

The role of information and communication technology in the development of industrial business

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Abstract

In today's era, information and communication technology is one of the most important factors of economic development it has been the industrial countries and especially the superior technology which is very important in the industrial growth and development of the countries and it plays a significant role in overtaking other competitors in the field of global trade. Therefore, due to the importance of information and communication technology in the development of industry business, it is mandatory is that its role in Iran's industrial trade relations and its trading partners by industries Analyze based on technology level. This study of bilateral trade flows Iran's industries and its top business partners are taken into account and to eliminate the heterogeneity of the countries the panel data method was used. Also, the model under review for this purpose, using the panel data method for 18 countries that are Iran's top trading partners the years 2000-2011 are estimated and the results of this research show a positive and significant effect information and communication technology is the business model of these countries. Also, the effect that ICT affects the trade of high-tech industries more than the trade of low-tech industries and the expansion of information and communication technology has compensated for the negative effect of geographical distance and increases the volume of trade between countries.

keywords: Information and communication technology, bilateral trade, high technology, low technology, industrial development

Introduction

Today, the discussion of information and communication technology (ICT) and its importance and role in trade flows of countries are one of the important topics of international economy and economic development and the application of this technology in various economic and commercial fields has tremendous effects has made the phenomenon more visible. Many economic benefits of using information technology and communication in economy and commerce, including saving exchange costs, increasing company productivity and industry, changing the management and production processes of economic enterprises, reducing search costs more, easier and cheaper access to information, reducing market entry restrictions increasing the number of suppliers, increasing competition, reducing monopoly profits,

reducing costs and the price of goods and commercial facilitation has caused increasing attention to this new phenomenon. In recent years, ICT services have played a big role in international trade agreements. This is especially reinforced when the technology is implemented globally. In theory, ICT should increase trade because it lowers the cost of information across international borders. This technology has provided new models for buying, selling and providing services to customers and is redefining traditional relationships between buyers and sellers. The rapid growth of the internet by reducing the cost of searching, communication, advertising and the entry of companies into new markets has led to an increase in the exports of countries. Most of the developing countries face limitations to advance in the digital economy. By improving technology and moving towards the development and export of products, the growth of exports in general industries are associated with high technology intensity. Also checking the type of export goods of each community it indicates the extent to which that society achieves economic growth and development. So that's why with the expansion of ICT, countries with superior technology have increased the trade of superior industries they do less business in low-tech industries. It seems countries to enter global markets and international competitiveness and globalization of the economy as well as increasing productivity and economic growth, the amount of trade of high technology industries more than low technology industries increase considering the importance of trade relations for countries and their willingness to attend stronger in the international arena, increasing the power of competition and gaining a larger share of the markets International as well as the role of ICT in improving business relations, should be the relationship of ICT and flows commercial should be studied more carefully. Therefore, due to the importance of information technology and communication in the development of trade in industries based on the level of technology, in this study the impact of technology information and communication on Iran's industrial trade flows with top business partners will be also, investigating whether ICT has a greater effect on bilateral trade with industries high technology compared to low technology industries is one of the central topics of this research.

The role of information and communication technology in the economy

Modern economics was first mentioned in economic literature in the 1990s. The phenomenon of the new economy that With titles such as: knowledge economy, digital economy, electronic economy and virtual economy it is said that the economy relies on the information and communication technology industry according to Pujval. The new economy is the result of the two factors of the globalization of trade and the revolution of information and communication technology. In general, information and communication technology in the economy, both on the supply side and on the side demand is effective. On the demand side, through the utility function on the consumer's economic behavior it affects and on the supply side, it is effective on the producer's behavior. Information and communications technology on the supply side of the economy as an input along with other factors of production (including organization and experience management, sector organization and legislation, economic structure, government policies and so on investment in human capital), improving the production process, concentration of capital, technological advancement And the quality of the workforce. And

then increase the added value at the level of the company sector and country and finally economic growth, productivity and consumer welfare. Increasing the flow of information and knowledge is one of the obvious advantages of using information technology and it is communication. Information and communication technology makes moving cheaper and more efficient according to The cost of information is therefore the use of it, the cost of exchange and the uncertainty of participation economic exchanges have decreased and this will also increase the volume of exchanges and therefore a higher level productivity and productivity have ended, as well as increased competitiveness among countries and all this the cases lead to a more efficient global market. In addition, with the increase in the flow of information technology adoption increases transparency and accountability and access to public service delivery In the last decade, investment in information and communication technology has grown significantly and companies and institutions with increasing use of this technology have the potential to significantly improve productivity and production through facilitating information exchange and more efficient access to existing markets and entry have provided new markets. If the major growth of information and communication technology to most of the benefits of this technology will be limited to the leading industrial economies group of countries and this will increase the ever-increasing gap in productivity and economic growth it ends globally . According to new endogenous growth theories, less developed countries only when they can compete with developed countries that can transfer technologies and ideas new profit and from them along with the increasing levels of investment in the formation of human capital exploit assuming stability of other conditions, a higher growth rate can provide the necessary financial resources to invest in research and development (D&R) and to equip human capital formation slow this flow itself leads to higher rates of growth and income and spiral flow of growth It strengthens investment. Also, most of the studies on the impact of information technology and communication on economic growth in developed countries shows the positive and significant effect of this technology is on productivity and economic growth, although some studies confirm such a positive relationship in developing countries, but proving the quantity and quality of this effect in these countries according to the unbalanced and weak features of their infrastructure, they need to be investigated further is the country . ICT is a product of developed countries and for proper use In less developed countries, it should have the necessary conditions and capacities to apply it as well be provided.

Investigating the effects of information and communication technology on business flows

The revolution of information and communication technology has created huge changes in people's lives international trade is one of the important things that has been transformed by this technology it is so that information technology is considered the engine of movement towards global trade. Globalization and economic integration is not a new phenomenon, but with the expansion of ICT in the world moving towards the global village and integrating as many countries as possible from dream to reality so far, researchers have identified precise and plausible mechanisms that in this way, ICT can affect global trade flows. The first mechanism it indicates that the use of ICT has reduced the fixed costs of entering business markets and

after that, it boosts the exports of the communities. Such costs include costs and amounts related to receiving necessary information and data about market functions spreading ads and advertisements and finally establishing and expanding distribution networks. Mechanism The second one states that global trade deals and contracts are often based on a series of designs advanced planning needs, which itself will result in an uncertain and unstable state. Some of these instabilities are the result of delays in the process of requesting and transferring relevant information it is possible to minimize such delays with the use of ICT in this regard also designed more successful and efficient programs. In this case, the amount is expected trade and exchange of goods between different countries will increase. The third mechanism is also based on this is that ICT can play an important and immediate role in facilitating global trade in services, especially provide information services. This group of services, processes and processes such as they include the setup, processing and transmission of data. It should be noted at the same time reducing the costs of carrying out the above processes by expanding ICT information services as well they can be easily manufactured and delivered worldwide. Also this technology the possibility of dispersion and development of the production process or establishment of information services in all provide points and thus the level of trade in them the internet has significantly centralized global supply and demand and the markets increases. are not separated from each other and exporting countries from access to new markets and they benefit from reducing the entry fee. Importing countries also benefit from this situation because the price is reduced and welfare is also increased due to the reduction in the volume of Information. increase competition over decrease global prices and their convergence are effective. The prices should be the same because it's over countries buy from the world market. In addition, reducing the cost of entry makes the competition more intense and therefore the prices should decrease. In this situation, companies with commercial connections established firms may suffer because these types of firms no longer have monopoly power this means that companies that exported to many countries in the past may suffer because now they have to export at lower prices. Unlike the countries that previously, they imported only from limited countries due to the increase in consumer surplus. They benefit because the new prices are relatively lower. Therefore, the emergence of the internet has potential effects in creating large global markets for it has tradable products. This is also directly through the increase of exchanges organized between buyers and sellers both indirectly and through machines powerful search, which enables sellers to instantly inform buyers of prices give, it becomes possible. This innovation with other innovations that only makes it easier to do two way business is very different, like telephone and fax. The advantage of this marketglobal means to reduce entry fees and significantly increase information about buyers and sellers. This has an important impact on the size and pattern of trade flows between it has countries. As one of the basic and valuable solutions of the phenomenon internet and Internet networks in general it is considered universalism. Internet technology can provide more and more complete information economic-commercial as well as reducing the communication costs of the buyer link make the seller less expensive and at the same time more feasible. According to the statistics of the World Bank with the increase in the use of the Internet, the amount of global exchanges has also increased. So the internet. It can be considered as one of the important factors in the development of global exports.

Trade of industries with high and low technology (Tech-Low, Tech-Hi)

According to Larsen and Salter the impact of ICT on the share of exports is positive and significant only in high-tech sectors. While it is not significant in medium and low technology industries. Products with superior technology are needed to advanced technology and rapid changeability, high R&D spending, and heavy emphasis on design has a product this category of products has sufficient technological infrastructure and a lot of manpower expert and strong connection between companies on the one hand and research centers and universities on the other hand, it needs this group has the largest and fastest growth in global exports and because of the general relationship with other industrial activities and services, spillovers of knowledge and skills and also the ability to attract foreign direct investment has beneficial development effects. In general, the characteristics of high technologies and industries based on them are:

- 1) High share Technical knowledge
- 2) Increasing influence in industries and services
- 3) Wide influence in daily life
- 4) High innovation rate
- 5) Low life cycle
- 6) A lot of added value

Conclusion

By examining the effects of ICT on the volume of trade bilaterally between Iran and its top trading partners, it can be concluded that the use of ICT has pushed the economy towards an international orientation and thus expanded the markets findings and existing obstacles in the path of international free trade are minimized. Therefore with the expansion of markets, production and use of economies of scale increased and the field of optimal use of resources and reduction of production costs is provided. The expansion of technology by increasing the consumer's power of choice increases the usefulness and well-being provides ICT has increased the amount of total bilateral trade and with removal of time and place restrictions, the possibility of communication between exporters and importers Provides the shortest possible time. Therefore, it can be said that technology is in addition to elimination market limitations, by reducing marketing and distribution costs, from the effect of distance on flows reduces business and increases business. As seen in the division of the desired technologies for production and export Industries (high and low technology) industries with superior technology have a special place in these countries because it creates high added value and has an effect on other economic sectors it increases their productivity and prosperity. So in general, it can be said that ICT has more influence on the trade of industries with high technology than the trade

of industries with low tech is effective. Therefore, it is suggested that policy makers and project implementers in industries with high technology, more focus and investment and with the development and application of ICT double the trade of these industries although the use of ICT in various sectors including the government sector, business International and domestic exchanges end with fundamental developments in the country's economy, but they should not forgot that it is necessary to deal with the infrastructure. Therefore, it is recommended to training, applying modern techniques in an integrated way and not in a partial or cross-sectional manner be paid. Today, the best way to increase trade, improve the economy and increase the prosperity of countries accelerating the path of developments and updating technologies by increasing the penetration rate of the phone landline, satellite phone, mobile phone and mail up to international standards and joining the jirga the economy is global. Societies like Iranian society with a new attitude are required to make fundamental changes in various fields, especially economy, trade, and infrastructures are based on ICT in order to join the rapid flow of the global economy and the transformation of ICT to obtain maximum benefits may be achieved.

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