
ELECTRIFYING ECONOMIC GROWTH: A ROBUST EXAMINATION OF E-COMMERCE TRENDS IN THE REPUBLIC OF NORTH MACEDONIA

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Abstract: Every century brings its advancements, making it challenging to pinpoint a specific period as the most transformative. Historically, the 19th century introduced significant changes in power sources, transportation, mass production, and materials. The 20th century, on the other hand, was marked by developments such as solar cells, nuclear reactors, aircraft, and advancements in communication, including radio, television, and the internet. The evolution of the Internet has fundamentally transformed the global landscape, bringing significant and revolutionary changes. Undoubtedly, the growth of the Internet has greatly influenced the economy, paving the way for the digital transformation we experience today. Its extensive use has given rise to a model known as electronic commerce, which initially did not have a strong recognition of its value. Nowadays, electronic commerce is a vital resource for global growth, signaling a transformation in modern business practices and influencing the future trajectory of commerce. Moreover, this innovative tool has impacted businesses and served as a catalyst for human progress across various aspects of life. It has created opportunities for a competitive market, allowing consumers worldwide to operate as sellers without geographical constraints. To what extent have technological advancements been utilized in the Republic of North Macedonia? Was there a specific period that can be marked by significant growth, and what were the contributing factors? This research aims to address these two questions. To analyze the usage of technological advancements, both the internet and electronic commerce, we will conduct a comparative analysis of the growth of internet usage and electronic commerce over the past five years in the Republic of North Macedonia. The analysis will be conducted by utilizing data from secondary sources obtained from the State Statistical Office of the Republic of North Macedonia.

Keywords: electronic commerce, Internet, growth

1. INTRODUCTION

The origins of electronic commerce can be traced back to the 1960s with the introduction of Electronic Funds Transfer (EFT) and Electronic Data Interchange (EDI) systems. These technologies were primarily utilized by businesses for electronically transmitting money (EFT) and exchanging data such as purchase orders and invoices (EDI). By the 1980s, awareness of computer technology began to surge, although most of the public did not fully comprehend the far-reaching implications of these rapid advancements. The invention of the Internet and the World Wide Web in 1991 marked a crucial turning point. Tim Berners-Lee introduced the World Wide Web, an Internet that was not simply a way to send files from one place to another but was itself a “web” of linked information that anyone on the Internet could retrieve (Onion, 2024). By the mid-1990s, market platforms such as Amazon and eBay emerged, triggering a surge in e-commerce, often called the Golden Age of e-commerce in the 20th century. According to Coppel (2000, p. 3) in 1991, the Internet had less than 3 million users around the world, and its application to e-commerce was non-existent. By 1999, an estimated 250 million users accessed the Internet and approximately one quarter of them made purchases online from electronic commerce sites, worth approximately \$110 billion.

It is clear that electronic commerce has significantly transformed business activities. Historically, transactions relied on physical meetings and agreements between buyers and sellers at specific locations. However, today, with the advances in internet technology, these exchanges can occur electronically without the need for face-to-face interactions. In order to further analyze this topic, it is crucial to give general knowledge of the definitions and models of electronic commerce.

Electronic commerce has been a topic of extensive research over the past 30 years, leading numerous authors and institutions to establish various definitions. Despite the differences in wording, a common element across all definitions is the concept of selling goods and services over the Internet. According to OECD (2009, p. 94), electronic commerce is defined as “the sale or purchase of goods or services, whether between businesses, households, individuals, governments, and other public or private organizations, conducted over the Internet.” Furthermore, Turban et al., (2002, p. 4) describe electronic commerce as “an emerging concept that encompasses the buying, selling, or exchanging of products, services, and information via computer networks, including the Internet.” Electronic commerce models are widely recognized globally. Therefore, a consistent terminology is being employed regardless of the evolution that they experience alongside the technological advancements. Core electronic models are:

- Business-to-Business E-commerce (B2B);
- Business-to-consumer E-commerce (B2C);
- Consumer-to-Consumer E-commerce (C2C);
- Mobile E-commerce (M-commerce);
- Consumer-to-business E-commerce (C2B);
- Business-to-administration (B2A);
- Consumer-to-administration (C2A) E-commerce;

In the past two decades, electronic commerce has emerged as a powerful tool for expanding business horizons, free from geographical constraints, and allowing access to the advantages of the global economy. Additionally, it has brought significant changes for consumers, who can now purchase goods and services at competitive prices and enjoy enhanced quality. However, despite these positive developments, concerns regarding the security of online payments continue to persist. Security is a fundamental consideration that significantly influences the willingness of customers and organizations to participate in e-commerce. It necessitates the implementation of robust security measures alongside a dependable infrastructure and framework, which together have a considerable impact on the user experience throughout daily transactions. These elements are essential for fostering a conducive business environment, which promotes trust and encourages engagement in electronic commerce activities Khan (2019).

In March 2020, the World Health Organization declared the coronavirus (COVID-19) outbreak as a global pandemic. Certainly, this was a challenging period for humanity and the global economy. It affected how businesses operated and significantly impacted the daily lives of individuals. From the perspective of electronic commerce, it brought about positive changes by compelling businesses to adopt advanced technologies to survive in these unpredictable times. According to OECD (2020, p 2), “The COVID-19 crisis accelerated an expansion of e-commerce towards new firms, customers and types of products. It has provided customers with access to a significant variety of products from the convenience and safety of their homes and has enabled firms to continue operation in spite of contact restrictions and other confinement measures“. The pandemic has positioned electronic commerce as a key influence in the sluggish growth of the global economy throughout 2020. Without the substantial contributions of major companies in gaming and consumer goods e-commerce, the global economy would have likely faced an even more profound decline Ding (2023). Overall, it caused significant damage to the global economy, prompting many countries to close their stock markets, shut down corporate offices, suspend the operations of small businesses, and cancel major social events. At the same time, it is widely believed that the pandemic has altered consumer behavior worldwide, affecting both local and international economies Ali (2020). Today, four years post-pandemic, future trends in electronic commerce are looking positive. Worldwide retail e-commerce sales are expected to reach \$8.092 trillion by 2028 (Cramer-Flood, 2024).

In light of this context, examining the current landscape of electronic commerce in the Republic of North Macedonia is essential, focusing on data spanning from 2020 to 2024.

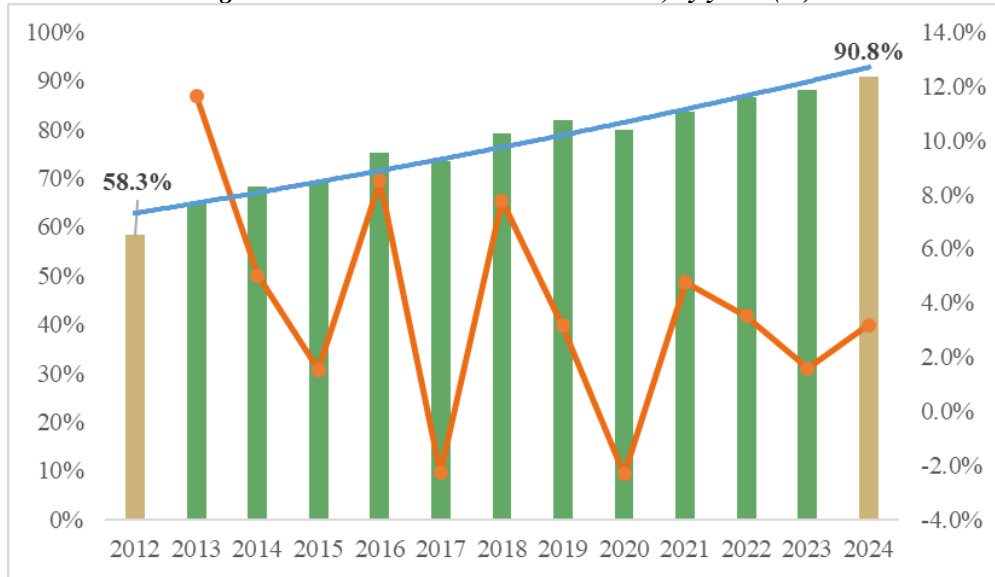
2. METHODOLOGY AND DISCUSSION

The primary goal of this research is to assess the growth in the past five years and to present the current state of electronic commerce in the Republic of North Macedonia by identifying the key drivers for the same. This analysis will rely on secondary data sources obtained from the State Statistical Office, a public institution. The State Statistical Office collects data from households and enterprises through structured questionnaires, adhering to its established methodology, during the first quarter of each year, with responses reflecting the previous three months of that quarter. The most recent results for 2024 were published on October 10, 2024, providing data applicable to that year.

3. INTERNET USAGE IN HOUSEHOLDS AND THEIR PREFERRED ACTIVITIES

Access to broadband or high-speed internet is essential for the growth of electronic commerce, as it enables businesses to connect with customers globally, reduces costs, and allows buyers to select the best prices and quality products. For over 15 years, various state statistical offices worldwide have been analyzing this.

Figure 1: Households with Internet access, by years (%)

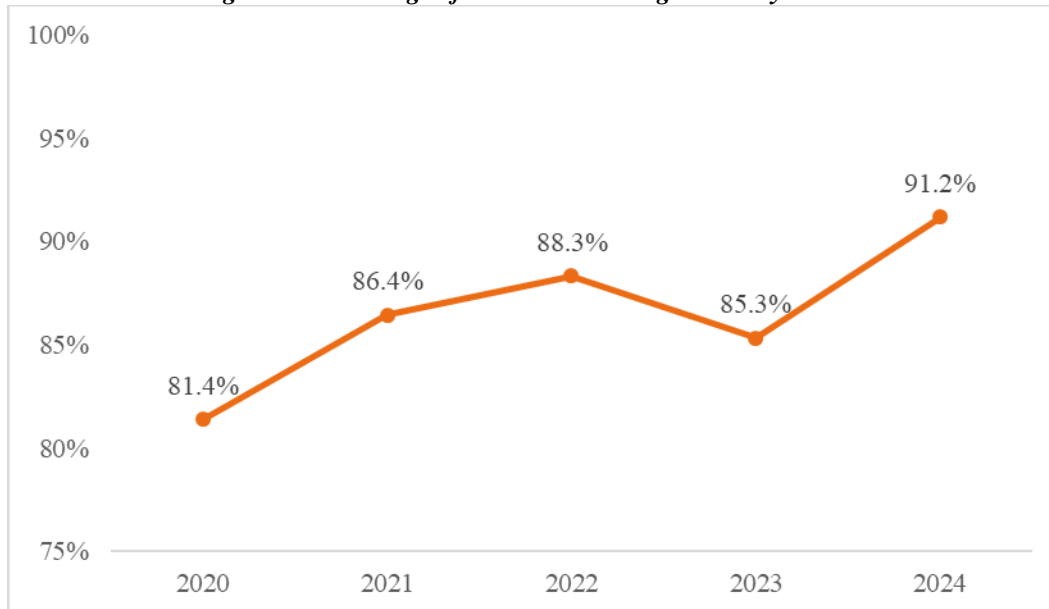


Source: State Statistics Office - Republic of North Macedonia

The data presented in Figure 1 illustrates a consistent rise in household internet usage over the past 12 years, from 2012 to 2024. In 2012, the percentage of households with internet access in the Republic of North Macedonia was 58.3%. By 2024, this figure had increased to 90.8%, demonstrating a remarkable growth in internet adoption of 55.7%. This upward trend can be attributed to network and communication infrastructure improvements and enhanced educational opportunities for the population.

Additionally, the internet access of household users was analyzed based on a sample of the population aged 15 to 74 years.

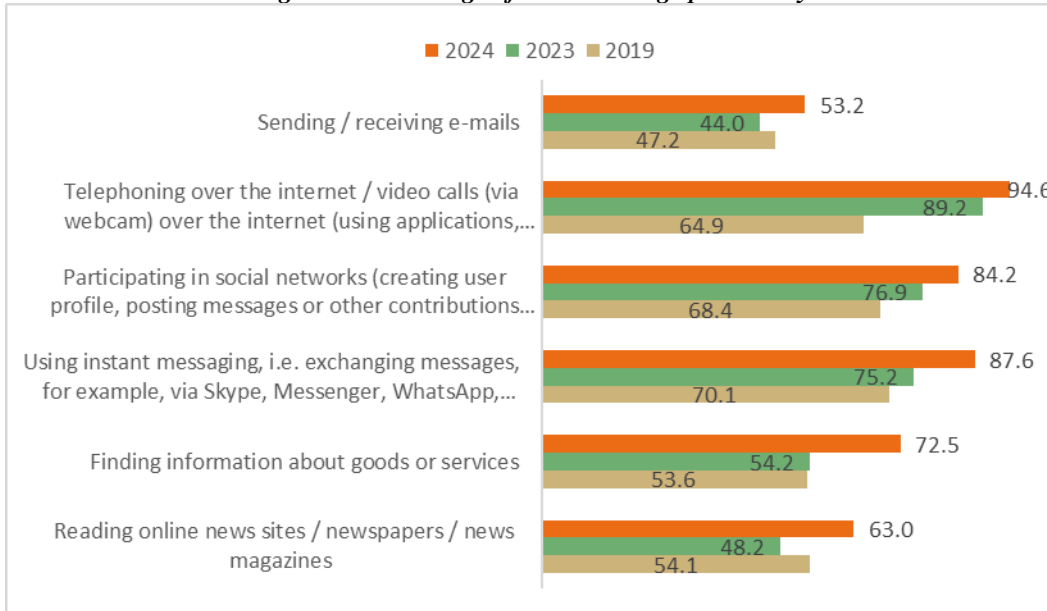
Figure 2: Percentage of Internet users - aged 15-74 years old



Source: State Statistics Office - Republic of North Macedonia

Figure 2 illustrates a rise in internet usage, increasing from 81.4% in 2020 to 91.2% by 2024. Additionally, another data set was incorporated to provide a comprehensive view of internet usage. The focus of the next graph (Figure 3) will be on internet usage, categorized by different types of activities.

Figure 3: Percentage of Internet usage per activity



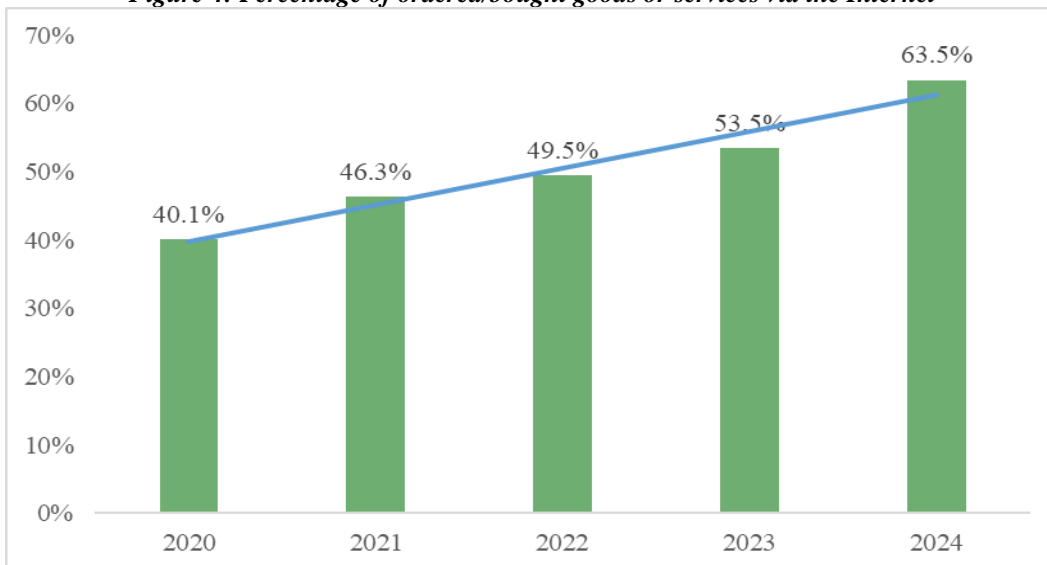
Source: State Statistics Office - Republic of North Macedonia

In 2024, the largest share of internet usage is attributed to "telephoning over the internet and video calls using applications like Skype or FaceTime," reaching 94.6%. This category also held the highest percentage in 2023; for comparison, it was 64.9% in 2019, indicating a substantial increase of 46%. Conversely, the leading activity in 2019 was "instant messaging via Skype, Messenger, WhatsApp, and Viber." This shift underscores a significant change in people's communication preferences from 2019 to 2024.

4. ELECTRONIC COMMERCE IN THE HOUSEHOLDS

The following section of the analysis will present a more detailed examination of electronic commerce usage. Figure 4 illustrates the percentage of individuals who ordered goods and services online from 2020 to 2024. In 2024, 63.5% of people engaged in electronic commerce, a significant increase from 40.1% in 2020. This data reflects a remarkable growth of 58.4% over the five-year period from 2020 to 2024.

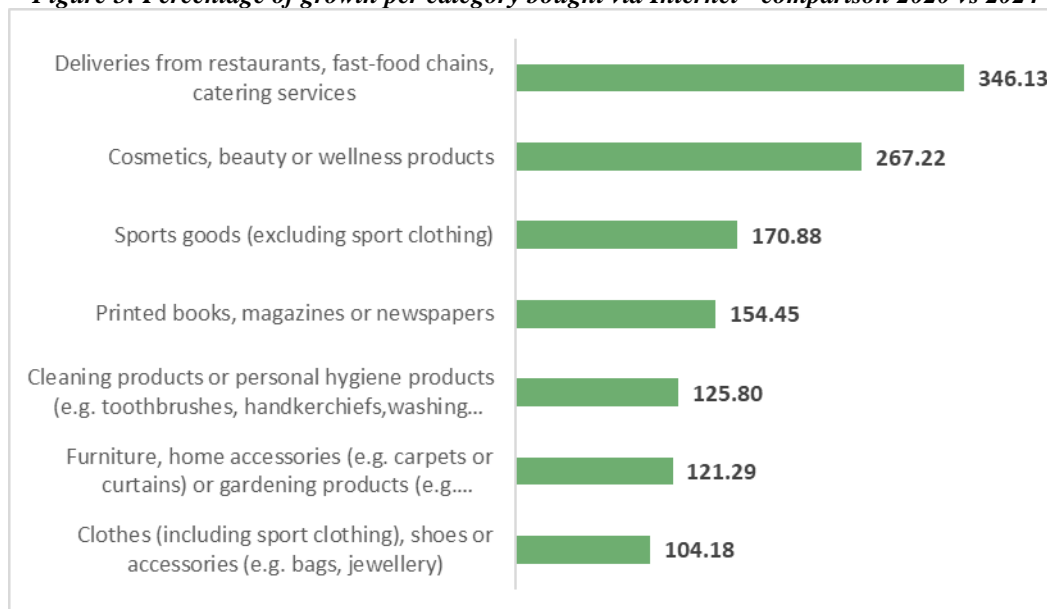
Figure 4: Percentage of ordered/bought goods or services via the Internet



Source: State Statistics Office - Republic of North Macedonia

Despite a general slowdown or minimal growth in global electronic commerce following the pandemic, the Republic of North Macedonia presents a different scenario. The increase in electronic commerce activity shown in Figure 4 requires a closer examination of the specific goods and services that consumers have been purchasing online.

Figure 5: Percentage of growth per category bought via Internet - comparison 2020 vs 2024



Source: State Statistics Office - Republic of North Macedonia

For comparative purposes, Figure 5 illustrates the growth percentage across seven categories, comparing data from 2020 and 2024. The category "deliveries from restaurants, fast-food chains, and catering services" shows a remarkable increase of 346.1%. This surge can be attributed to the rise of new businesses that offer online ordering and delivery services directly to customers, emphasizing convenience and enhancing productivity in today's fast-paced environment. The second-largest increase is seen in the "cosmetics, beauty, or wellness products" category, which experienced a growth of 267.2%. This growth is largely due to the emergence of several virtual portals- some operating without physical storefronts, offering customers access to new and unique brands in this sector.

5. CONCLUSION

In the past two decades, electronic commerce has established itself as a significant player in the global market, serving as a new tool for business development. This business model has numerous advantages, with a key distinction being the availability of online businesses (compared to brick-and-mortar), which can operate 24/7 and are not constrained by geographical limitations.

Recent analyses indicate that while electronic commerce in the Republic of North Macedonia may lag behind developed countries in terms of growth and development, there has been a consistent upward trend over the past five years. Based on the analysis conducted, three main factors have been identified as primary contributors to this growth during the observed period. The first factor is the increased awareness and market pressure that have compelled many brick-and-mortar businesses to adopt advanced technologies and establish virtual shops as an additional pathway to expand their existing customer base and maintain or/and increase profits. The second factor is the COVID-19 pandemic, which accelerated the growth of new online businesses and prompted existing physical stores to launch virtual shops. This shift was driven by the limitations on movement imposed by local and worldwide authorities to curb the spread of the coronavirus, leading many residents to engage more extensively in electronic commerce.

While there is a positive trend in electronic commerce within the country, the percentage remains considerably low compared to developed European nations. To enhance this situation, a combination of measures must be implemented. On one side, educating consumers about safe payment transactions when shopping at online stores is necessary. On the other hand, businesses should be educated about the potential of electronic commerce and how to implement advanced technologies more effectively. Additionally, the administrative processes for registering online businesses need improvements, aiming to create a robust system that is more time-efficient and practical. Another

significant barrier is the logistics connectivity within the country, despite some progress being made in this area. Moreover, local businesses face challenges in selling outside the country, which is closely tied to the customs processes that require national institutions to work on simplifying these procedures and conditions. This research could serve as a foundation for a more in-depth analysis of the electronic commerce market in the Republic of North Macedonia, particularly examining the gaps in logistics services through primary data collection.

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