result of the chi-square test, which measures the relationship between gender and the twelfth question, is given in the table below.

**Table 19. Gender and Q12**

| Gender | Q12      | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|--------|----------|---------------|-------|------------|----------|------------|-------|-------|
|        | count    | 5             | 6     | 12         | 10       |            |       |       |
| woman  | Expected | 3,4           | 8.7   | 12.9       | 8.0      | Pearson    |       |       |
|        | Count    |               |       |            |          | Chi-Square | 3,495 | 0.321 |
|        | count    | 4             | 17    | 22         | 11th     |            |       |       |
| Man    | Expected | 5.6           | 14.3  | 21.1       | 13.0     |            |       |       |
|        | Count    |               |       |            |          |            |       |       |

It is seen that there is no significant relationship between gender and the twelfth question ( $p>0.05$ ).

### 9.13. Gender and Digitalization has increased transparency in international trade.

The result of the chi-square test, which measures the relationship between gender and the thirteenth question, is given in the table below.

**Table 20. Gender and Q13**

| Gender | Q13   | Totally Agree | agree | No Opinion | Disagree | Test | value | p     |
|--------|-------|---------------|-------|------------|----------|------|-------|-------|
| woman  | count | 8             | 15    | 8          | 2        |      | 2,380 | 0.521 |

|     |          |      |      |     |     |                           |
|-----|----------|------|------|-----|-----|---------------------------|
| Man | Expected | 10.2 | 14.8 | 5.7 | 2.3 | Fisher's<br>Exact<br>Test |
|     | Count    |      |      |     |     |                           |
|     | count    | 19   | 24   | 7   | 4   |                           |
|     | Expected | 16.8 | 24.2 | 9.3 | 3.7 |                           |
|     | Count    |      |      |     |     |                           |

It is seen that there is no significant relationship between gender and the thirteenth question ( $p>0.05$ ).

#### **8.14 Gender and Customer relationship management has become much easier with electronic channels.**

The result of the chi-square test, which measures the relationship between gender and the fourteenth question, is given in the table below.

**Table 21. Gender and Q14**

| Gender | Q14      | Totally<br>Agree | agree | No<br>Opinion | Disagree | Test                      | value | p     |
|--------|----------|------------------|-------|---------------|----------|---------------------------|-------|-------|
| woman  | count    | 17               | 10    | 2             | 4        | Fisher's<br>Exact<br>Test | 1,036 | 0.824 |
|        | Expected | 15.9             | 11.8  | 1.5           | 3.8      |                           |       |       |
|        | Count    |                  |       |               |          |                           |       |       |
|        | count    | 25               | 21    | 2             | 6        |                           |       |       |
| Man    | Expected | 26.1             | 19.2  | 2,5           | 6.2      |                           |       |       |
|        | Count    |                  |       |               |          |                           |       |       |

It is seen that there is no significant relationship between gender and the fourteenth question ( $p>0.05$ ).

#### **8.15 Gender and Digitalization, provides confidence in the field of international trade.**

The result of the chi-square test, which measures the relationship between gender and the fifteenth question, is given in the table below.

**Table 22. Gender and Q15**

| Gender | Q15            | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|--------|----------------|---------------|-------|------------|----------|------------|-------|-------|
|        | count          | 9             | 10    | 7          | 7        |            |       |       |
| woman  | Expected Count | 8.3           | 13.3  | 5.7        | 5.7      | Pearson    |       |       |
|        | count          | 13            | 25    | 8          | 8        | Chi-Square | 2,358 | 0.506 |
| Man    | Expected Count | 13.7          | 21.7  | 9.3        | 9.3      |            |       |       |

It is seen that there is no significant relationship between gender and the fifteenth question ( $p>0.05$ ).

#### **1.16. Gender and After digitalization, our company's competitiveness in global markets has increased**

The result of the chi-square test, which measures the relationship between gender and the sixteenth question, is given in the table below.

**Table 23. Gender and Q16**

| Gender | Q16            | Totally Agree | agree | No Opinion | Test       | value | p     |
|--------|----------------|---------------|-------|------------|------------|-------|-------|
|        | count          | 10            | 15    | 7          |            |       |       |
| woman  | Expected Count | 10.0          | 15.6  | 6.3        | Fisher's   |       |       |
|        | count          | 17            | 27    | 10         | Exact Test | 0.228 | 0.956 |
| Man    | Expected Count | 17.0          | 26.4  | 10.7       |            |       |       |

It is seen that there is no significant relationship between gender and the sixteenth question ( $p>0.05$ ).

### 1.17. Gender and Our Company's foreign sales volume has increased with digitalization

The result of the chi-square test, which measures the relationship between gender and the seventeenth question, is given in the table below.

**Table 24. Gender and Q17**

| Gender | Q17            | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|--------|----------------|---------------|-------|------------|----------|------------|-------|-------|
|        | count          | 11th          | 15    | 4          | 3        |            |       |       |
| woman  | Expected Count | 11.8          | 14.8  | 4.9        | 1.5      | Fisher's   |       |       |
|        | count          | 20            | 24    | 9          | one      | Exact Test | 2,547 | 0.507 |
| Man    | Expected Count | 19.2          | 24.2  | 8.1        | 2,5      |            |       |       |

It is seen that there is no significant relationship between gender and the seventeenth question ( $p>0.05$ ).

### 1.18. Gender and our operational costs decreased with digitalization.

The result of the chi-square test, which measures the relationship between gender and the eighteenth question, is given in the table below.

**Table 25. Gender and Q18**

| Gender | Q18            | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|--------|----------------|---------------|-------|------------|----------|------------|-------|-------|
|        | count          | 14            | 17    | one        | one      |            |       |       |
| woman  | Expected Count | 12.3          | 17.7  | 1.5        | 1.5      | Fisher's   |       |       |
|        | count          | 18            | 29    | 3          | 3        | Exact Test | 1,002 | 0.804 |
| Man    | Expected Count | 19.7          | 28.3  | 2,5        | 2,5      |            |       |       |

It is seen that there is no significant relationship between gender and the eighteenth question ( $p>0.05$ ).

### 1.19. Gender and Our delivery time of products have decreased with digitalization in international trade

The result of the chi-square test, which measures the relationship between gender and the nineteenth question, is given in the table below.

**Table 26. Gender and Q19**

| Gender | Q19            | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|--------|----------------|---------------|-------|------------|----------|------------|-------|-------|
|        | count          | 10            | 14    | 3          | 6        |            |       |       |
| woman  | Expected Count | 9.9           | 16.3  | 3,4        | 3,4      | Fisher's   |       |       |
|        | count          | 16            | 29    | 6          | 3        | Exact Test | 3,638 | 0.326 |
| Man    | Expected Count | 16.1          | 26.7  | 5.6        | 5.6      |            |       |       |

It is seen that there is no significant relationship between gender and the nineteenth question ( $p > 0.05$ ).

### 1.20. Gender and Digitalization has a huge impact on reducing our purchasing costs

The result of the chi-square test, which measures the relationship between gender and the twentieth question, is given in the table below.

**Table 27. Gender and Q20**

| Gender | Q20            | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|--------|----------------|---------------|-------|------------|----------|------------|-------|-------|
|        | count          | 13            | 11th  | 4          | 5        |            |       |       |
| woman  | Expected Count | 9.9           | 16.3  | 3.8        | 3.0      | Fisher's   |       |       |
|        | count          | 13            | 32    | 6          | 3        | Exact Test | 6,509 | 0.082 |
| Man    | Expected Count | 16.1          | 26.7  | 6.2        | 5.0      |            |       |       |

It is seen that there is no significant relationship between gender and the twentieth question ( $p>0.05$ ).

### 1.21. Gender and Digitalization has made the process easier to measure customer satisfaction.

The result of the chi-square test, which measures the relationship between gender and the twenty-first question, is given in the table below.

**Table 28. Gender and Q21**

| Gender | Q21            | Totally Agree | agree | No Opinion | Test                | value | p     |
|--------|----------------|---------------|-------|------------|---------------------|-------|-------|
|        | count          | 18            | 13    | 2          |                     |       |       |
| woman  | Expected Count | 17.4          | 13.3  | 2.3        | Fisher's Exact Test | 0.155 | 1,000 |
|        | count          | 28            | 22    | 4          |                     |       |       |
| Man    | Expected Count | 28.6          | 21.7  | 3.7        |                     |       |       |

It is seen that there is no significant relationship between gender and the twenty-first question ( $p>0.05$ ).

Whether gender is independent of the research questions can be seen in the summary table below for each question.

**Table 29. p Values for Gender and Questions**

| p Value |    |              |     | p Value |     | p Value |  |
|---------|----|--------------|-----|---------|-----|---------|--|
| Gender  | Q1 | 0.236        | Q8  | 0.760   | Q15 | 0.506   |  |
|         | Q2 | <b>0.003</b> | Q9  | 0.778   | Q16 | 0.956   |  |
|         | Q3 | 0.496        | Q10 | 0.298   | Q17 | 0.507   |  |
|         | Q4 | 0.172        | Q11 | 0.394   | Q18 | 0.804   |  |
|         | Q5 | 0.693        | Q12 | 0.321   | Q19 | 0.326   |  |
|         | Q6 | 0.378        | Q13 | 0.521   | Q20 | 0.082   |  |
|         | Q7 | 0.210        | Q14 | 0.824   | Q21 | 1,000   |  |

As can be seen from the table, the p value between gender and question 2 is less than 0.05. In this case, the null hypothesis for question 2 with gender is rejected. Gender and question 2 are not independent of each other.

## 10. ASSOCIATION OF GRADUATION OF LATEST SCHOOL AND RESEARCH VARIABLES

The relationships between the last graduated school variable, which is a three-group categorical variable, and 21 categorical variables measuring the digitalization of commerce were tested with the chi-square test. Analyzes showing the relationships between graduation and research variables were made separately for each research variable.

### 1.2. Graduation and the role of digitalization is important in determining the selling price of the product/service.

The result of the chi-square test, which measures the relationship between graduation and the first question, is given in the table below.

**Table 30. Graduation and Q1**

| Graduation   | Q1       | Totally Agree | agree | No Opinion | Test     | value | p     |
|--------------|----------|---------------|-------|------------|----------|-------|-------|
| Master & PHD | count    | 8             | 11th  | one        |          |       |       |
|              | Expected | 10.1          | 9.2   | 0.7        |          |       |       |
|              | Count    |               |       |            |          |       |       |
| University   | count    | 31            | 27    | 2          | Fisher's |       |       |
|              | Expected | 30.3          | 27.6  | 2.1        | Exact    | 2,558 | 0.632 |
|              | Count    |               |       |            | Test     |       |       |
| high school  | count    | 5             | 2     | 0          |          |       |       |
|              | Expected | 3,5           | 3.2   | 0.2        |          |       |       |
|              | Count    |               |       |            |          |       |       |

It is seen that there is no significant relationship between graduation and the first question ( $p > 0.05$ ).

**10.1. Graduation and Electronic media provide many advantages at the stage of writing specifications.**

The result of the chi-square test, which measures the relationship between graduation and the second question, is given in the table below.

**Table 31. Graduation and Q2**

| Graduation   | Q2             | Totally Agree | agree | No Opinion | Test       | value | p     |
|--------------|----------------|---------------|-------|------------|------------|-------|-------|
| Master & PHD | count          | 10            | 9     | one        |            |       |       |
|              | Expected Count | 9.9           | 7.6   | 2,5        |            |       |       |
| University   | count          | 30            | 23    | 7          | Fisher's   |       |       |
|              | Expected Count | 29.7          | 22.8  | 7.6        | Exact Test | 5,768 | 0.192 |
| high school  | count          | 3             | one   | 3          |            |       |       |
|              | Expected Count | 3,5           | 2.7   | 0.9        |            |       |       |

It is seen that there is no significant relationship between graduation and the second question ( $p > 0.05$ ).

**10.2. Graduation and the realization of the tender should be done completely in digital environment.**

The result of the chi-square test, which measures the relationship between graduation and the third question, is given in the table below.

**Table 32. Graduation and Q3**

| Graduation   | Q3             | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|--------------|----------------|---------------|-------|------------|----------|------------|-------|-------|
| Master & PHD | count          | 3             | 10    | 3          | 4        |            |       |       |
|              | Expected Count | 5.5           | 7.4   | 3,4        | 3.7      | Fisher's   |       |       |
| University   | count          | 17            | 20    | 11th       | 12       | Exact Test | 5,444 | 0.473 |
|              | Expected Count | 16.6          | 22.1  | 10.3       | 11.0     |            |       |       |

|             |          |     |     |     |     |
|-------------|----------|-----|-----|-----|-----|
|             | count    | 4   | 2   | one | 0   |
| high school | Expected | 1.9 | 2.6 | 1,2 | 1.3 |
|             | Count    |     |     |     |     |

It is seen that there is no significant relationship between graduation and the third question ( $p>0.05$ ).

### 10.3. Graduation and Post-tender contract signing must be completely digitalized.

The result of the chi-square test, which measures the relationship between graduation and the fourth question, is given in the table below.

**Table 33. Graduation and Q4**

| Graduation   | Q4             | Totally Agree | agree | No Opinion | Disagree | Test       | value  | p     |
|--------------|----------------|---------------|-------|------------|----------|------------|--------|-------|
| Master & PHD | count          | 4             | 9     | 0          | 7        |            |        |       |
|              | Expected Count | 6.0           | 8.0   | 2,5        | 3,4      |            |        |       |
| University   | count          | 19            | 24    | 9          | 8        | Fisher's   |        |       |
|              | Expected Count | 17.9          | 24.1  | 7.6        | 10.3     | Exact Test | 10,376 | 0.074 |
| high school  | count          | 3             | 2     | 2          | 0        |            |        |       |
|              | Expected Count | 2.1           | 2.8   | 0.9        | 1,2      |            |        |       |

It is seen that there is no significant relationship between graduation and the fourth question ( $p>0.05$ ).

### 10.4. Graduation and All citizens should have a digital signature.

The result of the chi-square test, which measures the relationship between graduation and the fifth question, is given in the table below.

**Table 34. Graduation and Q5**

| Graduation Q5 |                | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|---------------|----------------|---------------|-------|------------|----------|------------|-------|-------|
| Master & PHD  | count          | 4             | 11th  | 0          | 5        |            |       |       |
|               | Expected Count | 6.9           | 10.1  | 0.9        | 2.1      |            |       |       |
| University    | count          | 23            | 30    | 4          | 3        | Fisher's   |       |       |
|               | Expected Count | 20.7          | 30.3  | 2.8        | 6.2      | Exact Test | 8,509 | 0.141 |
| high school   | count          | 3             | 3     | 0          | one      |            |       |       |
|               | Expected Count | 2,4           | 3,5   | 0.3        | 0.7      |            |       |       |

It is seen that there is no significant relationship between graduation and the fifth question ( $p>0.05$ ).

#### **10.5. Graduation and All money transactions must be done in 100% digital environment**

The result of the chi-square test, which measures the relationship between graduation and the sixth question, is given in the table below.

**Table 35. Graduation and Q6**

| Graduation Q6 |                | Totally Agree | agree | No Opinion | Disagree | Totally Disagree | Test       | value | p     |
|---------------|----------------|---------------|-------|------------|----------|------------------|------------|-------|-------|
| Master & PHD  | count          | 7             | 9     | 0          | 4        | 0                |            |       |       |
|               | Expected Count | 7.1           | 6.0   | 1.6        | 3.9      | 1.4              | Fisher's   |       |       |
| University    | count          | 21            | 14    | 7          | 13       | 5                | Exact Test | 8,668 | 0.299 |
|               | Expected Count | 21.4          | 17.9  | 4.8        | 11.7     | 4.1              |            |       |       |
| high school   | count          | 3             | 3     | 0          | 0        | one              |            |       |       |

|          |     |     |     |     |     |
|----------|-----|-----|-----|-----|-----|
| Expected | 2,5 | 2.1 | 0.6 | 1.4 | 0.5 |
| Count    |     |     |     |     |     |

It is seen that there is no significant relationship between graduation and the sixth question ( $p>0.05$ ).

#### 10.6. Graduation and Warehousing and stock control must be performed completely by Internet of Things

The result of the chi-square test, which measures the relationship between graduation and the seventh question, is given in the table below.

**Table 36. Graduation and Q7**

| Graduation Q7 |                | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|---------------|----------------|---------------|-------|------------|----------|------------|-------|-------|
| Master & PHD  | count          | 6             | 9     | one        | 4        |            |       |       |
|               | Expected Count | 6.4           | 8.3   | 3.0        | 2.3      |            |       |       |
| University    | count          | 19            | 25    | 11th       | 5        | Fisher's   |       |       |
|               | Expected Count | 19.3          | 24.8  | 9.0        | 6.9      | Exact Test | 4,642 | 0.573 |
| high school   | count          | 3             | 2     | one        | one      |            |       |       |
|               | Expected Count | 2.3           | 2.9   | 1.0        | 0.8      |            |       |       |

It is seen that there is no significant relationship between graduation and the seventh question ( $p>0.05$ ).

#### 10.7. Graduation and Companies should use an Enterprise Resource Planning (ERP) software

The result of the chi-square test, which measures the relationship between graduation and the eighth question, is given in the table below.

**Table 37. Graduation and Q8**

| Graduation Q8 |                | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|---------------|----------------|---------------|-------|------------|----------|------------|-------|-------|
| Master & PHD  | count          | 11th          | 7     | one        | one      |            |       |       |
|               | Expected Count | 10.8          | 6.9   | 1.4        | 0.9      |            |       |       |
| University    | count          | 35            | 18    | 4          | 3        | Fisher's   |       |       |
|               | Expected Count | 32.4          | 20.7  | 4.1        | 2.8      | Exact Test | 6,273 | 0.277 |
| high school   | count          | one           | 5     | one        | 0        |            |       |       |
|               | Expected Count | 3.8           | 2,4   | 0.5        | 0.3      |            |       |       |

It is seen that there is no significant relationship between graduation and the eighth question ( $p > 0.05$ ).

#### **10.8. Graduation and Planning of distribution operation should be done in a completely digital environment**

The result of the chi-square test, which measures the relationship between graduation and the ninth question, is given in the table below.

**Table 38. Graduation and Q9**

| Graduation Q9 |                | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|---------------|----------------|---------------|-------|------------|----------|------------|-------|-------|
| Master & PHD  | count          | 9             | 7     | one        | 3        |            |       |       |
|               | Expected Count | 9.7           | 8.0   | 0.9        | 1.4      |            |       |       |
| University    | count          | 28            | 26    | 3          | 3        | Fisher's   |       |       |
|               | Expected Count | 29.0          | 24.1  | 2.8        | 4.1      | Exact Test | 3,781 | 0.678 |
| high school   | count          | 5             | 2     | 0          | 0        |            |       |       |
|               | Expected Count | 3,4           | 2.8   | 0.3        | 0.5      |            |       |       |

It is seen that there is no significant relationship between graduation and the ninth question ( $p>0.05$ ).

#### 10.9. Graduation and the impact of digitalization on international trade is very high in operational dimension

The result of the chi-square test, which measures the relationship between graduation and the tenth question, is given in the table below.

**Table 39. Graduation and Q10**

| Graduation Q10 |                | Totally Agree | agree | No Opinion | Test                      | value | p     |
|----------------|----------------|---------------|-------|------------|---------------------------|-------|-------|
| Master         | count          | 12            | 6     | one        | Fisher's<br>Exact<br>Test | 4,497 | 0.310 |
| &PHD           | Expected Count | 11.9          | 5.7   | 1.3        |                           |       |       |
| University     | count          | 39            | 18    | 3          |                           |       |       |
|                | Expected Count | 37.7          | 18.1  | 4.2        |                           |       |       |
| high school    | count          | 3             | 2     | 2          |                           |       |       |
|                | Expected Count | 4.4           | 2.1   | 0.5        |                           |       |       |

It is seen that there is no significant relationship between graduation and the tenth question ( $p>0.05$ ).

#### 10.10. Graduation and Digitalization has made access to global supply channel easier.

The result of the chi-square test, which measures the relationship between graduation and the eleventh question, is given in the table below.

**Table 40. Graduation and Q11**

| Graduation Q11 |                 | Totally Agree | agree | No Opinion | Test                   | value | p            |
|----------------|-----------------|---------------|-------|------------|------------------------|-------|--------------|
| Master         | count           | 12            | 8     | 0          | Fisher's<br>Exact Test | 8,575 | <b>0.047</b> |
| and PHD        | Expected Count  | 12.9          | 6.0   | 1.1        |                        |       |              |
|                | % Within Gender | 60.0%         | 40.0% | 0.0%       |                        |       |              |

|             |                   |       |       |       |
|-------------|-------------------|-------|-------|-------|
| University  | Adjusted Residual | -0.5  | 1.1   | -1.3  |
|             | count             | 42    | 15    | 3     |
|             | Expected Count    | 38.6  | 17.9  | 3.4   |
|             | % Within Gender   | 70.0% | 25.0% | 5.0%  |
| high school | Adjusted Residual | 1.6   | -1.5  | -0.4  |
|             | count             | 2     | 3     | 2     |
|             | Expected Count    | 4.5   | 2.1   | 0.4   |
|             | % Within Gender   | 28.6% | 42.9% | 28.6% |
|             | Adjusted Residual | -2.1  | 0.8   | 2.7   |

It is seen that there is a significant relationship between graduation and the eleventh question ( $p < 0.05$ ). As a result of the pairwise comparisons made over the Adjusted Residual values, it is seen that the number of high school graduates who say they have no idea is significantly higher than the number of undergraduate and master/doctorate graduates. In addition, it is seen that the number of high school graduates who say I Strongly Agree is significantly lower than the number of undergraduate and master/doctorate graduates. In this case, it can be said that high school graduates are less likely to agree with the idea that digitalization facilitates access to the global supply chain.

#### 10.11. Graduation and Data security of international trade has decreased in the digitalization process.

The result of the chi-square test, which measures the relationship between graduation and the twelfth question, is given in the table below.

**Table 41. Graduation and Q12**

| Graduation Q12 |                | Totally Agree | agree | No Opinion | Disagree | Test                | value | p     |
|----------------|----------------|---------------|-------|------------|----------|---------------------|-------|-------|
| Master & PHD   | count          | 2             | 4     | 8          | 6        | Fisher's Exact Test | 1,684 | 0.978 |
|                | Expected Count | 2.1           | 5.3   | 7.8        | 4.8      |                     |       |       |
|                | count          | 6             | 17    | 23         | 14       |                     |       |       |
|                | Expected Count | 6.2           | 15.9  | 23.4       | 14.5     |                     |       |       |
| University     |                |               |       |            |          |                     |       |       |

|             |          |     |     |     |     |
|-------------|----------|-----|-----|-----|-----|
|             | count    | one | 2   | 3   | one |
| high school | Expected | 0.7 | 1.9 | 2.7 | 1.7 |
|             | Count    |     |     |     |     |

It is seen that there is no significant relationship between graduation and the twelfth question ( $p>0.05$ ).

#### 10.12. Graduation and Digitalization has increased transparency in international trade.

The result of the chi-square test, which measures the relationship between graduation and the thirteenth question, is given in the table below.

**Table 42. Graduation and Q13**

| Graduation     |                 | Totally Agree | agree      | No Opinion | Disagree | Test     | value  | p            |
|----------------|-----------------|---------------|------------|------------|----------|----------|--------|--------------|
| Master and PHD | count           | 4             | 13         | one        | 2        |          |        |              |
|                | Expected Count  | 6.2           | 9.0        | 3,4        | 1.4      |          |        |              |
|                | % Within Gender | 20.0%         | 65.0%      | 5.0%       | 10.0%    |          |        |              |
|                | Adjusted        | -1.2          | <b>2.1</b> | -1.7       | 0.6      |          |        |              |
|                | Residual        |               |            |            |          |          |        |              |
| University     | count           | 20            | 25         | 13         | 2        |          |        |              |
|                | Expected Count  | 18.6          | 26.9       | 10.3       | 4.1      | Fisher's |        |              |
|                | % Within Gender | 33.3%         | 41.7%      | 21.7%      | 3.3%     | Exact    | 12,117 | <b>0.033</b> |
|                | Adjusted        | 0.7           | -0.9       | 1.6        | -2.0     | Test     |        |              |
|                | Residual        |               |            |            |          |          |        |              |
| high school    | count           | 3             | one        | one        | 2        |          |        |              |
|                | Expected Count  | 2.2           | 3.1        | 1,2        | 0.5      |          |        |              |
|                | % Within Gender | 42.9%         | 14.3%      | 14.3%      | 28.6%    |          |        |              |
|                | Adjusted        | 0.7           | -1.7       | -0.2       | 2,4      |          |        |              |
|                | Residual        |               |            |            |          |          |        |              |

It is seen that there is a significant relationship between graduation and the thirteenth question ( $p<0.05$ ). As a result of the pairwise comparisons made over the

Adjusted Residual values, it is seen that the number of doctoral graduates who say they agree is significantly higher than the number of high school and undergraduate graduates. In this case, doctorate graduates think that digitalization increases transparency in international trade more than university and high school graduates.

#### **10.13. Graduation and Customer relationship management has become much easier with electronic channels.**

The result of the chi-square test, which measures the relationship between graduation and the fourteenth question, is given in the table below.

**Table 43. Graduation and Q14**

| Graduation Q14 |                | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|----------------|----------------|---------------|-------|------------|----------|------------|-------|-------|
| Master & PHD   | count          | 11th          | 9     | 0          | 0        |            |       |       |
|                | Expected Count | 9.7           | 7.1   | 0.9        | 2.3      |            |       |       |
|                | count          | 27            | 20    | 4          | 9        | Fisher's   |       |       |
| University     | Expected Count | 29.0          | 21.4  | 2.8        | 6.9      | Exact Test | 5,468 | 0.435 |
|                | count          | 4             | 2     | 0          | one      |            |       |       |
| high school    | Expected Count | 3,4           | 2,5   | 0.3        | 0.8      |            |       |       |
|                | count          |               |       |            |          |            |       |       |

It is seen that there is no significant relationship between graduation and the fourteenth question ( $p > 0.05$ ).

#### **10.14. Graduation and Digitalization, provides confidence in the field of international trade.**

The result of the chi-square test, which measures the relationship between graduation and the fifteenth question, is given in the table below.

**Table 44. Graduation and Q15**

| Graduation Q15 |                   | Totally<br>Agree | agree | No<br>Opinion | Disagree | Test          | value | p     |
|----------------|-------------------|------------------|-------|---------------|----------|---------------|-------|-------|
| Master<br>&PHD | count             | 4                | 11th  | 4             | one      |               |       |       |
|                | Expected<br>Count | 5.1              | 8.0   | 3,4           | 3,4      |               |       |       |
|                | count             | 16               | 21    | 9             | 14       | Fisher's      |       |       |
| University     | Expected<br>Count | 15.2             | 24.1  | 10.3          | 10.3     | Exact<br>Test | 6,612 | 0.320 |
|                | count             | 2                | 3     | 2             | 0        |               |       |       |
| high school    | Expected<br>Count | 1.8              | 2.8   | 1,2           | 1,2      |               |       |       |

It is seen that there is no significant relationship between graduation and the fifteenth question ( $p>0.05$ ).

#### **10.15. Graduation and After digitalization, our company's competitiveness in global markets has increased**

The result of the chi-square test, which measures the relationship between graduation and the sixteenth question, is given in the table below.

**Table 45. Graduation and Q16**

| Graduation Q16 |                   | Totally<br>Agree | agree | No<br>Opinion | Test          | value | p     |
|----------------|-------------------|------------------|-------|---------------|---------------|-------|-------|
| Master<br>&PHD | count             | 7                | 8     | 4             |               |       |       |
|                | Expected<br>Count | 6.0              | 9.3   | 3.8           | Fisher's      |       |       |
|                | count             | 18               | 30    | 12            | Exact<br>Test | 0.807 | 0.967 |
| University     | Expected<br>Count | 18.8             | 29.3  | 11.9          |               |       |       |
| high school    | count             | 2                | 4     | one           |               |       |       |

|          |     |     |     |
|----------|-----|-----|-----|
| Expected | 2.2 | 3,4 | 1.4 |
| Count    |     |     |     |

It is seen that there is no significant relationship between graduation and the sixteenth question ( $p>0.05$ ).

#### 10.16. Graduation and Our company's foreign sales volume has increased with digitalization

The result of the chi-square test, which measures the relationship between graduation and the seventeenth question, is given in the table below.

**Table 46. Graduation and Q17**

| Graduation Q17 |                | Totally Agree | agree | No Opinion | Disagree | Test                | value | p     |
|----------------|----------------|---------------|-------|------------|----------|---------------------|-------|-------|
| Master & PHD   | count          | 7             | 9     | 4          | 0        |                     |       |       |
|                | Expected Count | 7.1           | 9.0   | 3.0        | 0.9      |                     |       |       |
| University     | count          | 21            | 28    | 7          | 4        | Fisher's Exact Test | 3,692 | 0.717 |
|                | Expected Count | 21.4          | 26.9  | 9.0        | 2.8      |                     |       |       |
| high school    | count          | 3             | 2     | 2          | 0        |                     |       |       |
|                | Expected Count | 2,5           | 3.1   | 1.0        | 0.3      |                     |       |       |

It is seen that there is no significant relationship between graduation and the seventeenth question ( $p>0.05$ ).

#### 10.17. Graduation and our operational costs decreased with digitalization.

The result of the chi-square test, which measures the relationship between graduation and the eighteenth question, is given in the table below.

**Table 47. Graduation and Q18**

| Graduation Q18 |       | Totally Agree | agree | No Opinion | Disagree | Test | value | p     |
|----------------|-------|---------------|-------|------------|----------|------|-------|-------|
|                | count | 8             | 10    | one        | one      |      | 2,003 | 0.945 |

|              |                |      |      |     |     |                     |
|--------------|----------------|------|------|-----|-----|---------------------|
| Master & PHD | Expected Count | 7.4  | 10.7 | 0.9 | 0.9 | Fisher's Exact Test |
|              | count          | 20   | 33   | 3   | 3   |                     |
| University   | Expected Count | 22.0 | 31.6 | 2.7 | 2.7 |                     |
|              | count          | 4    | 3    | 0   | 0   |                     |
| high school  | Expected Count | 2.6  | 3.7  | 0.3 | 0.3 |                     |

It is seen that there is no significant relationship between graduation and the eighteenth question ( $p>0.05$ ).

#### 10.18. Graduation and Our delivery time of products have decreased with digitalization in international trade

The result of the chi-square test, which measures the relationship between graduation and the nineteenth question, is given in the table below.

**Table 48. Graduation and Q19**

| Graduation Q19 |                | Totally Agree | agree | No Opinion | Disagree | Test                | value | p     |
|----------------|----------------|---------------|-------|------------|----------|---------------------|-------|-------|
| Master & PHD   | count          | 8             | 9     | one        | 2        | Fisher's Exact Test | 2,852 | 0.837 |
|                | Expected Count | 6.0           | 9.9   | 2.1        | 2.1      |                     |       |       |
|                | count          | 17            | 30    | 7          | 6        |                     |       |       |
| University     | Expected Count | 17.9          | 29.7  | 6.2        | 6.2      |                     |       |       |
|                | count          | one           | 4     | one        | one      |                     |       |       |
| high school    | Expected Count | 2.1           | 3,5   | 0.7        | 0.7      |                     |       |       |

It is seen that there is no significant relationship between graduation and the nineteenth question ( $p>0.05$ ).

### 10.19. Graduation and Digitalization has a huge impact on reducing our purchasing costs

The result of the chi-square test, which measures the relationship between graduation and the twentieth question, is given in the table below.

**Table 49. Graduation and Q20**

| Graduation Q20 |                | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|----------------|----------------|---------------|-------|------------|----------|------------|-------|-------|
| Master & PHD   | count          | 6             | 11th  | 2          | one      |            |       |       |
|                | Expected Count | 6.0           | 9.9   | 2.3        | 1.8      |            |       |       |
| University     | count          | 15            | 31    | 7          | 7        | Fisher's   |       |       |
|                | Expected Count | 17.9          | 29.7  | 6.9        | 5.5      | Exact Test | 6,783 | 0.284 |
| high school    | count          | 5             | one   | one        | 0        |            |       |       |
|                | Expected Count | 2.1           | 3,5   | 0.8        | 0.6      |            |       |       |

It is seen that there is no significant relationship between graduation and the twentieth question ( $p > 0.05$ ).

### 10.20. Graduation and Digitalization has made the process easier to measure customer satisfaction.

The result of the chi-square test, which measures the relationship between graduation and the twenty-first question, is given in the table below.

**Table 50. Graduation and Q21**

| Graduation Q21 |                | Totally Agree | agree | No Opinion | Test       | value | p     |
|----------------|----------------|---------------|-------|------------|------------|-------|-------|
| Master & PHD   | count          | 13            | 7     | 0          | Fisher's   |       |       |
|                | Expected Count | 10.6          | 8.0   | 1.4        | Exact Test | 3,232 | 0.484 |
| University     | count          | 30            | 25    | 5          |            |       |       |

|                      |      |      |     |
|----------------------|------|------|-----|
| Expected             | 31.7 | 24.1 | 4.1 |
| Count                |      |      |     |
| count                | 3    | 3    | one |
| high school Expected | 3.7  | 2.8  | 0.5 |
| Count                |      |      |     |

It is seen that there is no significant relationship between graduation and the twenty-first question ( $p>0.05$ ).

Whether the graduation is independent of the research questions can be seen in the summary table below for each question.

**Table 51. p Values for Graduation and Questions**

|            | p Value  |            | p Value          |            | p Value   |
|------------|----------|------------|------------------|------------|-----------|
|            | Q1 0.632 |            | Q8 0.277         |            | Q15 0.320 |
|            | Q2 0.192 |            | Q9 0.678         |            | Q16 0.967 |
|            | Q3 0.473 |            | Q10 0.310        |            | Q17 0.717 |
| Graduation | Q4 0.074 | Graduation | Q11 <b>0.047</b> | Graduation | Q18 0.945 |
|            | Q5 0.141 |            | Q12 0.978        |            | Q19 0.837 |
|            | Q6 0.299 |            | Q13 <b>0.033</b> |            | Q20 0.284 |
|            | Q7 0.573 |            | Q14 0.435        |            | Q21 0.484 |

As can be seen from the table, the p values between graduation and questions 11 and 13 are less than 0.05. In this case, the null hypotheses for questions 11 and 13 are rejected upon graduation. Graduation and questions 11 and 13 are not independent of each other.

## 11. ASSOCIATION OF AGE AND RESEARCH VARIABLES

The relationships between the age variable, which is a four-group categorical variable, and 21 categorical variables measuring the digitalization of trade were tested with the chi-square test. Analyzes showing the relationships between age and research variables were performed separately for each research variable.

**11.1. Age and the role of digitalization is important in determining the selling price of the product/service.**

The result of the chi-square test, which measures the relationship between age and the first question, is given in the table below.

**Table 52. Age and Q1**

| age   | Q1       | Totally Agree | agree | No Opinion | Test     | value | p     |
|-------|----------|---------------|-------|------------|----------|-------|-------|
|       | count    | 9             | 4     | 0          |          |       |       |
| 18-25 | Expected | 6.6           | 6.0   | 0.4        |          |       |       |
|       | Count    |               |       |            |          |       |       |
|       | count    | 9             | 14    | one        |          |       |       |
| 26-40 | Expected | 12.1          | 11.0  | 0.8        | Fisher's |       |       |
|       | Count    |               |       |            | Exact    | 4,157 | 0.640 |
|       | count    | 21            | 17    | 2          | Test     |       |       |
| 41-50 | Expected | 20.2          | 18.4  | 1.4        |          |       |       |
|       | Count    |               |       |            |          |       |       |
|       | count    | 5             | 5     | 0          |          |       |       |
| 51+   | Expected | 5.1           | 4.6   | 0.3        |          |       |       |
|       | Count    |               |       |            |          |       |       |

It is seen that there is no significant relationship between graduation and the first question ( $p > 0.05$ ).

**11.2. Age and Electronic media provide many advantages at the stage of writing specifications.**

The result of the chi-square test, which measures the relationship between age and the second question, is given in the table below.

**Table 53. Age and Q2**

| age   | Q2       | Totally Agree | agree | No Opinion | Test     | value | p     |
|-------|----------|---------------|-------|------------|----------|-------|-------|
|       | count    | 6             | 4     | 3          |          |       |       |
| 18-25 | Expected | 6.4           | 4.9   | 1.6        | Fisher's |       |       |
|       | Count    |               |       |            | Exact    | 2,787 | 0.869 |
|       |          |               |       |            | Test     |       |       |
| 26-40 | count    | 11th          | 10    | 3          |          |       |       |

|       |          |      |      |     |
|-------|----------|------|------|-----|
|       | Expected |      |      |     |
|       | Count    | 11.9 | 9.1  | 3.0 |
|       | count    | 20   | 15   | 5   |
| 41-50 | Expected |      |      |     |
|       | Count    | 19.8 | 15.2 | 5.1 |
|       | count    | 6    | 4    | 0   |
| 51+   | Expected |      |      |     |
|       | Count    | 4.9  | 3.8  | 1.3 |

It is seen that there is no significant relationship between age and the second question ( $p>0.05$ ).

### 11.3. Age and the realization of the tender should be done completely in digital environment.

The result of the chi-square test, which measures the relationship between age and the third question, is given in the table below.

**Table 54. Age and Q3**

| age   | Q3       | Totally Agree | agree | No Opinion | Disagree | Test                | value | p     |
|-------|----------|---------------|-------|------------|----------|---------------------|-------|-------|
|       | count    | 2             | 3     | 4          | 4        |                     |       |       |
| 18-25 | Expected |               |       |            |          |                     |       |       |
|       | Count    | 3.6           | 4.8   | 2.2        | 2.4      |                     |       |       |
|       | count    | 8             | 9     | 4          | 3        |                     |       |       |
| 26-40 | Expected |               |       |            |          |                     |       |       |
|       | Count    | 6.6           | 8.8   | 4.1        | 4.4      |                     |       |       |
|       | count    | 10            | 16    | 5          | 9        | Fisher's Exact Test | 8,157 | 0.516 |
| 41-50 | Expected |               |       |            |          |                     |       |       |
|       | Count    | 11.0          | 14.7  | 6.9        | 7.4      |                     |       |       |
|       | count    | 4             | 4     | 2          | 0        |                     |       |       |
| 51+   | Expected |               |       |            |          |                     |       |       |
|       | Count    | 2.8           | 3.7   | 1.7        | 1.8      |                     |       |       |

It is seen that there is no significant relationship between age and the third question ( $p>0.05$ ).

#### 11.4. Age and Post-tender contract signing must be completely digitalized.

The result of the chi-square test, which measures the relationship between age and the fourth question, is given in the table below.

**Table 55. Age and Q4**

| age   | Q4             | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|-------|----------------|---------------|-------|------------|----------|------------|-------|-------|
|       | count          | 4             | 3     | 3          | 3        |            |       |       |
| 18-25 | Expected Count | 3.9           | 5.2   | 1.6        | 2.2      |            |       |       |
|       | count          | 4             | 12    | 4          | 4        |            |       |       |
| 26-40 | Expected Count | 7.2           | 9.7   | 3.0        | 4.1      | Fisher's   |       |       |
|       | count          | 14            | 15    | 3          | 8        | Exact Test | 8,791 | 0.437 |
| 41-50 | Expected Count | 12.0          | 16.1  | 5.1        | 6.9      |            |       |       |
|       | count          | 4             | 5     | one        | 0        |            |       |       |
| 51+   | Expected Count | 3.0           | 4.0   | 1.3        | 1.7      |            |       |       |

It is seen that there is no significant relationship between age and the fourth question ( $p>0.05$ ).

#### 11.5. Age and All citizens should have a digital signature.

The result of the chi-square test, which measures the relationship between age and the fifth question, is given in the table below.

**Table 56. Age and Q5**

| age   | Q5             | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|-------|----------------|---------------|-------|------------|----------|------------|-------|-------|
|       | count          | 6             | 6     | one        | 0        | Fisher's   |       |       |
| 18-25 | Expected Count | 4.5           | 6.6   | 0.6        | 1.3      | Exact Test | 6,234 | 0.705 |

|       |          |      |      |     |     |
|-------|----------|------|------|-----|-----|
|       | count    | 8    | 14   | 0   | 2   |
| 26-40 | Expected | 8.3  | 12.1 | 1.1 | 2,5 |
|       | Count    |      |      |     |     |
|       | count    | 13   | 20   | 2   | 5   |
| 41-50 | Expected | 13.8 | 20.2 | 1.8 | 4.1 |
|       | Count    |      |      |     |     |
|       | count    | 3    | 4    | one | 2   |
| 51+   | Expected | 3,4  | 5.1  | 0.5 | 1.0 |
|       | Count    |      |      |     |     |

It is seen that there is no significant relationship between age and the fifth question ( $p>0.05$ ).

#### 11.6. Age and All money transactions must be done in 100% digital environment

The result of the chi-square test, which measures the relationship between age and the sixth question, is given in the table below.

**Table 57. Age and Q6**

| age   | Q6       | Totally Agree | agree | No Opinion | Disagree | Totally Disagree | Test     | value  | p     |
|-------|----------|---------------|-------|------------|----------|------------------|----------|--------|-------|
|       | count    | 3             | 4     | 2          | one      | 3                |          |        |       |
| 18-25 | Expected | 4.6           | 3.9   | 1.0        | 2,5      | 0.9              |          |        |       |
|       | Count    |               |       |            |          |                  |          |        |       |
|       | count    | 10            | 4     | 3          | 6        | one              |          |        |       |
| 26-40 | Expected | 8.6           | 7.2   | 1.9        | 4.7      | 1.7              | Fisher's |        |       |
|       | Count    |               |       |            |          |                  | Exact    | 12,004 | 0.379 |
|       | count    | 13            | 14    | 2          | 9        | 2                | Test     |        |       |
| 41-50 | Expected | 14.3          | 12.0  | 3.2        | 7.8      | 2.8              |          |        |       |
|       | Count    |               |       |            |          |                  |          |        |       |
|       | count    | 5             | 4     | 0          | one      | 0                |          |        |       |
| 51+   | Expected | 3.6           | 3.0   | 0.8        | 2.0      | 0.7              |          |        |       |
|       | Count    |               |       |            |          |                  |          |        |       |

It is seen that there is no significant relationship between age and the sixth question ( $p>0.05$ ).

#### 11.7. Age and Warehousing and stock control must be performed completely by Internet of Things

The result of the chi-square test, which measures the relationship between age and the seventh question, is given in the table below.

**Table 58. Age and Q7**

| age   | Q7             | Totally Agree | agree | No Opinion | Disagree | Test     | value  | p     |
|-------|----------------|---------------|-------|------------|----------|----------|--------|-------|
|       | count          | 4             | 4     | 5          | 0        |          |        |       |
| 18-25 | Expected Count | 4.2           | 5.4   | 1.9        | 1.5      |          |        |       |
|       | count          | 8             | 11th  | one        | 4        |          |        |       |
| 26-40 | Expected Count | 7.7           | 9.9   | 3.6        | 2.8      | Fisher's |        |       |
|       | count          | 11th          | 17    | 6          | 6        | Exact    | 10,332 | 0.285 |
| 41-50 | Expected Count | 12.9          | 16.6  | 6.0        | 4.6      | Test     |        |       |
|       | count          | 5             | 4     | one        | 0        |          |        |       |
| 51+   | Expected Count | 3.2           | 4.1   | 1.5        | 1.1      |          |        |       |

It is seen that there is no significant relationship between age and the seventh question ( $p>0.05$ ).

#### 11.8. Age and Companies should use an Enterprise Resource Planning (ERP) software

The result of the chi-square test, which measures the relationship between age and the eighth question, is given in the table below.

**Table 59. Age and Q8**

| age   | Q8                | Totally<br>Agree | agree | No<br>Opinion | Disagree | Test                      | value | p     |
|-------|-------------------|------------------|-------|---------------|----------|---------------------------|-------|-------|
|       | count             | 8                | 4     | one           | 0        |                           |       |       |
| 18-25 | Expected<br>Count | 7.0              | 4.5   | 0.9           | 0.6      |                           |       |       |
|       | count             | 11th             | 9     | 2             | 2        |                           |       |       |
| 26-40 | Expected<br>Count | 13.0             | 8.3   | 1.7           | 1.1      | Fisher's<br>Exact<br>Test | 2,847 | 0.993 |
|       | count             | 22               | 13    | 3             | 2        |                           |       |       |
| 41-50 | Expected<br>Count | 21.6             | 13.8  | 2.8           | 1.8      |                           |       |       |
|       | count             | 6                | 4     | 0             | 0        |                           |       |       |
| 51+   | Expected<br>Count | 5.4              | 3,4   | 0.7           | 0.5      |                           |       |       |

It is seen that there is no significant relationship between age and the eighth question ( $p>0.05$ ).

#### **11.9. age and Planning of distribution operation should be done in a completely digital environment**

The result of the chi-square test, which measures the relationship between age and the ninth question, is given in the table below.

**Table 60. Age and Q9**

| age   | Q9                | Totally<br>Agree | agree | No<br>Opinion | Disagree | Test                      | value | p     |
|-------|-------------------|------------------|-------|---------------|----------|---------------------------|-------|-------|
|       | count             | 6                | 5     | 2             | 0        |                           |       |       |
| 18-25 | Expected<br>Count | 6.3              | 5.2   | 0.6           | 0.9      | Fisher's<br>Exact<br>Test | 6,894 | 0.609 |
|       | count             | 10               | 11th  | 0             | 3        |                           |       |       |
| 26-40 | Expected<br>Count | 11.6             | 9.7   | 1.1           | 1.7      |                           |       |       |

|       |          |      |      |     |     |
|-------|----------|------|------|-----|-----|
|       | count    | 19   | 16   | 2   | 3   |
| 41-50 | Expected | 19.3 | 16.1 | 1.8 | 2.8 |
|       | Count    |      |      |     |     |
|       | count    | 7    | 3    | 0   | 0   |
| 51+   | Expected | 4.8  | 4.0  | 0.5 | 0.7 |
|       | Count    |      |      |     |     |

It is seen that there is no significant relationship between age and the ninth question ( $p>0.05$ ).

#### **11.10. Age and the impact of digitalization on international trade is very high in operational dimension**

The result of the chi-square test, which measures the relationship between age and the tenth question, is given in the table below.

**Table 61. Age and Q10**

| age   | Q10      | Totally Agree | agree | No Opinion | Test     | value | p     |
|-------|----------|---------------|-------|------------|----------|-------|-------|
|       | count    | 7             | 5     | one        |          |       |       |
| 18-25 | Expected | 8.2           | 3.9   | 0.9        |          |       |       |
|       | Count    |               |       |            |          |       |       |
|       | count    | 15            | 7     | 2          |          |       |       |
| 26-40 | Expected | 15.1          | 7.3   | 1.7        | Fisher's |       |       |
|       | Count    |               |       |            | Exact    | 2,100 | 0.941 |
|       | count    | 26            | 10    | 3          | Test     |       |       |
| 41-50 | Expected | 24.5          | 11.8  | 2.7        |          |       |       |
|       | Count    |               |       |            |          |       |       |
|       | count    | 6             | 4     | 0          |          |       |       |
| 51+   | Expected | 6.3           | 3.0   | 0.7        |          |       |       |
|       | Count    |               |       |            |          |       |       |

It is seen that there is no significant relationship between age and the tenth question ( $p>0.05$ ).

**11.11. Age and Digitalization has made access to global supply channel easier.**

The result of the chi-square test, which measures the relationship between age and the eleventh question, is given in the table below.

**Table 62. Age and Q11**

| age   | Q11      | Totally Agree | agree | No Opinion | Test     | value | p     |
|-------|----------|---------------|-------|------------|----------|-------|-------|
|       | count    | 7             | 4     | 2          |          |       |       |
| 18-25 | Expected | 8.4           | 3.9   | 0.7        |          |       |       |
|       | Count    |               |       |            |          |       |       |
|       | count    | 17            | 6     | one        |          |       |       |
| 26-40 | Expected | 15.4          | 7.2   | 1.4        | Fisher's |       |       |
|       | Count    |               |       |            | Exact    | 3,356 | 0.780 |
|       | count    | 26            | 12    | 2          | Test     |       |       |
| 41-50 | Expected | 25.7          | 12.0  | 2.3        |          |       |       |
|       | Count    |               |       |            |          |       |       |
|       | count    | 6             | 4     | 0          |          |       |       |
| 51+   | Expected | 6.4           | 3.0   | 0.6        |          |       |       |
|       | Count    |               |       |            |          |       |       |

It is seen that there is no significant relationship between age and the eleventh question ( $p>0.05$ ).

**11.12. Age and Data security of international trade has decreased in the digitalization process.**

The result of the chi-square test, which measures the relationship between age and the twelfth question, is given in the table below.

**Table 63. Age and Q12**

| age   | Q12      | Totally Agree | agree | No Opinion | Disagree | Test     | value | p     |
|-------|----------|---------------|-------|------------|----------|----------|-------|-------|
|       | count    | one           | 2     | 8          | 2        | Fisher's |       |       |
| 18-25 | Expected | 1.3           | 3,4   | 5.1        | 3.1      | Exact    | 8,849 | 0.430 |
|       | Count    |               |       |            |          | Test     |       |       |

|       |          |     |      |      |     |
|-------|----------|-----|------|------|-----|
|       | count    | 2   | 7    | 7    | 8   |
| 26-40 | Expected | 2,5 | 6.3  | 9.4  | 5.8 |
|       | Count    |     |      |      |     |
|       | count    | 6   | 10   | 17   | 7   |
| 41-50 | Expected | 4.1 | 10.6 | 15.6 | 9.7 |
|       | Count    |     |      |      |     |
|       | count    | 0   | 4    | 2    | 4   |
| 51+   | Expected | 1.0 | 2.6  | 3.9  | 2,4 |
|       | Count    |     |      |      |     |

It is seen that there is no significant relationship between age and the twelfth question ( $p>0.05$ ).

### 11.13. Age and Digitalization has increased transparency in international trade.

The result of the chi-square test, which measures the relationship between age and the thirteenth question, is given in the table below.

**Table 64. Age and Q13**

| age   | Q13      | Totally<br>Agree | agree | No<br>Opinion | Disagree | Test     | value  | p     |
|-------|----------|------------------|-------|---------------|----------|----------|--------|-------|
|       | count    | 8                | 2     | 3             | 0        |          |        |       |
| 18-25 | Expected | 4.0              | 5.8   | 2.2           | 0.9      |          |        |       |
|       | Count    |                  |       |               |          |          |        |       |
|       | count    | 5                | 13    | 4             | 2        |          |        |       |
| 26-40 | Expected | 7.4              | 10.8  | 4.1           | 1.7      | Fisher's |        |       |
|       | Count    |                  |       |               |          | Exact    | 11,594 | 0.184 |
|       | count    | 9                | 20    | 7             | 4        | Test     |        |       |
| 41-50 | Expected | 12.4             | 17.9  | 6.9           | 2.8      |          |        |       |
|       | Count    |                  |       |               |          |          |        |       |
|       | count    | 5                | 4     | one           | 0        |          |        |       |
| 51+   | Expected | 3.1              | 4.5   | 1.7           | 0.7      |          |        |       |
|       | Count    |                  |       |               |          |          |        |       |

It is seen that there is no significant relationship between age and the thirteenth question ( $p>0.05$ ).

#### **11.14. Age and Customer relationship management has become much easier with electronic channels.**

The result of the chi-square test, which measures the relationship between age and the fourteenth question, is given in the table below.

**Table 65. Age and Q14**

| age   | Q14            | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|-------|----------------|---------------|-------|------------|----------|------------|-------|-------|
|       | count          | 7             | 3     | one        | 2        |            |       |       |
| 18-25 | Expected Count | 6.3           | 4.6   | 0.6        | 1.5      |            |       |       |
|       | count          | 12            | 10    | one        | one      |            |       |       |
| 26-40 | Expected Count | 11.6          | 8.6   | 1.1        | 2.8      | Fisher's   |       |       |
|       | count          | 18            | 15    | 2          | 5        | Exact Test | 4,518 | 0.903 |
| 41-50 | Expected Count | 19.3          | 14.3  | 1.8        | 4.6      |            |       |       |
|       | count          | 5             | 3     | 0          | 2        |            |       |       |
| 51+   | Expected Count | 4.8           | 3.6   | 0.5        | 1.1      |            |       |       |

It is seen that there is no significant relationship between age and the fourteenth question ( $p>0.05$ ).

#### **11.15. Age and Digitalization, provides confidence in the field of international trade.**

The result of the chi-square test, which measures the relationship between age and the fifteenth question, is given in the table below.

**Table 66. Age and Q15**

| age   | Q15            | Totally Agree | agree | No Opinion | Disagree | Test       | value  | p     |
|-------|----------------|---------------|-------|------------|----------|------------|--------|-------|
|       | count          | 6             | 2     | 2          | 3        |            |        |       |
| 18-25 | Expected Count | 3.3           | 5.2   | 2.2        | 2.2      |            |        |       |
|       | count          | 4             | 14    | 2          | 4        |            |        |       |
| 26-40 | Expected Count | 6.1           | 9.7   | 4.1        | 4.1      | Fisher's   |        |       |
|       | count          | 10            | 12    | 11th       | 7        | Exact Test | 14,765 | 0.072 |
| 41-50 | Expected Count | 10.1          | 16.1  | 6.9        | 6.9      |            |        |       |
|       | count          | 2             | 7     | 0          | one      |            |        |       |
| 51+   | Expected Count | 2,5           | 4.0   | 1.7        | 1.7      |            |        |       |

It is seen that there is no significant relationship between age and the fifteenth question ( $p > 0.05$ ).

#### **11.16. Age and After Digitalization, our company's competitiveness in global markets has increased**

The result of the chi-square test, which measures the relationship between age and the sixteenth question, is given in the table below.

**Table 67. Age and Q16**

| age   | Q16               | Totally Agree | agree | No Opinion | Test       | value  | p     |
|-------|-------------------|---------------|-------|------------|------------|--------|-------|
|       | count             | 8             | 4     | one        |            |        |       |
|       | Expected Count    | 4.1           | 6.3   | 2.6        |            |        |       |
| 18-25 | % Within Gender   | 61.5%         | 30.8% | 7.7%       | Fisher's   |        |       |
|       | Adjusted Residual | 2,5           | -1.4  | -1.2       | Exact Test | 13,188 | 0.030 |
| 26-40 | count             | 8             | 11th  | 5          |            |        |       |
|       | Expected Count    | 7.5           | 11.7  | 4.7        |            |        |       |

|       |                 |       |       |       |
|-------|-----------------|-------|-------|-------|
|       | % Within Gender | 33.3% | 45.8% | 20.8% |
|       | Adjusted        |       |       |       |
|       | Residual        | 0.2   | -0.3  | 0.2   |
|       | count           | 6     | 22    | 11th  |
|       | Expected Count  | 12.2  | 19.0  | 7.7   |
| 41-50 | % Within Gender | 15.4% | 56.4% | 28.2% |
|       | Adjusted        |       |       |       |
|       | Residual        | -2.9  | 1.3   | 1.8   |
|       | count           | 5     | 5     | 0     |
|       | Expected Count  | 3.1   | 4.9   | 2.0   |
| 51+   | % Within Gender | 50.0% | 50.0% | 0.0%  |
|       | Adjusted        |       |       |       |
|       | Residual        | 1.3   | 0.1   | -1.7  |

It is seen that there is a significant relationship between age and the sixteenth question ( $p < 0.05$ ). As a result of pairwise comparisons made over Adjusted Residuals values, it is seen that the number of 18-25 age groups who say they completely agree is significantly higher than the number of other age groups. Therefore, the younger age group thinks that digitalization increases the company's global competitive advantage more than other age groups.

#### **11.17. Age and Our Company's foreign sales volume has increased with digitalization**

The result of the chi-square test, which measures the relationship between age and the seventeenth question, is given in the table below.

**Table 68. Age and Q17**

| age   | Q17            | Totally Agree | agree | No Opinion | Disagree | Test                      | value | p     |
|-------|----------------|---------------|-------|------------|----------|---------------------------|-------|-------|
|       | count          | 7             | 5     | one        | 0        | Fisher's<br>Exact<br>Test | 9,936 | 0.291 |
| 18-25 | Expected Count | 4.6           | 5.8   | 1.9        | 0.6      |                           |       |       |
| 26-40 | count          | 11th          | 9     | 4          | 0        |                           |       |       |

|       |          |      |      |     |     |
|-------|----------|------|------|-----|-----|
|       | Expected | 8.6  | 10.8 | 3.6 | 1.1 |
|       | Count    |      |      |     |     |
|       | count    | 8    | 21   | 7   | 4   |
| 41-50 | Expected | 14.3 | 17.9 | 6.0 | 1.8 |
|       | Count    |      |      |     |     |
|       | count    | 5    | 4    | one | 0   |
| 51+   | Expected | 3.6  | 4.5  | 1.5 | 0.5 |
|       | Count    |      |      |     |     |

It is seen that there is no significant relationship between age and the seventeenth question ( $p>0.05$ ).

#### 11.18. Age and our operational costs decreased with digitalization.

The result of the chi-square test, which measures the relationship between age and the eighteenth question, is given in the table below.

**Table 69. Age and Q18**

| age   | Q18      | Totally Agree | agree | No Opinion | Disagree | Test     | value  | p     |
|-------|----------|---------------|-------|------------|----------|----------|--------|-------|
|       | count    | 5             | 5     | 2          | one      |          |        |       |
| 18-25 | Expected | 4.8           | 7.0   | 0.6        | 0.6      |          |        |       |
|       | Count    |               |       |            |          |          |        |       |
|       | count    | 9             | 13    | 0          | 2        |          |        |       |
| 26-40 | Expected | 8.9           | 12.8  | 1.1        | 1.1      | Fisher's |        |       |
|       | Count    |               |       |            |          | Exact    | 11,171 | 0.164 |
|       | count    | 11th          | 25    | 2          | one      | Test     |        |       |
| 41-50 | Expected | 14.5          | 20.9  | 1.8        | 1.8      |          |        |       |
|       | Count    |               |       |            |          |          |        |       |
|       | count    | 7             | 3     | 0          | 0        |          |        |       |
| 51+   | Expected | 3.7           | 5.3   | 0.5        | 0.5      |          |        |       |
|       | Count    |               |       |            |          |          |        |       |

It is seen that there is no significant relationship between age and the eighteenth question ( $p>0.05$ ).

### 11.19. Age and Our Delivery time of products have decreased with digitalization in international trade

The result of the chi-square test, which measures the relationship between age and the nineteenth question, is given in the table below.

**Table 70. Age and Q19**

| age   | Q19            | Totally Agree | agree | No Opinion | Disagree | Test       | value | p     |
|-------|----------------|---------------|-------|------------|----------|------------|-------|-------|
|       | count          | 7             | 3     | 2          | one      |            |       |       |
| 18-25 | Expected Count | 3.9           | 6.4   | 1.3        | 1.3      |            |       |       |
|       | count          | 9             | 11th  | 3          | one      |            |       |       |
| 26-40 | Expected Count | 7.2           | 11.9  | 2,5        | 2,5      | Fisher's   |       |       |
|       | count          | 8             | 23    | 3          | 6        | Exact Test | 9,977 | 0.298 |
| 41-50 | Expected Count | 12.0          | 19.8  | 4.1        | 4.1      |            |       |       |
|       | count          | 2             | 6     | one        | one      |            |       |       |
| 51+   | Expected Count | 3.0           | 4.9   | 1.0        | 1.0      |            |       |       |

It is seen that there is no significant relationship between age and the nineteenth question ( $p > 0.05$ ).

### 11.20. Age and Digitalization has a huge impact on reducing our purchasing costs

The result of the chi-square test, which measures the relationship between age and the twentieth question, is given in the table below.

**Table 71. Age and Q20**

| age   | Q20   | Totally Agree | agree | No Opinion | Disagree | Test | value  | p     |
|-------|-------|---------------|-------|------------|----------|------|--------|-------|
| 18-25 | count | 4             | 2     | 4          | 3        |      | 15,294 | 0.052 |

|       |                   |      |      |     |     |                           |
|-------|-------------------|------|------|-----|-----|---------------------------|
|       | Expected<br>Count | 3.9  | 6.4  | 1.5 | 1,2 |                           |
|       | count             | 6    | 13   | 4   | one |                           |
| 26-40 | Expected<br>Count | 7.2  | 11.9 | 2.8 | 2.2 | Fisher's<br>Exact<br>Test |
|       | count             | 11th | 23   | 2   | 4   |                           |
| 41-50 | Expected<br>Count | 12.0 | 19.8 | 4.6 | 3.7 |                           |
|       | count             | 5    | 5    | 0   | 0   |                           |
| 51+   | Expected<br>Count | 3.0  | 4.9  | 1.1 | 0.9 |                           |

It is seen that there is no significant relationship between age and the twentieth question ( $p>0.05$ ).

#### **11.21. Age and Digitalization has made the process easier to measure customer satisfaction.**

The result of the chi-square test, which measures the relationship between age and the twenty-first question, is given in the table below.

**Table 72. Age and Q21**

| age   | Q21               | Totally Agree | agree | No Opinion | Test                      | value  | p     |
|-------|-------------------|---------------|-------|------------|---------------------------|--------|-------|
|       | count             | 9             | 4     | 0          |                           |        |       |
| 18-25 | Expected<br>Count | 6.9           | 5.2   | 0.9        |                           |        |       |
|       | count             | 14            | 7     | 3          |                           |        |       |
| 26-40 | Expected<br>Count | 12.7          | 9.7   | 1.7        | Fisher's<br>Exact<br>Test | 12,199 | 0.061 |
|       | count             | 15            | 23    | 2          |                           |        |       |
| 41-50 | Expected<br>Count | 21.1          | 16.1  | 2.8        |                           |        |       |
|       | count             | 8             | one   | one        |                           |        |       |
| 51+   | Expected<br>Count | 5.3           | 4.0   | 0.7        |                           |        |       |

It is seen that there is no significant relationship between age and the twenty-first question ( $p > 0.05$ ).

Whether age is independent of the research questions can be seen in the summary table below for each question.

**Table 73. p Values for Age and Questions**

| p Value |    |       | p Value |     |       | p Value |     |              |
|---------|----|-------|---------|-----|-------|---------|-----|--------------|
| age     | Q1 | 0.640 | age     | Q8  | 0.993 | age     | Q15 | 0.072        |
|         | Q2 | 0.869 |         | Q9  | 0.609 |         | Q16 | <b>0.030</b> |
|         | Q3 | 0.516 |         | Q10 | 0.941 |         | Q17 | 0.291        |
|         | Q4 | 0.437 |         | Q11 | 0.780 |         | Q18 | 0.164        |
|         | Q5 | 0.705 |         | Q12 | 0.430 |         | Q19 | 0.298        |
|         | Q6 | 0.379 |         | Q13 | 0.184 |         | Q20 | 0.052        |
|         | Q7 | 0.285 |         | Q14 | 0.903 |         | Q21 | 0.061        |

As can be seen from the table, the p value between age and question 16 is less than 0.05. In this case, the null hypothesis for age and question 16 is rejected. Age and question 16 are not independent of each other.

## 12. ASSOCIATION OF LEVEL OF POSITION AND RESEARCH VARIABLES

The relationships between the position level variable, which is a categorical variable with five groups, and 21 categorical variables measuring the digitalization of trade were tested with the chi-square test.

### 12.1. Level of Position and the role of digitalization is important in determining the selling price of the product/service.

The result of the chi-square test, which measures the relationship between Position Level and the first question, is given in the table below.

**Table 74. Level of Position and Q1**

| position | Q1    | Totally Agree | agree | No Opinion | Test | value | p     |
|----------|-------|---------------|-------|------------|------|-------|-------|
| Director | count | 6             | 8     | 2          |      | 6,036 | 0.619 |

|            |          |      |      |     |                           |
|------------|----------|------|------|-----|---------------------------|
|            | Expected | 8.1  | 7.4  | 0.6 | Fisher's<br>Exact<br>Test |
|            | Count    |      |      |     |                           |
| Senior     | count    | 11th | 11th | 0   |                           |
|            | Expected |      |      |     |                           |
| Manager    | Count    | 11.1 | 10.1 | 0.8 |                           |
|            | count    | 9    | 10   | one |                           |
| Mid-Level  | Expected |      |      |     |                           |
|            | Count    | 10.1 | 9.2  | 0.7 |                           |
| Specialist | count    | 11th | 7    | 0   |                           |
|            | Expected |      |      |     |                           |
| Specialist | Count    | 9.1  | 8.3  | 0.6 |                           |
|            | count    | 7    | 4    | 0   |                           |
| Assistant  | Expected |      |      |     |                           |
|            | Count    | 5.6  | 5.1  | 0.4 |                           |

It is seen that there is no significant relationship between Position Level and the first question ( $p>0.05$ ).

#### 12.2. Level of Position and Electronic media provides many advantages of writing specifications.

The result of the chi-square test, which measures the relationship between Position Level and the second question, is given in the table below.

**Table 75. Level of Position and Q2**

| position | Q2       | Totally<br>Agree | agree | No<br>Opinion | Test                      | value | p     |
|----------|----------|------------------|-------|---------------|---------------------------|-------|-------|
| Director | count    | 8                | 7     | one           | Fisher's<br>Exact<br>Test | 6,525 | 0.595 |
|          | Expected | 7.9              | 6.1   | 2.0           |                           |       |       |
| Senior   | Count    |                  |       |               |                           |       |       |
|          | count    | 12               | 8     | 2             |                           |       |       |
| Manager  | Expected |                  |       |               |                           |       |       |
|          | Count    | 10.9             | 8.3   | 2.8           |                           |       |       |
|          | count    | 11th             | 8     | one           |                           |       |       |

|                      |                |     |     |     |
|----------------------|----------------|-----|-----|-----|
| Mid-Level Manager    | Expected Count | 9.9 | 7.6 | 2,5 |
|                      | count          | 8   | 7   | 3   |
| Specialist           | Expected Count | 8.9 | 6.8 | 2.3 |
|                      | count          | 4   | 3   | 4   |
| Specialist Assistant | Expected Count | 5.4 | 4.2 | 1.4 |

It is seen that there is no significant relationship between Position Level and the second question ( $p>0.05$ ).

### 12.3. Level of Position and The realization of the tender should be done completely in digital environment.

The result of the chi-square test, which measures the relationship between Position Level and the third question, is given in the table below.

**Table 76. Level of Position and Q3**

| position          | Q3             | Totally Agree | agree | No Opinion | Disagree | Test     | value  | p     |
|-------------------|----------------|---------------|-------|------------|----------|----------|--------|-------|
|                   | count          | 4             | 4     | 4          | 4        |          |        |       |
| Director          | Expected Count | 4.4           | 5.9   | 2.8        | 2.9      |          |        |       |
| Senior Manager    | count          | 6             | 11th  | 2          | 3        |          |        |       |
|                   | Expected Count | 6.1           | 8.1   | 3.8        | 4.0      | Fisher's |        |       |
| Mid-Level Manager | count          | 6             | 11th  | 0          | 3        | Exact    | 17,726 | 0.100 |
|                   | Expected Count | 5.5           | 7.4   | 3,4        | 3.7      | Test     |        |       |
|                   | count          | 6             | 4     | 6          | 2        |          |        |       |
| Specialist        | Expected Count | 5.0           | 6.6   | 3.1        | 3.3      |          |        |       |
|                   | count          | 2             | 2     | 3          | 4        |          |        |       |

|            |          |     |     |     |     |
|------------|----------|-----|-----|-----|-----|
| Specialist | Expected | 3.0 | 4.0 | 1.9 | 2.0 |
| Assistant  | Count    |     |     |     |     |

It is seen that there is no significant relationship between Position Level and the third question ( $p>0.05$ ).

#### 12.4. Level of Position and Post-tender contract signing must be completely digitalized.

The result of the chi-square test, which measures the relationship between Position Level and the fourth question, is given in the table below.

**Table 77. Level of Position and Q4**

| position   | Q4       | Totally Agree | agree | No Opinion | Disagree | Test     | value  | p     |
|------------|----------|---------------|-------|------------|----------|----------|--------|-------|
|            | count    | 5             | 8     | one        | 2        |          |        |       |
| Director   | Expected | 4.8           | 6.4   | 2.0        | 2.8      |          |        |       |
|            | Count    |               |       |            |          |          |        |       |
| Senior     | count    | 8             | 7     | 2          | 5        |          |        |       |
| Manager    | Expected | 6.6           | 8.9   | 2.8        | 3.8      |          |        |       |
|            | Count    |               |       |            |          |          |        |       |
| Mid-Level  | count    | 4             | 10    | one        | 5        | Fisher's |        |       |
| Manager    | Expected | 6.0           | 8.0   | 2,5        | 3,4      | Exact    | 13,151 | 0.332 |
|            | Count    |               |       |            |          | Test     |        |       |
|            | count    | 6             | 7     | 5          | 0        |          |        |       |
| Specialist | Expected | 5.4           | 7.2   | 2.3        | 3.1      |          |        |       |
|            | Count    |               |       |            |          |          |        |       |
| Specialist | count    | 3             | 3     | 2          | 3        |          |        |       |
| Assistant  | Expected | 3.3           | 4.4   | 1.4        | 1.9      |          |        |       |
|            | Count    |               |       |            |          |          |        |       |

It is seen that there is no significant relationship between Position Level and the fourth question ( $p>0.05$ ).

### 12.5. Level of Position and All citizens should have a digital signature.

The result of the chi-square test, which measures the relationship between Position Level and the fifth question, is given in the table below.

**Table 78. Level of Position and Q5**

| position             | Q5             | Totally Agree | agree | No Opinion | Disagree | Test                | value | p     |
|----------------------|----------------|---------------|-------|------------|----------|---------------------|-------|-------|
| Director             | count          | 8             | 6     | one        | one      |                     |       |       |
|                      | Expected Count | 5.5           | 8.1   | 0.7        | 1.7      |                     |       |       |
| Senior Manager       | count          | 5             | 14    | one        | 2        |                     |       |       |
|                      | Expected Count | 7.6           | 11.1  | 1.0        | 2.3      |                     |       |       |
| Mid-Level Manager    | count          | 5             | 11th  | one        | 3        | Fisher's Exact Test | 8,646 | 0.732 |
|                      | Expected Count | 6.9           | 10.1  | 0.9        | 2.1      |                     |       |       |
| Specialist           | count          | 9             | 7     | 0          | 2        |                     |       |       |
|                      | Expected Count | 6.2           | 9.1   | 0.8        | 1.9      |                     |       |       |
| Specialist Assistant | count          | 3             | 6     | one        | one      |                     |       |       |
|                      | Expected Count | 3.8           | 5.6   | 0.5        | 1.1      |                     |       |       |

It is seen that there is no significant relationship between Position Level and the fifth question ( $p>0.05$ ).

### 12.6. Level of Position and All money transactions must be done in 100% digital environment

The result of the chi-square test, which measures the relationship between Position Level and the sixth question, is given in the table below.

**Table 79. Level of Position and Q6**

| position | Q6 | Totally Agree | agree | No Opinion | Disagree | Totally Disagree | Test | value | p |
|----------|----|---------------|-------|------------|----------|------------------|------|-------|---|
|----------|----|---------------|-------|------------|----------|------------------|------|-------|---|

|            |          |     |     |     |     |     |                      |
|------------|----------|-----|-----|-----|-----|-----|----------------------|
|            | count    | 6   | 7   | one | 2   | 0   |                      |
| Director   | Expected | 5.7 | 4.8 | 1.3 | 3.1 | 1.1 |                      |
|            | Count    |     |     |     |     |     |                      |
| Senior     | count    | 9   | 4   | 2   | 7   | 0   |                      |
| Manager    | Expected | 7.8 | 6.6 | 1.8 | 4.3 | 1.5 |                      |
|            | Count    |     |     |     |     |     |                      |
| Mid-       | count    | 6   | 7   | one | 4   | 2   | Fisher'              |
| Level      | Expected | 7.1 | 6.0 | 1.6 | 3.9 | 1.4 | s Exact 17,404 0.245 |
| Manager    | Count    |     |     |     |     |     | Test                 |
|            | count    | 8   | 4   | one | 4   | one |                      |
| Specialist | Expected | 6.4 | 5.4 | 1.4 | 3,5 | 1,2 |                      |
|            | Count    |     |     |     |     |     |                      |
| Specialist | count    | 2   | 4   | 2   | 0   | 3   |                      |
| Assistant  | Expected | 3.9 | 3.3 | 0.9 | 2.1 | 0.8 |                      |
|            | Count    |     |     |     |     |     |                      |

It is seen that there is no significant relationship between Position Level and the sixth question ( $p>0.05$ ).

### 12.7. Level of Position and Warehousing and stock control must be performed completely by Internet of Things

The result of the chi-square test, which measures the relationship between Position Level and the seventh question, is given in the table below.

**Table 80. Level of Position and Q7**

| position | Q7       | Totally Agree | agree | No Opinion | Disagree | Test     | value  | p     |
|----------|----------|---------------|-------|------------|----------|----------|--------|-------|
|          | count    | 5             | 6     | 3          | 2        |          |        |       |
| Director | Expected | 5.1           | 6.6   | 2,4        | 1.8      |          |        |       |
|          | Count    |               |       |            |          | Fisher's |        |       |
| Senior   | count    | 8             | 9     | 2          | 3        | Exact    | 18,127 | 0.076 |
| Manager  | Expected | 7.1           | 9.1   | 3.3        | 2,5      | Test     |        |       |
|          | Count    |               |       |            |          |          |        |       |
|          | count    | 6             | 8     | one        | 5        |          |        |       |

|                      |                |     |     |     |     |
|----------------------|----------------|-----|-----|-----|-----|
| Mid-Level Manager    | Expected Count | 6.4 | 8.3 | 3.0 | 2.3 |
|                      | count          | 7   | 10  | one | 0   |
| Specialist           | Expected Count | 5.8 | 7.4 | 2.7 | 2.1 |
|                      | count          | 2   | 3   | 6   | 0   |
| Specialist Assistant | Expected Count | 3,5 | 4.6 | 1.6 | 1.3 |

It is seen that there is no significant relationship between Position Level and the seventh question ( $p>0.05$ ).

#### 12.8. Level of Position and Companies should use an Enterprise Resource Planning (ERP) software

The result of the chi-square test, which measures the relationship between Position Level and the eighth question, is given in the table below.

**Table 81. Level of Position and Q8**

| position          | Q8             | Totally Agree | agree | No Opinion | Disagree | Test     | value  | p     |
|-------------------|----------------|---------------|-------|------------|----------|----------|--------|-------|
|                   | count          | 8             | 7     | 0          | one      |          |        |       |
| Director          | Expected Count | 8.6           | 5.5   | 1.1        | 0.7      |          |        |       |
| Senior Manager    | count          | 12            | 8     | 2          | 0        |          |        |       |
|                   | Expected Count | 11.9          | 7.6   | 1.5        | 1.0      | Fisher's |        |       |
| Mid-Level Manager | count          | 8             | 8     | 3          | one      | Exact    | 14,769 | 0.133 |
|                   | Expected Count | 10.8          | 6.9   | 1.4        | 0.9      | Test     |        |       |
| Specialist        | count          | 15            | 2     | 0          | one      |          |        |       |
|                   | Expected Count | 9.7           | 6.2   | 1,2        | 0.8      |          |        |       |
|                   | count          | 4             | 5     | one        | one      |          |        |       |

|            |          |     |     |     |     |
|------------|----------|-----|-----|-----|-----|
| Specialist | Expected | 5.9 | 3.8 | 0.8 | 0.5 |
| Assistant  | Count    |     |     |     |     |

It is seen that there is no significant relationship between Position Level and the eighth question ( $p>0.05$ ).

### 12.9. Level of Position and Planning of distribution operation should be done in a completely digital environment

The result of the chi-square test, which measures the relationship between Position Level and the ninth question, is given in the table below.

**Table 82. Level of Position and Q9**

| position   | Q9       | Totally Agree | agree | No Opinion | Disagree | Test     | value | p     |
|------------|----------|---------------|-------|------------|----------|----------|-------|-------|
|            | count    | 8             | 5     | one        | 2        |          |       |       |
| Director   | Expected | 7.7           | 6.4   | 0.7        | 1.1      |          |       |       |
|            | Count    |               |       |            |          |          |       |       |
| Senior     | count    | 11th          | 10    | 0          | one      |          |       |       |
| Manager    | Expected | 10.6          | 8.9   | 1.0        | 1.5      |          |       |       |
|            | Count    |               |       |            |          |          |       |       |
| Mid-Level  | count    | 10            | 8     | 0          | 2        | Fisher's |       |       |
| Manager    | Expected | 9.7           | 8.0   | 0.9        | 1.4      | Exact    | 8,860 | 0.701 |
|            | Count    |               |       |            |          | Test     |       |       |
|            | count    | 9             | 8     | one        | 0        |          |       |       |
| Specialist | Expected | 8.7           | 7.2   | 0.8        | 1,2      |          |       |       |
|            | Count    |               |       |            |          |          |       |       |
| Specialist | count    | 4             | 4     | 2          | one      |          |       |       |
| Assistant  | Expected | 5.3           | 4.4   | 0.5        | 0.8      |          |       |       |
|            | Count    |               |       |            |          |          |       |       |

It is seen that there is no significant relationship between Position Level and the ninth question ( $p>0.05$ ).

### 12.10. Level of Position and the impact of digitalization on international trade is very high in operational dimension

The result of the chi-square test, which measures the relationship between Position Level and the tenth question, is given in the table below.

**Table 83. Level of Position and Q10**

| position             | Q10            | Totally Agree | agree | No Opinion | Test       | value  | p     |
|----------------------|----------------|---------------|-------|------------|------------|--------|-------|
|                      | count          | 10            | 4     | one        |            |        |       |
| Director             | Expected Count | 9.4           | 4.5   | 1.0        |            |        |       |
| Senior Manager       | count          | 15            | 6     | one        |            |        |       |
|                      | Expected Count | 13.8          | 6.7   | 1.5        |            |        |       |
| Mid-Level Manager    | count          | 13            | 7     | 0          | Fisher's   |        |       |
|                      | Expected Count | 12.6          | 6.0   | 1.4        | Exact Test | 10,128 | 0.189 |
| Specialist           | count          | 13            | 3     | 2          |            |        |       |
|                      | Expected Count | 11.3          | 5.4   | 1.3        |            |        |       |
| Specialist Assistant | count          | 3             | 6     | 2          |            |        |       |
|                      | Expected Count | 6.9           | 3.3   | 0.8        |            |        |       |

It is seen that there is no significant relationship between Position Level and the tenth question ( $p > 0.05$ ).

### 1.11. Level of Position and Digitalization has made access to global supply channel easier.

The result of the chi-square test, which measures the relationship between Position Level and the eleventh question, is given in the table below.

**Table 84. Level of Position and Q11**

| position   | Q11      | Totally Agree | agree | No Opinion | Test     | value | p     |
|------------|----------|---------------|-------|------------|----------|-------|-------|
|            | count    | 8             | 8     | 0          |          |       |       |
| Director   | Expected | 10.3          | 4.8   | 0.9        |          |       |       |
|            | Count    |               |       |            |          |       |       |
| Senior     | count    | 17            | 3     | 2          |          |       |       |
| Manager    | Expected | 14.2          | 6.6   | 1.3        |          |       |       |
|            | Count    |               |       |            |          |       |       |
| Mid-Level  | count    | 13            | 6     | one        | Fisher's |       |       |
| Manager    | Expected | 12.9          | 6.0   | 1.1        | Exact    | 9,692 | 0.208 |
|            | Count    |               |       |            | Test     |       |       |
|            | count    | 12            | 6     | 0          |          |       |       |
| Specialist | Expected | 11.6          | 5.4   | 1.0        |          |       |       |
|            | Count    |               |       |            |          |       |       |
| Specialist | count    | 6             | 3     | 2          |          |       |       |
| Assistant  | Expected | 7.1           | 3.3   | 0.6        |          |       |       |
|            | Count    |               |       |            |          |       |       |

It is seen that there is no significant relationship between Position Level and the eleventh question ( $p>0.05$ ).

#### **12.11. Level of Position and Data security of international trade has decreased in the digitalization process.**

The result of the chi-square test, which measures the relationship between Position Level and the twelfth question, is given in the table below.

**Table 85. Level of Position and Q12**

| position | Q12      | Totally Agree | agree | No Opinion | Disagree | Test     | value  | p     |
|----------|----------|---------------|-------|------------|----------|----------|--------|-------|
|          | count    | 2             | 6     | 7          | one      | Fisher's |        |       |
| Director | Expected | 1.7           | 4.2   | 6.3        | 3.9      | Exact    | 19,235 | 0.055 |
|          | Count    |               |       |            |          | Test     |        |       |

|                      |                |     |     |     |      |
|----------------------|----------------|-----|-----|-----|------|
| Senior Manager       | count          | 2   | 8   | 8   | 4    |
|                      | Expected Count | 2.3 | 5.8 | 8.6 | 5.3  |
| Mid-Level Manager    | count          | 3   | 6   | 9   | 2    |
|                      | Expected Count | 2.1 | 5.3 | 7.8 | 4.8  |
| Specialist           | count          | one | one | 5   | 11th |
|                      | Expected Count | 1.9 | 4.8 | 7.0 | 4.3  |
| Specialist Assistant | count          | one | 2   | 5   | 3    |
|                      | Expected Count | 1.1 | 2.9 | 4.3 | 2.7  |

It is seen that there is no significant relationship between Position Level and the twelfth question ( $p>0.05$ ).

#### 12.12. Level of Position and Digitalization has increased transparency in international trade.

The result of the chi-square test, which measures the relationship between Position Level and the thirteenth question, is given in the table below.

**Table 86. Level of Position and Q13**

| position          | Q13            | Totally Agree | agree | No Opinion | Disagree | Test                | value | p     |
|-------------------|----------------|---------------|-------|------------|----------|---------------------|-------|-------|
| Director          | count          | 5             | 7     | 3          | one      | Fisher's Exact Test | 7,226 | 0.868 |
|                   | Expected Count | 5.0           | 7.2   | 2.8        | 1.1      |                     |       |       |
| Senior Manager    | count          | 4             | 12    | 4          | 2        |                     |       |       |
|                   | Expected Count | 6.8           | 9.9   | 3.8        | 1.5      |                     |       |       |
| Mid-Level Manager | count          | 6             | 10    | 3          | one      |                     |       |       |
|                   | Expected Count | 6.2           | 9.0   | 3,4        | 1.4      |                     |       |       |
| Specialist        | count          | 7             | 8     | 2          | one      |                     |       |       |

|            |                   |     |     |     |     |
|------------|-------------------|-----|-----|-----|-----|
|            | Expected<br>Count | 5.6 | 8.1 | 3.1 | 1,2 |
| Specialist | count             | 5   | 2   | 3   | one |
| Assistant  | Expected<br>Count | 3,4 | 4.9 | 1.9 | 0.8 |

It is seen that there is no significant relationship between Position Level and the thirteenth question ( $p>0.05$ ).

### 12.13. Level of Position and Customer relationship management has become much easier with electronic channels.

The result of the chi-square test, which measures the relationship between Position Level and the fourteenth question, is given in the table below.

**Table 87. Level of Position and Q14**

| position                | Q14               | Totally<br>Agree | agree | No<br>Opinion | Disagree | Test          | value | p     |
|-------------------------|-------------------|------------------|-------|---------------|----------|---------------|-------|-------|
|                         | count             | 5                | 8     | 0             | 3        |               |       |       |
| Director                | Expected<br>Count | 7.7              | 5.7   | 0.7           | 1.8      |               |       |       |
| Senior<br>Manager       | count             | 11th             | 7     | one           | 3        |               |       |       |
|                         | Expected<br>Count | 10.6             | 7.8   | 1.0           | 2,5      |               |       |       |
| Mid-Level<br>Manager    | count             | 12               | 5     | 2             | one      | Fisher's      |       |       |
|                         | Expected<br>Count | 9.7              | 7.1   | 0.9           | 2.3      | Exact<br>Test | 8,729 | 0.722 |
|                         | count             | 8                | 8     | 0             | 2        |               |       |       |
| Specialist              | Expected<br>Count | 8.7              | 6.4   | 0.8           | 2.1      |               |       |       |
|                         | count             | 6                | 3     | one           | one      |               |       |       |
| Specialist<br>Assistant | Expected<br>Count | 5.3              | 3.9   | 0.5           | 1.3      |               |       |       |

It is seen that there is no significant relationship between Position Level and the fourteenth question ( $p>0.05$ ).

#### **12.14. Level of Position and Digitalization, provides confidence in the field of international trade.**

The result of the chi-square test, which measures the relationship between Position Level and the fifteenth question, is given in the table below.

**Table 88. Level of Position and Q15**

| position             | Q15            | Totally Agree | agree | No Opinion | Disagree | Test       | value  | p     |
|----------------------|----------------|---------------|-------|------------|----------|------------|--------|-------|
|                      | count          | 4             | 5     | 3          | 4        |            |        |       |
| Director             | Expected Count | 4.0           | 6.4   | 2.8        | 2.8      |            |        |       |
| Senior Manager       | count          | 4             | 10    | 4          | 4        |            |        |       |
|                      | Expected Count | 5.6           | 8.9   | 3.8        | 3.8      |            |        |       |
| Mid-Level Manager    | count          | 4             | 10    | 4          | 2        | Fisher's   |        |       |
|                      | Expected Count | 5.1           | 8.0   | 3.4        | 3.4      | Exact Test | 13,546 | 0.309 |
|                      | count          | 7             | 9     | one        | one      |            |        |       |
| Specialist           | Expected Count | 4.6           | 7.2   | 3.1        | 3.1      |            |        |       |
| Specialist Assistant | count          | 3             | one   | 3          | 4        |            |        |       |
|                      | Expected Count | 2.8           | 4.4   | 1.9        | 1.9      |            |        |       |

It is seen that there is no significant relationship between the Position Level and the fifteenth question ( $p>0.05$ ).

#### **12.15. Level of Position and After digitalization, our company's competitiveness in global markets has increased**

The result of the chi-square test, which measures the relationship between Position Level and the sixteenth question, is given in the table below.

**Table 89. Level of Position and Q16**

| position   | Q16      | Totally Agree | agree | No Opinion | Test     | value | p     |
|------------|----------|---------------|-------|------------|----------|-------|-------|
|            | count    | 4             | 8     | 3          |          |       |       |
| Director   | Expected | 4.7           | 7.3   | 3.0        |          |       |       |
|            | Count    |               |       |            |          |       |       |
| Senior     | count    | 6             | 13    | 3          |          |       |       |
| Manager    | Expected | 6.9           | 10.7  | 4.3        |          |       |       |
|            | Count    |               |       |            |          |       |       |
| Mid-Level  | count    | 5             | 11th  | 4          | Fisher's |       |       |
| Manager    | Expected | 6.3           | 9.8   | 4.0        | Exact    | 4,540 | 0.827 |
|            | Count    |               |       |            | Test     |       |       |
|            | count    | 8             | 6     | 4          |          |       |       |
| Specialist | Expected | 5.7           | 8.8   | 3.6        |          |       |       |
|            | Count    |               |       |            |          |       |       |
| Specialist | count    | 4             | 4     | 3          |          |       |       |
| Assistant  | Expected | 3,5           | 5.4   | 2.2        |          |       |       |
|            | Count    |               |       |            |          |       |       |

It is seen that there is no significant relationship between the Position Level and the sixteenth question ( $p>0.05$ ).

#### **12.16. Level of Position and Our company's foreign sales volume has increased with digitalization**

The result of the chi-square test, which measures the relationship between Position Level and the seventeenth question, is given in the table below.

**Table 90. Level of Position and Q17**

| position | Q17      | Totally Agree | agree | No Opinion | Disagree | Test     | value | p     |
|----------|----------|---------------|-------|------------|----------|----------|-------|-------|
|          | count    | 4             | 9     | 2          | one      | Fisher's |       |       |
| Director | Expected | 5.7           | 7.2   | 2,4        | 0.7      | Exact    | 6,498 | 0.920 |
|          | Count    |               |       |            |          | Test     |       |       |

|                      |                |     |     |     |     |
|----------------------|----------------|-----|-----|-----|-----|
| Senior Manager       | count          | 8   | 10  | 3   | one |
|                      | Expected Count | 7.8 | 9.9 | 3.3 | 1.0 |
| Mid-Level Manager    | count          | 5   | 9   | 4   | 2   |
|                      | Expected Count | 7.1 | 9.0 | 3.0 | 0.9 |
| Specialist           | count          | 8   | 7   | 3   | 0   |
|                      | Expected Count | 6.4 | 8.1 | 2.7 | 0.8 |
| Specialist Assistant | count          | 6   | 4   | one | 0   |
|                      | Expected Count | 3.9 | 4.9 | 1.6 | 0.5 |

It is seen that there is no significant relationship between Position Level and the seventeenth question ( $p>0.05$ ).

#### 12.17. Level of Position and Our operational costs decreased with digitalization.

The result of the chi-square test, which measures the relationship between Position Level and the eighteenth question, is given in the table below.

**Table 91. Level of Position and Q18**

| position          | Q18            | Totally Agree | agree | No Opinion | Disagree | Test                | value  | p     |
|-------------------|----------------|---------------|-------|------------|----------|---------------------|--------|-------|
| Director          | count          | 5             | 9     | one        | one      | Fisher's Exact Test | 12,083 | 0.298 |
|                   | Expected Count | 6.0           | 8.6   | 0.7        | 0.7      |                     |        |       |
| Senior Manager    | count          | 8             | 14    | 0          | 0        |                     |        |       |
|                   | Expected Count | 8.2           | 11.8  | 1.0        | 1.0      |                     |        |       |
| Mid-Level Manager | count          | 8             | 11th  | 0          | 0        |                     |        |       |
|                   | Expected Count | 7.1           | 10.2  | 0.9        | 0.9      |                     |        |       |
| Specialist        | count          | 8             | 8     | one        | one      |                     |        |       |

|                         |                   |     |     |     |     |
|-------------------------|-------------------|-----|-----|-----|-----|
| Specialist<br>Assistant | Expected<br>Count | 6.7 | 9.6 | 0.8 | 0.8 |
|                         | count             | 3   | 4   | 2   | 2   |
|                         | Expected<br>Count | 4.1 | 5.9 | 0.5 | 0.5 |
|                         | count             |     |     |     |     |

It is seen that there is no significant relationship between the Position Level and the eighteenth question ( $p>0.05$ ).

#### 12.18. Level of Position and Our delivery time of products have decreased with digitalization in international trade

The result of the chi-square test, which measures the relationship between Position Level and the nineteenth question, is given in the table below.

**Table 92. Level of Position and Q19**

| position                | Q19               | Totally<br>Agree | agree | No<br>Opinion | Disagree | Test                      | value  | p     |
|-------------------------|-------------------|------------------|-------|---------------|----------|---------------------------|--------|-------|
| Director                | count             | 3                | 8     | 3             | 2        | Fisher's<br>Exact<br>Test | 12,448 | 0.362 |
|                         | Expected<br>Count | 4.8              | 7.9   | 1.7           | 1.7      |                           |        |       |
| Senior<br>Manager       | count             | 5                | 14    | one           | 2        |                           |        |       |
|                         | Expected<br>Count | 6.6              | 10.9  | 2.3           | 2.3      |                           |        |       |
| Mid-Level<br>Manager    | count             | 5                | 12    | 2             | one      |                           |        |       |
|                         | Expected<br>Count | 6.0              | 9.9   | 2.1           | 2.1      |                           |        |       |
| Specialist              | count             | 10               | 5     | one           | 2        |                           |        |       |
|                         | Expected<br>Count | 5.4              | 8.9   | 1.9           | 1.9      |                           |        |       |
| Specialist<br>Assistant | count             | 3                | 4     | 2             | 2        |                           |        |       |
|                         | Expected<br>Count | 3.3              | 5.4   | 1.1           | 1.1      |                           |        |       |

It is seen that there is no significant relationship between Position Level and the nineteenth question ( $p>0.05$ ).

### 12.19. Level of Position and Digitalization has a huge impact on reducing our purchasing costs

The result of the chi-square test, which measures the relationship between Position Level and the twentieth question, is given in the table below.

**Table 93. Level of Position and Q20**

| Graduation           | Q20               | Totally Agree | agree | No Opinion | Disagree | Test     | value  | p            |
|----------------------|-------------------|---------------|-------|------------|----------|----------|--------|--------------|
|                      | count             | 4             | 10    | one        | one      |          |        |              |
|                      | Expected Count    | 4.8           | 7.9   | 1.8        | 1.5      |          |        |              |
| Director             | % Within Gender   | 25.0%         | 62.5% | 6.3%       | 6.3%     |          |        |              |
|                      | Adjusted Residual | -0.5          | 1.2   | -0.7       | -0.5     |          |        |              |
|                      | count             | 5             | 13    | one        | 3        |          |        |              |
|                      | Expected Count    | 6.6           | 10.9  | 2.5        | 2.0      |          |        |              |
| Senior Manager       | % Within Gender   | 22.7%         | 59.1% | 4.5%       | 13.6%    |          |        |              |
|                      | Adjusted Residual | -0.8          | 1.0   | -1.2       | 0.8      |          |        |              |
|                      | count             | 5             | 12    | 2          | one      | Fisher's |        |              |
|                      | Expected Count    | 6.0           | 9.9   | 2.3        | 1.8      | Exact    | 19,690 | <b>0.035</b> |
| Mid-Level Manager    | % Within Gender   | 25.0%         | 60.0% | 10.0%      | 5.0%     | Test     |        |              |
|                      | Adjusted Residual | -0.5          | 1.1   | -0.2       | -0.7     |          |        |              |
|                      | count             | 9             | 7     | 2          | 0        |          |        |              |
|                      | Expected Count    | 5.4           | 8.9   | 2.1        | 1.7      |          |        |              |
| Specialist           | % Within Gender   | 50.0%         | 38.9% | 11.1%      | 0.0%     |          |        |              |
|                      | Adjusted Residual | <b>2.1</b>    | -1.0  | -0.1       | -1.5     |          |        |              |
|                      | count             | 3             | one   | 4          | 3        |          |        |              |
|                      | Expected Count    | 3.3           | 5.4   | 1.3        | 1.0      |          |        |              |
| Specialist Assistant | % Within Gender   | 27.3%         | 9.1%  | 36.4%      | 27.3%    |          |        |              |

|          |      |      |     |     |
|----------|------|------|-----|-----|
| Adjusted | -0.2 | -2.9 | 2.8 | 2.2 |
| Residual |      |      |     |     |

It is seen that there is a significant relationship ( $p < 0.05$ ) between the Position Level and the twentieth question. As a result of the pairwise comparisons made over the Adjusted Residual values, it is seen that the number of experts who say they completely agree is significantly higher than the number of other occupational groups. In addition, the number of assistant experts who say I agree, have no idea and disagree is significantly higher than the number of other occupational groups. In this case, it can be said that experts agree with the idea that digitalization reduces purchasing costs more than other occupational groups. On the contrary, assistant experts do not agree with the idea that digitalization reduces purchasing costs.

#### 12.20. Level of Position and Digitalization has made the process easier to measure customer satisfaction.

The result of the chi-square test, which measures the relationship between Position Level and the twenty-first question, is given in the table below.

**Table 94. Level of Position and Q21**

| position          | Q21            | Totally Agree | agree | No Opinion | Test                | value | p     |
|-------------------|----------------|---------------|-------|------------|---------------------|-------|-------|
|                   | count          | 6             | 8     | 2          |                     |       |       |
| Director          | Expected Count | 8.5           | 6.4   | 1.1        |                     |       |       |
| Senior Manager    | count          | 11th          | 10    | one        |                     |       |       |
|                   | Expected Count | 11.6          | 8.9   | 1.5        |                     |       |       |
| Mid-Level Manager | count          | 12            | 7     | one        | Fisher's Exact Test | 3,776 | 0.914 |
|                   | Expected Count | 10.6          | 8.0   | 1.4        |                     |       |       |
| Specialist        | count          | 11th          | 6     | one        |                     |       |       |
|                   | Expected Count | 9.5           | 7.2   | 1,2        |                     |       |       |
|                   | count          | 6             | 4     | one        |                     |       |       |

|            |          |     |     |     |
|------------|----------|-----|-----|-----|
| Specialist | Expected | 5.8 | 4.4 | 0.8 |
| Assistant  | Count    |     |     |     |

It is seen that there is no significant relationship between Position Level and the twenty-first question ( $p > 0.05$ ).

Whether the graduation is independent of the research questions can be seen in the summary table below for each question.

**Table 95. p Values for Level of Position and Questions**

|                      |    | p Value |                      |     | p Value |                      |     | p Value      |
|----------------------|----|---------|----------------------|-----|---------|----------------------|-----|--------------|
| Level of<br>Position | Q1 | 0.619   | Level of<br>Position | Q8  | 0.133   | Level of<br>Position | Q15 | 0.309        |
|                      | Q2 | 0.595   |                      | Q9  | 0.701   |                      | Q16 | 0.827        |
|                      | Q3 | 0.100   |                      | Q10 | 0.189   |                      | Q17 | 0.920        |
|                      | Q4 | 0.332   |                      | Q11 | 0.208   |                      | Q18 | 0.298        |
|                      | Q5 | 0.732   |                      | Q12 | 0.055   |                      | Q19 | 0.362        |
|                      | Q6 | 0.245   |                      | Q13 | 0.868   |                      | Q20 | <b>0.035</b> |
|                      | Q7 | 0.076   |                      | Q14 | 0.722   |                      | Q21 | 0.914        |

As can be seen from the table, the p value between the position level and question 20 is less than 0.05. In this case, the null hypothesis for question 20 with position level is rejected. Position level and question 20 are not independent of each other.

### 13. CORRELATIONS OF RESEARCH VARIABLES

The correlation values of the research variables among themselves were measured with the Kendall's tau correlation coefficient ( $\tau$ ). The values shown in Table 87 are correlation coefficients. There is no negative significant correlation in any of the research variables. In this case, it can be said that the values of the research variables increase and decrease together. It is seen that the highest correlation value is between Q16 and Q17 ( $\tau = 0.556$ ). In this case, there is a significant positive relationship between digitalization and the strengthening of the company's position in global competition and the increase in import figures. Those who state that digitalization

strengthens the company's position in global competition also state that the company's import figures have increased.

Table x was obtained as a result of subtracting the correlation values of the questions that did not have a significant relationship between them. As can be seen from the table, the 12th question has no significant relationship with any other question. The question with the most significant relationship with the other questions is the 10th question.

|     | Q1    | Q2    | Q3      | Q4      | Q5      | Q6      | Q7      | Q8      | Q9      | Q10     | Q11     | Q12    | Q13     | Q14     | Q15     | Q16     | Q17     | Q18     | Q19     | Q20     | Q21     |
|-----|-------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Q1  | 1,000 | 0.189 | 0.031   | 0.130   | -0.050  | -0.050  | .222 *  | 0.066   | 0.083   | .225 *  | 0.146   | 0.130  | .199 *  | .235 *  | 0.150   | .308 ** | 0.171   | 0.176   | .233 *  | 0.130   | 0.114   |
| Q2  |       | 1,000 | .263 ** | .373 ** | 0.165   | .199 *  | .189 *  | 0.162   | .295 ** | .426 ** | .351 ** | 0.017  | .466 ** | .222 *  | .219 *  | .240 *  | .228 *  | .289 ** | .196 *  | .226 *  | .270 ** |
| Q3  |       |       | 1,000   | .484 ** | .265 ** | 0.158   | 0.176   | .200 *  | .430 ** | .241 *  | 0.151   | -0.075 | .227 *  | 0.141   | .405 ** | 0.156   | 0.116   | .233 *  | 0.081   | .202 *  | 0.065   |
| Q4  |       |       |         | 1,000   | .393 ** | .231 *  | .319 ** | .210 *  | .361 ** | .191 *  | 0.054   | -0.061 | .371 ** | 0.049   | .295 ** | .199 *  | .208 *  | 0.140   | 0.027   | 0.135   | 0.079   |
| Q5  |       |       |         |         | 1,000   | .355 ** | .413 ** | .237 *  | .290 ** | 0.181   | -0.020  | -0.085 | .449 ** | 0.006   | .238 *  | 0.187   | .219 *  | 0.053   | 0.094   | 0.050   | 0.080   |
| Q6  |       |       |         |         |         | 1,000   | .364 ** | .245 ** | .185 *  | .224 *  | 0.092   | 0.030  | 0.172   | 0.043   | 0.127   | .206 *  | 0.112   | 0.130   | 0.120   | 0.158   | 0.115   |
| Q7  |       |       |         |         |         |         | 1,000   | .241 *  | .517 ** | .326 ** | 0.096   | 0.098  | .358 ** | .198 *  | .228 *  | .345 ** | .316 ** | 0.190   | 0.165   | .212 *  | .245 *  |
| Q8  |       |       |         |         |         |         |         | 1,000   | .358 ** | .324 ** | 0.181   | -0.113 | .256 ** | 0.128   | .355 ** | .260 ** | 0.119   | 0.072   | .214 *  | 0.028   | .254 *  |
| Q9  |       |       |         |         |         |         |         |         | 1,000   | .458 ** | .245 *  | 0.017  | .407 ** | 0.125   | .344 ** | .308 ** | .237 *  | .282 ** | 0.116   | .230 *  | 0.166   |
| Q10 |       |       |         |         |         |         |         |         |         | 1,000   | .537 ** | 0.161  | .354 ** | .239 *  | .332 ** | .394 ** | .200 *  | .376 ** | .259 ** | .231 *  | .254 *  |
| Q11 |       |       |         |         |         |         |         |         |         |         | 1,000   | 0.081  | 0.150   | .310 ** | .260 ** | .318 ** | .226 *  | .354 ** | .206 *  | 0.145   | .235 *  |
| Q12 |       |       |         |         |         |         |         |         |         |         |         | 1,000  | -0.127  | 0.064   | -0.141  | 0.037   | -0.034  | 0.104   | -0.011  | 0.035   | -0.107  |
| Q13 |       |       |         |         |         |         |         |         |         |         |         |        | 1,000   | .284 ** | .315 ** | .428 ** | .407 ** | .362 ** | 0.177   | .200 *  | .361 ** |
| Q14 |       |       |         |         |         |         |         |         |         |         |         |        |         | 1,000   | .333 ** | .376 ** | .345 ** | .337 ** | .281 ** | .292 ** | .482 ** |
| Q15 |       |       |         |         |         |         |         |         |         |         |         |        |         |         | 1,000   | .404 ** | .228 *  | .326 ** | .356 ** | .273 ** | .313 ** |
| Q16 |       |       |         |         |         |         |         |         |         |         |         |        |         |         |         | 1,000   | .556 ** | .494 ** | .340 ** | .248 *  | .372 ** |
| Q17 |       |       |         |         |         |         |         |         |         |         |         |        |         |         |         |         | 1,000   | .425 ** | 0.176   | .212 *  | .383 ** |
| Q18 |       |       |         |         |         |         |         |         |         |         |         |        |         |         |         |         |         | 1,000   | .360 ** | .411 ** | .425 ** |
| Q19 |       |       |         |         |         |         |         |         |         |         |         |        |         |         |         |         |         |         | 1,000   | .493 ** | .437 ** |
| Q20 |       |       |         |         |         |         |         |         |         |         |         |        |         |         |         |         |         |         |         | 1,000   | .266 ** |
| Q21 |       |       |         |         |         |         |         |         |         |         |         |        |         |         |         |         |         |         |         |         | 1,000   |

**Table 96. Correlations of Research Variables**

\*Correlation is significant at the 0.05 level (2-tailed). \*\*Correlation is significant at the 0.01 level (2-tailed).

**Table 97. Significant Correlations of Research Variables**

|     | Q1     | Q2     | Q3     | Q4     | Q5     | Q6     | Q7     | Q8     | Q9     | Q10    | Q11    | Q12 | Q13    | Q14    | Q15    | Q16    | Q17    | Q18    | Q19    | Q20    | Q21    |
|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Q1  |        |        |        |        |        |        | ,222*  |        |        | ,225*  |        |     | ,199*  | ,235*  |        | ,308** |        |        | ,233*  |        |        |
| Q2  |        |        | ,263** | ,373** |        | ,199*  | ,189*  |        | ,295** | ,426** | ,351** |     | ,466** | ,222*  | ,219*  | ,240*  | ,228*  | ,289** | ,196*  | ,226*  | ,270** |
| Q3  |        | ,263** |        | ,484** | ,265** |        |        | ,200*  | ,430** | ,241*  |        |     | ,227*  |        | ,405** |        |        | ,233*  |        | ,202*  |        |
| Q4  |        | ,373** | ,484** |        | ,393** | ,231*  | ,319** | ,210*  | ,361** | ,191*  |        |     | ,371** | ,371** | ,295** | ,199*  | ,208*  |        |        |        |        |
| Q5  |        |        | ,265** | ,393** |        | ,355** | ,413** | ,237*  | ,290** |        |        |     | ,449** |        | ,238*  |        | ,219*  |        |        |        |        |
| Q6  |        | ,199*  |        | ,231*  | ,355** |        | ,364** | ,245** | ,185*  | ,224*  |        |     |        |        |        | ,206*  |        |        |        |        |        |
| Q7  | ,222*  | ,189*  |        | ,319** | ,413** | ,364** |        | ,241*  | ,517** | ,326** |        |     | ,358** | ,198*  | ,228*  | ,345** | ,316** |        |        | ,212*  | ,245*  |
| Q8  |        |        | ,200*  | ,210*  | ,237*  | ,245** | ,241*  |        | ,358** | ,324** |        |     | ,256** |        | ,355** | ,260** |        |        | ,214*  |        | ,254*  |
| Q9  |        | ,295** | ,430** | ,361** | ,290** | ,185*  | ,517** | ,358** |        | ,458** | ,245*  |     | ,407** |        | ,344** | ,308** | ,237*  | ,282** |        | ,230*  |        |
| Q10 | ,225*  | ,426** | ,241*  | ,191*  |        | ,224*  | ,326** | ,324** | ,458** |        | ,537** |     | ,354** | ,239*  | ,332** | ,394** | ,200*  | ,376** | ,259** | ,231*  | ,254*  |
| Q11 |        | ,351** |        |        |        |        |        |        | ,245*  | ,537** |        |     |        | ,310** | ,260** | ,318** | ,226*  | ,354** | ,206*  |        | ,235*  |
| Q12 |        |        |        |        |        |        |        |        |        |        |        |     |        |        |        |        |        |        |        |        |        |
| Q13 | ,199*  | ,466** | ,227*  | ,371** | ,449** |        | ,358** | ,256** | ,407** | ,354** |        |     |        | ,284** | ,315** | ,428** | ,407** | ,362** |        | ,200*  | ,361** |
| Q14 | ,235*  | ,222*  |        |        |        |        | ,198*  |        |        | ,239*  | ,310** |     | ,284** |        | ,333** | ,376** | ,345** | ,337** | ,281** | ,292** | ,482** |
| Q15 |        | ,219*  | ,405** | ,295** | ,238*  |        | ,228*  | ,355** | ,344** | ,332** | ,260** |     | ,315** | ,333** |        | ,404** | ,228*  | ,326** | ,356** | ,273** | ,313** |
| Q16 | ,308** | ,240*  |        | ,199*  |        | ,206*  | ,345** | ,260** | ,308** | ,394** | ,318** |     | ,428** | ,376** | ,404** |        | ,556** | ,494** | ,340** | ,248*  | ,372** |
| Q17 |        | ,228*  |        | ,208*  | ,219*  |        | ,316** |        | ,237*  | ,200*  | ,226*  |     | ,407** | ,345** | ,228*  | ,556** |        | ,425** |        | ,212*  | ,383** |
| Q18 |        | ,289** | ,233*  |        |        |        |        |        | ,282** | ,376** | ,354** |     | ,362** | ,337** | ,326** | ,494** | ,425** |        | ,360** | ,411** | ,425** |
| Q19 | ,233*  | ,196*  |        |        |        |        |        | ,214*  |        | ,259** | ,206*  |     |        | ,281** | ,356** | ,340** |        | ,360** |        | ,493** | ,437** |
| Q20 |        | ,226*  | ,202*  |        |        |        | ,212*  |        | ,230*  | ,231*  |        |     | ,200*  | ,292** | ,273** | ,248*  | ,212*  | ,411** | ,493** |        | ,266** |
| Q21 |        | ,270** |        |        |        |        | ,245*  | ,254*  |        | ,254*  | ,235*  |     | ,361** | ,482** | ,313** | ,372** | ,383** | ,425** | ,437** | ,266** |        |

## CONCLUSION

International trade is on the verge of a new era. The digital revolution, referred to as the Fourth Industrial Revolution – whose advent is generally believed to have come with the early twenty-first century – will change the nature and forms of manufacturing processes and trade in goods and services. Globalization and regionalism are making them ever more international. This means that goods and services are becoming more complex and more costly in their realization. We may safely assume that the modern technologies and devices will play a critical role in overcoming these barriers to the development of global economy. The vast number of these devices

– including computers, the Internet, and mobile phones – was already in use during the Third Industrial Revolution; what we are witnessing now is their further development.

Other inventions

– including the Internet of Things, cloud computing, big data, artificial intelligence, 3D printing, augmented reality, Blockchain, nanomaterials, and synthetic biology – are at the stage of advanced research, with their experimental use about to be tested in practice. These innovations are expected to significantly impact the growth of world trade volume, also leading to a decline in its costs and information asymmetry, besides shortening the time needed for transaction completion and the delivery of goods and services. The digital era will see the international transfer marked by reliability, punctuality, security, the elimination of losses caused by errors and fraud, along with a high guarantee that payments will be made.

We will also witness significant changes in the global trade structure. The growth trend of services will accelerate.

Instruments in the Internet of Things, online platforms, smart devices, Blockchain and other digital infrastructure will greatly simplify communication between manufacturers, exporters, importers and consumers.

Trading conditions will change significantly with the implementation of 4IR devices. Those who move first will be those who benefit the most. Developed countries have the best chance of competition with their advantages in terms of capital and technology.

With falling trade costs and reduced requirements for the material infrastructure of trade, small and medium-sized enterprises from developing countries will be able to increase their share of world trade.

In this study, I evaluated the effects of demographic variables in areas such as age, gender, education level, experience level of rapidly digitalizing international trade.

As a result of this study,

Digitalization makes a positive contribution to improving the business processes of a company that trades internationally, making it transparent, reducing costs, measuring customer satisfaction accurately and efficiently, and increasing its market share in exports.

In this context, it can be said that there is a positive correlation between the increase in education and position level and digitalization processes. Therefore, the progress to be made in this field has a great contribution to the digitalization processes.

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