



Comprehending the Globalization and Performance of e-commerce Businesses: Evidence from Amazon, Alibaba, JD.com, and Suning.com

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ABSTRACT: The overwhelming performance and gradual acceptance of electronic commerce (e-commerce) in the contemporary world are akin to countries' development. The internationalization and revenue performance of Amazon, JD.com, Alibaba, and Suning.com in 2020 amongst the top 10 e-commerce industries globally with the highest revenue is worth investigating to determine their enormous contribution and performance. This study adopts the case study methodology to investigate the selected companies, including Amazon, JD.com, Alibaba, and Suning.com, based on their increased revenue amid the COVID-19 pandemic and the enormous acceptance of their offline to online e-commerce marketing in the 21st Century. Findings of the study indicated that trading had been chiefly geared towards digital channels. Results suggest that e-commerce will continue to rise, reaching 22% in 2023, and by 2040, e-commerce growth will account for more than 95% of all transactions. This study has the challenge of focusing on only the top four global e-commerce companies within 2020 with the most extensive revenue base during the COVID-19 intense period. This study contributes to the existing knowledge on the positive impact of e-commerce adoption and firm performance in challenging periods. This study is the pioneer in investigating the top four global e-commerce companies with the highest performance and revenue by adopting the technology acceptance model (TAM) as the primary conceptual grounds. The TAM model projects that the degree of globalization will directly influence the performance of e-commerce businesses, and technology will continue to expand globally. This study proposes that governments and organizations foster e-commerce technologies in autonomous delivery, telemedicine, education, and live streaming.

Keywords: e-commerce; platform business; revenue, technology acceptance model; performance.

I. INTRODUCTION

In recent years, e-commerce has become an essential part of the global retail landscape. Any transaction of services and goods undertaken through the internet is referred to as e-commerce. E-commerce is comparatively a modern way of conducting business that increases in acceptance season after season [1]. Since the internet's inception, the retailing industry has developed exponentially. Consumers worldwide profit from the conveniences of online purchasing, especially from the acceleration of contemporary digital civilization [2]. The e-commerce industries are very influential in exerting powerful influences on suppliers and partners, other companies, and even society as a whole and not just by their huge quarterly revenues. E-commerce is transforming many facets of enterprises and social life. Companies that want to maintain a competitive advantage must adapt their strategies to dynamic changes. As internet adoption and access develop quickly globally, the quantity of digital buyers increases annually [3].

By 2020, more than two billion people may have made an online purchase, with international e-commerce earnings exceeding 4.2 trillion dollars [4]. The world's population was predicted to reach 7.83 billion people at

the beginning of 2021. According to predictions of the United Nations, the recent rate of population expansion of 1% per year denotes that the global population has grown by more than 80 million people. About 5.22 billion individuals use mobile phones worldwide for transactions, accounting for 66.6% of the worldwide population. In January 2020, individual phone users climbed by 1.8% (93 million), while smartphone subscriptions surged by 72 million (0.9%) to a maximum of 8.02 billion at the commencement of 2021 [5]. In January 2021, 4.66 billion individuals worldwide used the internet, up 316 million (7.3%) from the previous season, bringing the international internet connection to 59.5%. Globally, many individuals utilizing social media have skyrocketed to 4.20 billion. Presently, social media users account for more than 53% of the world's population [5]. These facts are giving credence to the enormous acceptance of e-commerce transactions internationally.

E-commerce companies in the 21st Century are creating fully automated facilities and employing drones to expedite customers' satisfaction. E-commerce enterprises including Alibaba, Amazon, JD.com, and Suning used drones in similar logistics networks to execute faster delivery to cities and remote areas. Most

e-commerce companies solely open to local companies and indigenes now engage in cross-border sales programs that allow foreign companies and individuals to access their products [6]. The cross-border sales have led to an enormous increase in their revenues. The revenue of the top 10 e-commerce companies in 2020, thriving in every corner of the globe, demonstrates this extraordinary performance and internationalization of e-commerce. E-commerce companies' size may be measured based on their revenue, the number of customers, and the worth or market capitalization [7]. This study focused on the revenues obtained globally by the top 10 e-commerce companies in 2020 to determine their worth. Revenue is the total sum of money earned from selling goods and services related to the company's primary operations. The gross merchandise value (GMV) of the e-commerce industry is extensively described as the aggregate of all things sold on a marketplace.

With nations' enormous growth in the business-to-consumer e-procurement market, it is more important than ever to understand what motivates people to spend online [8]. This development will allow platform owners to consistently change their electronic marketing approach to changing customer needs and preferences. In order to secure platform growth and revenue improvement, e-commerce increases customers' internet shopping experiences and contentment. Recently, clients and the rest of the world have come to accept technological changes, resulting in a widespread acceptance of e-commerce businesses and initiatives. The e-commerce industry and internet use for purchasing items and services exploded [9]. Personality traits could be considered when defining clients' internet shopping intentions worldwide to comprehend better the aspects that have a substantial impact on technological process acceptability [10]. In the twenty-first century, there is a strong need to understand better clients' use of the internet as a purchase and payment avenue and improve an electronic platform retailer's market audience and departmentalization efficacy. In the 21 century, most e-commerce industries like Alibaba operate on a multi-sided business model, with two interdependent client segments: buyers and sellers, required to transact. Consumers and businesses in various settings make up these categories. Business to Business (B2B) traders in e-commerce industries provide merchants with a platform to sell their items to other traders and interact with their customers through the platform. Business to Consumer (B2C) e-commerce platform, like any other e-commerce website, also allows merchants to sell their products and services to customers while simultaneously engaging with them. Consumer to Consumer (C2C) e-commerce activities are similar amongst e-commerce industries like eBay, Amazon, Alibaba, Sunning, and JD.com. It allows organizations to market and sell their products to other consumers.

A platform is a real worth business strategy that permits several interconnected entities, typically customers and producers, to convey information [11]. Platforms take advantage of and build huge, ascendable networks of clients and products that may be accessed upon request to facilitate these transactions. In today's e-

commerce business sector, platform technologies assist in achieving certain aims and scientific inquiries. Technology is defined as the knowledge of processes, rules, and other elements integrated into devices to aid the e-commerce industry.

Enterprises influence vendors to enter an uninhabited network to launch electronic services in multipurpose marketplaces to meet e-commerce ambitions. The "chicken-and-egg conundrum" explains the situation in which clients join the social network: "Nobody participates in advance until everyone joins" [12]. [13] stated that platform owners and managers should use effective investment methods to attract clients and persuade prospective suppliers to join their company operations. In current conceptions, the decision of producers of goods and services to adopt a platform is primarily based on their perceptions of the level of activity shown in the marketplaces [14]. Platform marketplace research is largely anxious about devising ways to verify that the demands of potential participants are addressed [15].

This study investigates the uprising in revenue and the internationalization of the top four e-commerce businesses in 2020 amongst the top 10 e-commerce industries in the world within the year 2020. Extant studies on e-commerce indicate that as marketplaces become more global, it becomes evident how important it is to understand the various adoption and implementation behaviours prompted by varied national and cultural backgrounds [1, 9, 15]. However, most research has focused on accepting and disseminating e-commerce inside Western economies, comprising Canada, Australia, New Zealand, the US, Europe, and the UK, with single-country studies rather than cross-national, comparative studies [1]. This study aims to fill the gap in these previous e-commerce studies that focused on a particular country by studying companies operating in different countries. Thus, the explosive expansion in revenue of Amazon, JD.com, Alibaba Group, and Suning.com amidst the COVID-19 crisis in the contemporary periods is worth studying as 2020 was a challenging year for many [17, 18]. It is crucial to comprehend what impacts international clients to accept and patronize online frequently. Again, the core issues addressed in this study are the factors influencing e-commerce revenue enhancement, techniques for accomplishing platform company goals through product importation and exportation, and the future of e-commerce businesses of these four e-commerce companies under study.

II. LITERARY WORKS

A. *Internationalization of E-commerce*

Because of the increasing attractiveness and accessibility of online buying, there has been much research on the elements that influence clients' online purchasing decisions [19, 20]. According to [21], online customer commitment, online purchasing satisfaction, and electronic payment loyalty have focused on contemporary e-commerce studies. Synthesized studies from 1994 to 2002 provide an insightful and comprehensive examination of online customer behavioural theories and observational discoveries [22]. The fundamental conceptual underpinnings in the

surveyed literature were identified as the Technology Acceptance Model (TAM), Theory of Planned Behaviour (TPB), and Theory of Reasoned Action (TRA), which has been emphasized by [23]. Five basic types of factors are thought to influence consumer online behaviour: risk perception, consumer demographics, motivation, trust, and attitude are all factors to consider. [22, 24] adopted meta-analyses to delve deeper into the elements influencing customers' shopping decisions or use of e-commerce. According to [25, 26], China has a greater number of internet subscribers hovering 420 million in 2010, which has increased the country's standards as the most populated economy with network connectivity. As their earnings rise, they proceed to lavishly patronize the service, generating significant value for customers, platforms, and producers. Jack Ma founded the Alibaba Group in 2003, which established Taobao and joined the customer-to-customer (C2C) industry. Amazon operates in a system of connectivity that creates value through producers, platforms, and consumers. In 2004, JingDong (JD) joined the contest, followed by Suning.com. [27, 29] posited that the efforts of platforms, producers, and consumers, connectivity helps to accomplish an expected desire. Customers, platforms, and producers all work together to create value, as seen in Fig. 1.

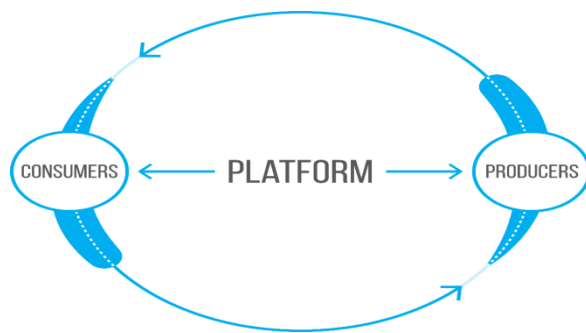


Fig. 1. The association of platform, producers, and consumers. Source [30].

Platform businesses establish trading outlets for numerous organizations and customers due to the fast expansion of internet users. [31, 35] identified the merits of platform business to the "brick and mortar" enterprises, who have begun to attach particular technology to their connectivity, indicating that companies adopting platforms are reaching the stage of sustainable development. Studies on the innovation of e-commerce manage to find out the value network between producers and customers to be promoted and developed upon [36]. According to standard competitive strategy, producers' and clients' decisions may be based on their readiness to accept online payment for a service or product [37]. [38, 39] posited that in the growth of business value, not every platform is represented equally, with some having a higher risk of increased returns, perhaps driving similar businesses out of marketplaces.

The influence of electronic marketing on the economies, including the United States and China, is broadening to supply network management interconnections, electronic payment, and other specialized servicing [40, 42]. E-commerce is still growing quicker in China than in

other countries. Between 2016 and 2020, the percentage of online retail sales in total retail sales is projected to increase or even double, from roughly 20% to 44% [43]. The current rise of e-commerce elevates countries into the global standards, as in the case of China, which corresponded with the Beijing Olympics in 2008 [44, 45]. Because of substantially enhanced convenience, security, and user-friendliness, e-commerce enterprises in the US and China within 2013 were the globe's biggest internet purchasing industry. After the United States, China is fast becoming a global leader in the platform industry. China's e-commerce transactions globally are recently recorded to reach 40%, compared to a decade ago 1%. Among other local Chinese technologists' champions, Alibaba Group, Tencent, Suning, and JindDong (J.D) control an increasingly developing e-commerce environment, primarily within China [46, 47]. E-commerce's quick growth has resulted in massive local and worldwide penetration through international trade, leading to a large and growing digital consumer base [48, 49]. The United States, the United Kingdom, and China are proving fields for technologies that will influence the future of the international e-commerce industry because of their unique climates, rapid commerce, and digital business advancements [43]. People travel more than ever to work, learn, and do business, introducing them to various cross-border goods and brands. When those buyers return to their home country, they frequently use transboundary e-commerce to purchase global products that are not locally available or are expensive in domestic, international retail outlets.

B. Platform Strategy

The studies of [50, 53] demonstrate that numerous studies have been conducted on formulating a platform business model and the platform strategies. The strategies adopted by the platform are a critical corporate innovation strategy for several industries. As a result, various definitions have been credited. Among the older concepts generally recognized within platform business defined by [54], platforms are a "collection" of subsystems and interconnection of computer devices. The strategies of platforms are an ultra-modern and effective business ultimate goal for transferring creative and electronic marketplace transactions across several firms. A platform strategy creates a competitive advantage by interconnecting many associated clients in numerous marketplaces, likely to grow over time [12]. Platform innovation and design are acknowledged as the finest technique for creating long-term revenue and business transformation, particularly in the information technology and mobile sectors [55]. The techniques adopted by platform supply have garnered higher returns to firms including Amazon, Alibaba, JingDong, Google, Suning, Apple, and Microsoft, who are rising to become the wealthiest and most efficient technological businesses globally. These businesses are conscious of their platform's processes and the avenues to trend so that it reaches the public. Regardless of the size of the company, platform inventors establish a website for businesses and provide series of contents and services for transactions via digital equipment to ease trading [56]. Further, the investigations of [57, 58] indicated that the expansion of digital technology had provided new

techniques for enterprises and consumers to acquire large amounts of information and services in modernizing the practice of trading products and online services.

It is perceived that the enterprises' advancements and creativity are motivated via an enhanced income. The potential of e-commerce to boost revenue is categorized into two folds: initially, it increases the number of

customers and the amount of procurement they make, and to add, it decreases expenses via integrating electronic purchases [59, 60]. Reducing costs may comprise transportation, storage, material savings, and personal spending [61]. E-commerce strategies that may enhance companies' goal attainment are indicated in Table 1.

Table 1: E-commerce adoption and strategy to enhance company success.

Efficiency/Cost strategy factors	Competitiveness strategy factors
Enhanced procedures for efficient ordering/dispatching of products	Consumer request
Improved delivery of facts exchanges with producers	Enhancing the standard and variation of services and products
Reducing the cost of operations	Avenues to curtail market share losses
Reducing purchasing and sales costs	Rewarding loyal customers

Cost/efficiency factors and competitiveness strategy factors are the two main e-commerce acceptance factors [61]. Findings demonstrate that competitiveness and cost efficiency is vital for e-commerce enterprises' adoption and revenue enhancement. Moreover, the research reveals discrepancies between accepters and non-accepters. Nevertheless, early accepters classify none of the gains as a downgrade [62].

C. Theoretical Framework:

Theory of Technological Acceptance Model. This paper adopts the primary conceptual grounds of the technology acceptance model (TAM). The TAM is a system of information theory that shows the approach customers embrace and utilize technology. The concept posits that when consumers are introduced to current innovation, various contributing factors determine their usage modalities [63]. TAM further explains how people decide to either accept or employ recent technology. [10] constructed the TAM with an emphasis on the concept of Theory of Reasoned Action (TRA) to determine what circumstances cause individuals to adopt or reject information technology (Figure 2). [10]

suggested that the two most crucial perceptions of using information technology are the usefulness and perceived ease of use. The perceived usefulness is the standard individuals' trust that adopting a certain system would improve their occupational accomplishment. The perceived usefulness is normally associated with TRA. The perceived ease of use is the standard an entity trusts that adopting a specific system will be devoid of pressure or maximum energetic effort. These two behavioural beliefs influence individual behaviour intention and actual behaviour, thus the ease of use and intended usefulness. The strongest indicator of a person's willingness to adopt information technology is their usefulness [10, 63, 64].

Figure 2 shows the technology acceptance model from the concept of [10], which describes the ease of use and the intended usefulness of the technology in connection with the attitude of usage, a motive to use, and the state of real usage. The adopted model supports the selected e-commerce companies used as case studies to accept technology in daily business transactions.

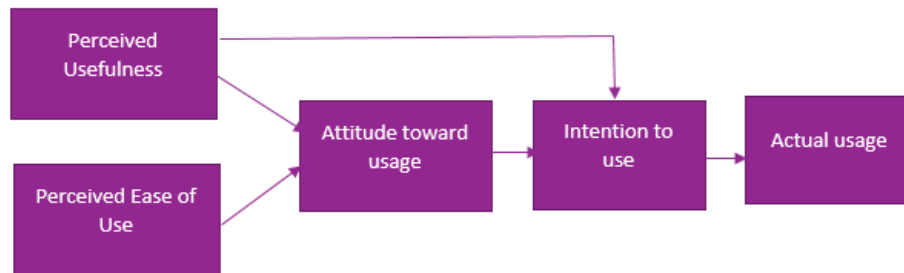


Fig. 2. The Technological Acceptance Model (TAM) [10].

D. Technological acceptance based on population statistics in the USA

The United States is perhaps the most mature economy for online shopping, and it sets the global e-commerce standard. Like Amazon, several of its most successful e-commerce enterprises are based in other countries, setting the pace and establishing the trends that affect online shopping worldwide. Because of its 298 million internet users, affluent populace, and extensive use of online purchasing, the United States dominates the internet and e-commerce. Internet users in the USA are

accustomed to using computers and mobile devices to perform commercial transactions to obtain various services and goods. The American marketplace is so developed and accessible. It is not surprising that e-commerce players compete fiercely. Major platforms that operate across many segments, such as Amazon and eBay, dominate, but conventional brick-and-mortar retailers also gain ground [65]. Table 2 indicates the key digital numbers in USA technological acceptance based on its active social media users', population, internet users, and mobile phone connections statistics.

Table 2: Key digital numbers in USA technological acceptance in 2020.

Variables	Numbers in Million (M)	Percentage Increase 2020
Population	332.0 M	+0.6%
Mobile phone connections	353.8 M	+1.5%
Internet Users	298.8 M	+3.7%
Active Social media users	240.0 M	+4.3%

Source: [65, 66]

E. Technological acceptance based on population statistics in China

China is the second-biggest e-commerce marketplace globally, with the world's largest population and a reasonably tech-savvy populace. China has created a plethora of local enterprises striving for domestic market share while also seeking global development as a highly protected market. Since individuals have become accustomed to buying practically anything and paying for it online using their phones and computers, China's internet connection and e-commerce environment, which currently has millions of active clients, is highly sophisticated and modernized. With over 850 million

subscribers, China's internet marketplace is considered the largest globally. China is well on its way to becoming a high-income economy, with income levels in the largest cities nearing those of the most advanced economies. Furthermore, the country's technological ambition pulls the e-commerce industry forward, positioning it as a frontrunner in several areas, including mobile marketing and payments [67]. Table 3 indicates the key digital numbers in China's technological acceptance based on its active social media users', population, internet users, and mobile phone connections statistics.

Table 3: Key digital numbers in China technological acceptance in 2020.

Variables	Numbers in Billion (B) / Million (M)	Percentage Increase in 2020
Population	1.44 B	+0.4%
Mobile phone connections	1.61 B	+4.3%
Internet Users	854.5 M	+3.1%
Active social media users	1.04 B	+1.5%

Source: [67]

III. METHODOLOGY

This section of the study describes the methods and procedures in collecting data and analysis. Theories and case studies are essential to a scientific inquiry because they allow the validity of a study to be assessed. This paper is premised on a case study and conceptual grounds in the theory of the technology acceptance model. Systematic research that churns new ideas must be conducted logically and organized [68, 69]. Also, this study employed content analysis methodology to achieve its goal. This study employs a Case Study to assess the internationalization and revenue enhancement of Amazon, JD.com, Alibaba, and Suning.com.

A. Data Sources and Duration

The financial data reports on revenue from the top 10 e-commerce companies worldwide within 2020 were gathered from the internet [70, 71]. World e-commerce sales and projections data from 2014 to 2024 (in billion USD dollars) were sourced to validate the projections in 2020 and 2021 [72]. Also, information from literary works and public repositories was collected to interpret and analyze the study.

(i) Analysis of Data. The analysis of this paper was conducted using Excel 2010 data analytics tool based on the quantitative data gathered. The analysis for the top four e-commerce companies in 2020 was aided by publicly analyzed information [70, 72]. The researchers verified the data for analysis from the annual reports and websites of the respective companies.

(ii) Case Selection. The influencing elements of growth in revenue in the e-commerce business transactions and innovation of Amazon in the USA and three Chinese e-commerce businesses, namely JD.com, Alibaba, and Suning.com, are assessed in this study.

Also, the factors influencing e-commerce revenue enhancement, strategies for accomplishing platform business objectives through commodity import and export, and the future of platform businesses to enhance the revenue growth of these four largest e-commerce internet businesses in the world are examined.

(iii) Case Analysis. This study analyzes the background and revenue enhancement of Amazon, JD.com, Alibaba, and Suning.com, representing the top four leading e-commerce companies globally within 2020. Amazon was ranked first in the global leading e-commerce enterprises by revenue in 2020. The second, third, and fourth best e-commerce industries 2020 world ranking was occupied by Chinese e-commerce conglomerates JD.com, Alibaba Group, and Suning.com. The key analysis would focus on the performance of Amazon and the three e-commerce Chinese industries:

AMAZON

Amazon was founded in 1994 and had its headquarters in Seattle, Washington, USA. It had an initial revenue amounting to 5 billion USD. The market capitalization of Amazon is USD 1.37 trillion. It has 840,400 employees and was adjudged to be the first world's largest e-commerce company in 2020, with 280.5 billion USD in 2020. Amazon company is composed of cloud computing, e-commerce, provider of artificial intelligence and digital streaming. Amazon's core businesses are Amazon Music, Prime Video, Twitch, and Audible, which provide video, music, and audiobook downloads and streaming. Amazon Publishing and Amazon Studios are the company's publishing divisions, and Amazon Web Services is the company's cloud computing sector.

JD.com

Liu Qiangdong created JD.com on June 18, 1998, with headquarters in Beijing, China. As of 2020, it has a revenue base of 82.86 billion dollars and a market capitalization of 93.15 billion dollars. It currently employs 220,000 employees and is ranked second in the world's 2020 best e-commerce industries based on revenue. JD.com, together with Alibaba and Suning.com, is one of China's three major online retailers B2C in terms of volume of transactions and revenue. JD.com's online shopping platform was launched in 2004. Tencent owns a 20% stake in the business. JD.com's most well-known business activities and services are its AI delivery and high-tech employing autonomous technology, drones, and robotics. It has the globe's most extensive drone delivery system, infrastructure, and competence.

ALIBABA

Alibaba Group was founded in 1999 and had its headquarters in Zhejiang, China. It has a revenue base of 71.98 billion USD and a market capitalization of 595.23 billion USD as of 2020. It has 117,600 employees, and it is the third-largest e-commerce corporation in terms of revenue. It is a worldwide technology firm based in China specializing in electronic marketing, internet technologies, and retailing. Alibaba was created in Hangzhou, Zhejiang, about 22 years ago and provides online commerce through web portals, electronic payment systems, retail search engines, and cloud computing. Hema, a grocery chain launched by Alibaba in 2017, allows customers to receive delivery in less than 30 minutes through their website request or place an order from the stores. Alibaba.com is composed of three main businesses: a B2C (business-to-consumer) platform, a C2C (consumer-to-consumer) platform, and a B2B (business-to-business) e-commerce platform. E-commerce, cloud computing, entertainment, retail, films, TV shows, Alibaba Cloud, AliExpress, AliOS, mobile media, Alipay, AliGenie, Taobao, Daraz, Lazada, and Tmall are the primary goods and services of Alibaba Group.

SUNING.com

Suning.com was founded in 1996 and had its headquarters in Nanjing, China. It has a 38.06-billion-

dollar revenue base and a market capitalization of 83.13 billion dollars. Suning.com, based in Nanjing, Jiangsu Province, is one of China's most prominent non-government merchants. Suning.com ranks fourth after JD.com and Alibaba in terms of revenue. Suning.com sells tangible items, including 3C products, books, general retail, home appliances, household commodities, cosmetics, care products for newborns, content, and other service products through its e-commerce sites.

IV. RESULTS AND DISCUSSION

A. Top 10 World's largest e-commerce industries in 2020

The present state of the global e-commerce industry contributes to exceptional development by delivering improved technology, more timely services, and more powerful and "immediate" delivery alternatives as economies throughout the world prosper. Sales figures in the worldwide e-commerce business continue to rise year over year, but determining the cost of the global e-commerce sector is worth it, and its contribution is interesting. In 2020, the global e-commerce industry sales were USD 3.465 trillion and were projected to reach 4.28 trillion, owing primarily to rising consumer spending as the primary driver of this e-commerce business expansion [70, 71]. The forecast of COVID-19 impact on businesses by experts within the field was so bleak that most citizens thought businesses were near collapse. However, companies that adopted technology and e-commerce for business amidst the challenge period sailed through tremendous victory [73]. The performance of the top ten most profitable e-commerce companies in the world in 2020 gives hope to the world. The preceding is a ranking of the leading e-commerce companies based on their revenue in billions of dollars. However, this study focused extensively on the first four companies for analysis based on their strategy and adoption of technology, ranks, and revenues obtained in 2020. Table 4 indicates the top 10 e-commerce industries in 2020 based on revenue size according to the world rankings.

Table 4: Top 10 World's Largest e-commerce Companies in 2020.

Position	e-commerce Company	Revenue(USD billions)	Headquarters
1	Amazon	280.5	Seattle, USA
2	JD.com	82.86	Beijing, China
3	Alibaba group	71.98	Zhejiang, China
4	Suning.com	38.06	Nanjing, China
5	Rakuten	11.6	Tokyo, Japan
6	eBay	10.8	California, USA
7	Wayfair	9.13	Massachusetts, USA
8	Zalando	7.26	Germany, Berlin
9	Coupang	6.23	South Korea, Seoul
10	Flipkart	6.1	India, Bangalore

Source: [70, 71]

Statistics and trends in the global e-commerce industry portray that Amazon is the world's most profitable and largest e-commerce company, with revenues of USD 280.5 billion in 2020, followed by JD.com USD 82.86, Alibaba Group USD 71.98, Suning.com 38.06. The fifth to tenth positions also contributed immensely, but the study focused on the first four companies.

Fig. 3 displays the top 10 most prominent e-commerce companies' positions in percentages globally within the year 2020. The visual observations depict that Amazon possesses 54% of the revenue, JD.com 16%, Alibaba 14%, Suning 7%, and the others occupy about 9%. The study analysis emphasized the leading four companies based on revenue performance concerning the top 10 e-commerce companies.

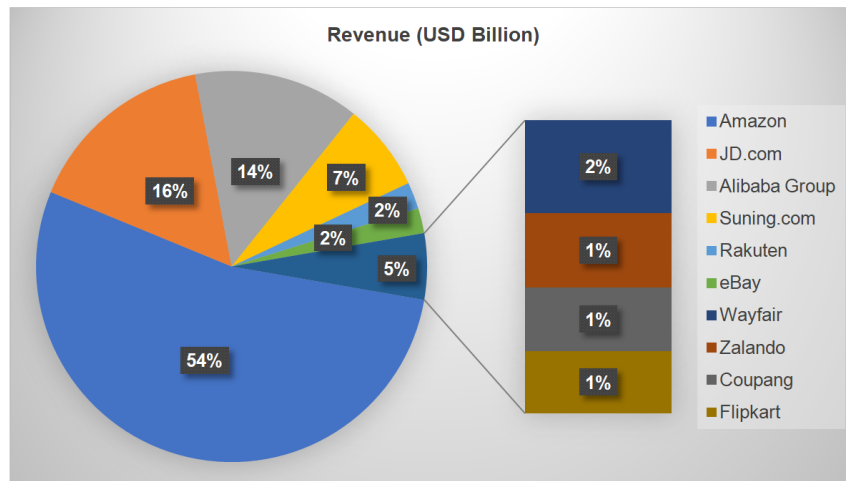
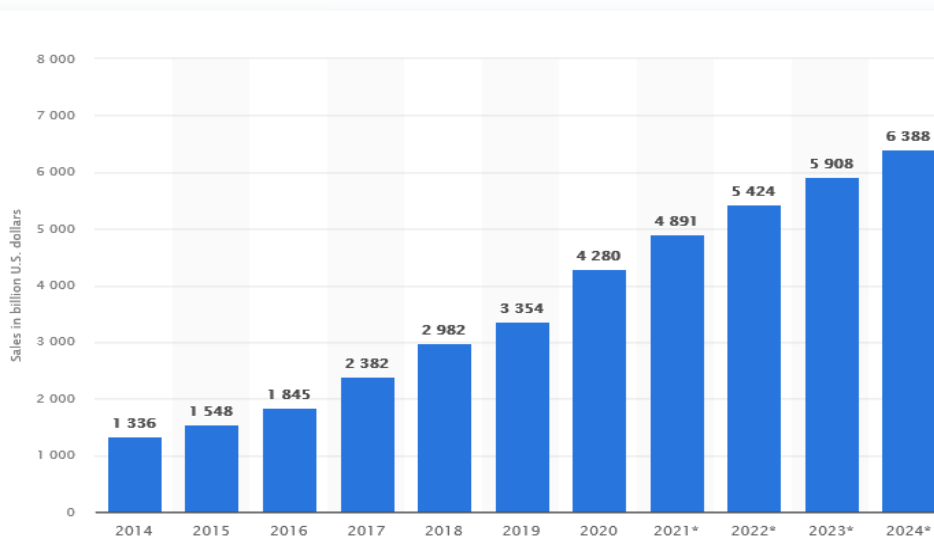


Fig. 3. Percentages of E-commerce companies Revenue in 2020 (USD dollars).

The key differences and characteristics of the companies under study are Alibaba, JD.com, Suning.com are the dominant players in China for e-commerce and cloud computing. JD.com is one of Alibaba's most significant domestic e-commerce competitors. Amazon operates in the U.S.A and is the leading company in most other emerging markets worldwide.

(i) World e-commerce sales and projections from 2014 to 2024. Worldwide Survey online purchasing from 2014 – 2024 demonstrates that e-commerce purchasing will continue to soar as the world is interconnected through e-commerce trade. The forecasting encompasses services or products ordered through the website and any other machine, notwithstanding the procedure of settlement or attainment. However, it eliminates travel and event tickets. Fig. 4 indicates that in 2020, retail e-commerce sales globally were projected to reach 4.28 billion USD, and electronic-retail earnings

are forecasted to increase to 5.4 billion USD in 2022. E-commerce has been an attractive trading strategy, anticipated to reach 6.388 USD billion in 2024 [72]. In 2020, electronic retail sales contributed to 18% of all retail sales globally. This number is projected to reach 21.8% in 2024. The forecast made by [72] indicated that above 2.14 billion clients are estimated to digitally shop for products and services in 2021, an upward adjustment from 1.66 billion in 2016. These facts support the global online purchasing insight forecast from 2014 to 2024. In 2016, a percentage of 58.3 of all internet subscribers in the world was projected to have bought something online. This figure jumped to 63% in 2019. The e-commerce sector is expected to grow and enlarge sales to 6.388 USD billion in 2024, with e-commerce customer insight forecasted to exceed 65% of network subscribers globally within 2021 [72]. Figure 4 shows the world projections from 2014 to 2024 in billion US dollars concerning e-commerce sales.



Source: [72]

Fig. 4. World e-commerce sales and projections from 2014 to 2024 (in billion US dollars).

B. The Factors that account for revenue increase in the e-commerce businesses

(i) Population: Businesses' success depends on the massive acceptance of a population or target market. The acceptance of e-commerce and new technologies by citizens of a country enhances a company's business innovation and model implementation strategies. A country with the largest population alongside technological know-how has a more significant impact on businesses operating in that particular region and beyond. The population acceptance and use of e-commerce platforms increase the company's revenue.

(ii) Language: Language as a factor in e-commerce adoption and use is an essential factor. From the background of the selected e-commerce industries, companies with their e-commerce platforms language settings in local languages have massive gains. The American and British English language has been the official language for most countries worldwide. Also, with the largest population globally, China has most of its platform's language set to Chinese. Currently, China has included the English language and some other languages, which has led to the overwhelming acceptance of many e-commerce platforms and gaining international recognition. This assertion supports that language is an effective and efficient communication tool for survival and revenue enhancement.

(iii) Technological acceptance and familiarities: The acceptance of new technologies by citizens of a country enhances a company's innovation and model implementation strategies. A country with enormous technological know-how personnel's alongside easier access to technology transfer systems has a more significant impact on businesses operating in that particular region which invariably increases the revenue of industries that have implemented the new inventions.

(iv) E-commerce and the influence of "Modern Infrastructure": The prioritization of swift increase in domestic internet infrastructure by policymakers to disadvantaged areas to ensure accessibility to a higher internet speed at the highest levels has assisted e-commerce businesses to experience an immense turnaround. Even though the quantity of internet end-users has increased in the past two decades, several countries remain unconnected and have internet interruptions. In China, the State Council pledged in 2015 to finance \$22 billion by 2020 to enlarge broadband access to deprived places to bridge the digital gap [74]. By 2019, 86% of Chinese people have broadband access. In pursuance of the broadband upgrades, China's next technological advancements included expanding the 5G infrastructural network, artificial intelligence (AI), cloud computing, and blockchain technology. These technologies are beneficial to its e-commerce sector during the COVID-19 peak periods [75]. The State Council vastly improved internet infrastructure in May 2020 to motivate the production of apps for internet business, telemedicine, distance education, smart city technologies, and vehicle networking and spur digital consumption. The COVID-19 crisis further led to more than \$106 billion investment in infrastructure in 2020 which invariably increased the revenues of e-commerce industries [75].

C. Achieving e-commerce enterprise objectives via export and import of products

As e-commerce businesses grow, enterprises must decide whether to import or export products more successfully. Many enterprises are competing on a global standard due to internet development. E-commerce has prompted massive import and export of items across platforms because of its profitable nature. The idea of import and export assist emerging enterprises in growing and expanding more quickly by enabling users to access broader markets from outside their country of residence and increasing revenue for medium and large businesses [76]. Importing is unquestionably worthwhile as organizations aim to meet better industry standards while minimizing manufacturing expenses. Conversely, suppose a firm's local market is not large enough to fulfil its order and expected clients. In that case, it may be necessary to seek diverse ways to enlarge its horizon via export to meet the intended goal. Whether to import or export is a decision made by a company [77]. Because the fundamentals of a successful e-commerce firm are commodity import and export, the study explains the key merits of e-commerce in respect of product exchange, focusing on the current technology acceptance systems: Firstly, e-commerce improves sales capabilities; Importing products through business platforms can help companies conserve revenue. Improvement of revenue and overall sales capacity can also be achieved by exporting products. Export-oriented businesses are always looking for new opportunities to broaden their horizons and expand their markets, whether domestically, nationally, or internationally [78].

Secondly, increasing earnings or revenues through e-commerce: Exporting goods can greatly increase profitability. The primary motive for exporting products is to fulfil international orders, often larger than domestic orders. Although domestic clients may only order a few products or a bag, foreign corporations frequently order a container of goods, resulting in higher earnings. Furthermore, if a company's products are perceived as remarkable or inventive in diverse nations, its profits soar in a short period [79].

Lastly, international export assists organizations with additional expertise and knowledge via uncovering trending commodities marketplace tactics and deepens knowledge relating to international competition through e-commerce [6].

E. The pathway of e-commerce companies and their merits in the 21st Century

The e-commerce industry is rapidly evolving as a consequence of technological improvements and changing client behaviour. The combination of massive electronic data and internet search for analysis of market patterns is no longer an option; relatively, it has become a necessity. The new strength that emerges will define the direction of the field. The internet of things, including cyberspace, robots, drones, self-driving cars, and artificial intelligence, are among the most modern industrial and marketing platforms products [80]. These internet inventions should be investigated to discover their influences on e-commerce enterprises' strategies and primary consumer functions [81]. Innovative dwellings and intelligent cars are outfitted with a variety

of smart equipment that enables consumers to execute precise jobs and operations to aid future service interactions.

Because computers are now in control of many functions, e-commerce business owners must perform in-depth studies to determine whether the things made of the internet will boost or diminish client connection to enterprises through the provision of retailing and servicing activities. As companies explore self-driving cars and other software from modern technologies, perceptions are improving. Numerous retailers and producers are attempting to capitalize on advances in drones delivery and robotics-assisted technologies [82]. Firms need to use the platform business's sophisticated systems to learn about various distribution strategies' short and long-term benefits and effects.

This study outlined four key merits why emerging entrepreneurs and incumbent e-commerce giants should continue to invest in this sector:

To start with, e-commerce is characterized by lower operating costs. Currently, setting up an e-commerce business is in-expensive with the aid of innovative platform owners. The platforms make it easy for new businesses to start selling things online, from creating a visually appealing, mobile-friendly website to accepting payments and managing inventory and shipping. Entrepreneurs can also merge their online and offline sales and inventory management operations.

Additionally, e-commerce assists entrepreneurs in tracking their customers. The exciting and fantastic aspect of e-commerce is the number of data entrepreneurs can reap from their customers with web data analysis. Entrepreneurs may use the data organized to optimize their online stores.

Again, e-commerce helps entrepreneurs to improve customer experience to maximize their target objectives. The increasing number of consumers shopping online are overwhelming contrarily several also prefer an in-store experience. It is worth it to touch and test products while obtaining guidance from the staff. An e-commerce website may render customers the best of both worlds. E-commerce websites may provide clients with the comfort of 24/7 purchasing from anywhere globally.

To crown it all, e-commerce expands the reach of entrepreneurs' businesses. E-commerce enables entrepreneurs to have more influence against much larger competitors and enlarge their territory beyond their region to a different community, the whole country, or foreign markets.

V. CONCLUSION

This paper objectively seeks to broaden the comprehension of the internationalization and performance of the top four e-commerce companies: Amazon, Alibaba, JD.com, and Suning.com, based on a case study method. This study found that e-commerce enterprises with modernized technology will impact how customers choose platforms, products, and services and make purchases. The study's findings depict that Amazon possesses 54% of the revenue, JD.com 16%, Alibaba 14%, Suning 7%, and the others occupy about 9%. Knowledge of business-to-consumer e-commerce platform management is essential for a nation's development. The internationalization of e-commerce is

beneficial for all organizations to experience global interconnectivity. The offline and online worlds are becoming increasingly entwined. The e-commerce industry's prospects need to determine the platforms' differences and similarities and how developing high-tech advancements impact both. Furthermore, these e-commerce conglomerates are implementing a slew of technologically advanced trading techniques. These e-commerce companies are now working to establish a drone delivery system to make goods and services available to customers quickly. Due to unprecedented and uncommon results developments, clients will likely acquire more products from these e-commerce platforms. The search for an avenue to conduct such an important research subject requires further investigation.

Contributions of the study. Insight into this study has brought forth more understanding of the factors influencing e-commerce revenue enhancement, strategies to achieving e-commerce enterprise objectives via export and import of products, and the future and benefits of electronic commerce businesses. Knowledge on the shift from traditional to technological e-commerce business in the current business-to-consumer environment would boost the expansion of e-commerce and improve revenues. The results of this paper will support e-commerce businesses, Government, and researchers who aspire to engage in scientific inquiries concerning business-to-consumer e-commerce platform business. The significance of this study is revealed through the technological process acceptance and addressing the factors that increase e-commerce companies' revenue and customers' online purchasing decisions in the e-commerce industry.

Practical Implication. E-commerce companies and agencies should solicit views from all stakeholders involved in the value and innovation creation connection of consumers, platforms, and producers to effectively implement new technologies and policies. Thus, consumers' value and innovation creation composition, platforms, and producers should be highly monitored. Also, governments and agencies should promote e-commerce innovations in autonomous delivery, telemedicine, online education, and live streaming to assist the delivery and purchasing of products in daily transactions and crisis periods such as the COVID-19 pandemic.

Policy Implication: The focus of every Government in the 21st Century should be geared towards internet infrastructural development. Internet infrastructural development will ensure the free flow of information, interconnectivity, and trade. In addition, competition laws must be revised to counter the winner-take-all tendency of digital platform enterprises. Finally, tax procedures should be modified to remove loopholes that digital platform businesses exploit, ensuring that e-commerce companies pay their fair share of taxes.

VI. FUTURE SCOPE

This study is challenged to focus only on the top four global e-commerce companies with the most extensive revenue base within 2020 during the COVID-19 intense period. Based on data available to ascertain dynamic results, further analysis would be conducted on several

e-commerce industries with high performance in the current period.

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