

E-Commerce, Customer Relationship Management and Artificial Intelligent amid COVID-19

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ABSTRACT

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Coronavirus is intensely changing various aspects of life, including in business. The pandemic has altered a variety of customer behaviours. The ability of companies to understand these behaviour changes affects business continuity. This study explains the relationship between customer relationship management (CRM) and e-commerce and its trends during the pandemic. This research is descriptive qualitative research using secondary data. This study found that CRM and e-commerce issues grew rapidly during the pandemic. These results show that customer awareness of e-commerce is increasing to make transactions of their needs. Simultaneously, this customer behaviour is anticipated by business people by improving CRM as an effort to manage customer satisfaction. Some results in different countries are not always the same response between CRM and e-commerce.

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Introduction

The issue of COVID-19 is already a global issue and affects various aspects of life, including in the business world [1]–[3]. On the other hand, developing existing technology, especially information and communication technology, provides ample opportunities to

change various current business patterns. Today's society has entered the digital world massively to meet their multiple needs, such as ordering food, buying a house, a car, dating, and working [4], [5]. Without realizing it, today's business people will find it difficult when they are not included in this all-digital business environment. The presence of an online business is becoming a necessity to maintain sustainability [6], [7]. Internet access and usage, which continues to increase worldwide, is part of the picture of online business growth [8], [9]. People who buy their needs online are over 4.2 trillion USD worldwide, with over 25 per cent growth. This figure is predicted to rise to 21.8% in 2024, or an increase of 8.2 percentage points in just five years. Existing studies explain that mobile phone ownership is increasing in the community along with the growth of e-commerce activities by visiting various retail service sites. The percentage of consumers using their smartphones to shop exceeded half of all retail purchases (55.4%) of global e-commerce sales in 2020. Another critical study is the role of various social media (Facebook, Instagram, TikTok) which contributed to the increase in visits to different web retailers. Social media users visit and purchase after seeing those ads on their platforms.

Tight competition is happening on online shopping platforms as most online retailers sell the same or similar product categories. As a result, online retailers must implement the right strategy to ensure that their customers continue to do business with them. The quality of relationships is embedded in marketing relationships, which explains a business's efforts to build deep and cost-effective relationships with its clients [10], [11]. The company's relationship with its customers is essential. The quality of the relationship explains the closeness of the business and its customers. The most cited components in the quality of consumer relations are trust, commitment and satisfaction. As a result, the construction of the quality of relationships used in this study is trust, satisfaction and loyalty.

Literature Review

A. Electronic Commerce

E-commerce is all trading activities carried out through electronic media. Just like trading that is carried out directly or face to face, e-commerce also includes the process of promoting, purchasing, and marketing products [12], [13]. The main difference is the trading system through electronic media or the internet. In e-commerce, the entire trading process, from ordering products and data exchange to transfer funds, is carried out electronically. During the development of digital technology and information flows that are increasingly sophisticated. E-commerce activities are an application of e-business, including business activities and collaboration with partners, client services, job vacancies, and so on. E-Commerce is a form of technological development in the economic field. With COVID-19, the growth of new e-

E-Commerce, Customer Relationship Management and Artificial Intelligent amid COVID-19
(Nuzula et al.)

commerce is very rapid. Thus, there are only a few e-commerce that can survive. The need for customers who want to be served anytime and anywhere using technology has provided new opportunities for developing marketplaces that do e-commerce [14], [15]. Of course, this condition will also move on to other aspects, such as finances and production.

B. CRM and Digitization

CRM is a process in a business that manages its interactions with customers. This activity is increasing by using technology in processing big data related to the characteristics of diverse customers [16], [17]. Customer data from various sources of information is processed by utilizing artificial intelligence to produce accurate information to build customer and company attachment. In this way, the company can maintain the sustainability of its business, especially by retaining customers and increasing the growth of its business through new customers or services. CRM can be used with past, present or potential customers.

It's common for companies now to use AI in CRM. Companies are getting more competent at collecting customer information, analyzing their needs, and gaining a deep understanding of their relationship with AI [18]. AI performs various activities such as helping to predict behaviour, assisting sales reps, predictive leads, generating targeted content, or automating helpdesks. With today's technology, CRM activities have become more efficient and productive. With COVID-19 encouraging customers to transact mobile, the role of technology-based CRM has become an essential need [19]. The growth of CRM usage in providing more specific provisions for each customer can be applied better.

Method

This research is qualitative and descriptive. The data was collected from secondary data taken from the internet using the Google Trend online application. Data in the form of frequencies from January 2019 to August 2022. The keywords used are E-commerce (Topic), Customer Relationship Management (Field of Study), and Artificial Intelligent (Field of Study). The issue selection was associated with the issue of COVID-19 as an issue that changes various patterns of life today. The aspects studied include the interrelationship of search patterns on the three points, the anomaly of issues in some regions, and the five most countries on each subject.

Result

Figure 1 shows the trending issues of e-commerce, CRM and AI whose frequency has been normalized. The data was taken from January 2019 to August 2022 from Google Trends.

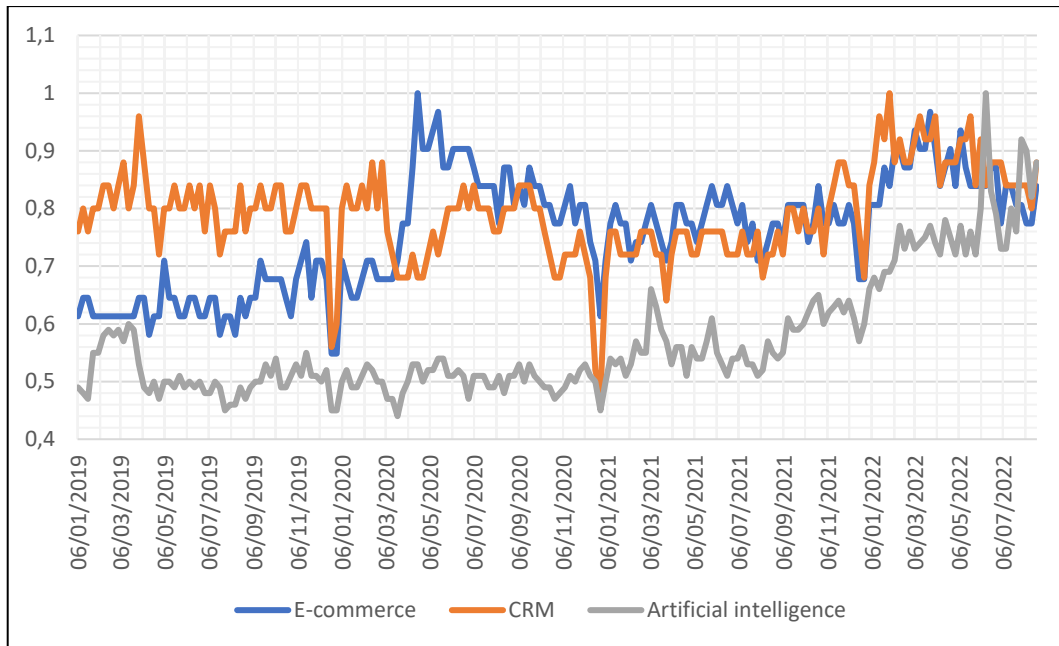


Fig. 1. Trend on E-commerce, CRM and AI

From Figure 1, in the last three years during the pandemic, there has been a tendency to search for e-commerce, CRM and AI. Especially in 2022, there will be a significant increase in AI keyword searches through Google Trends. More detailed observations also show an uptrend and a downtrend in all three words in the investigation.

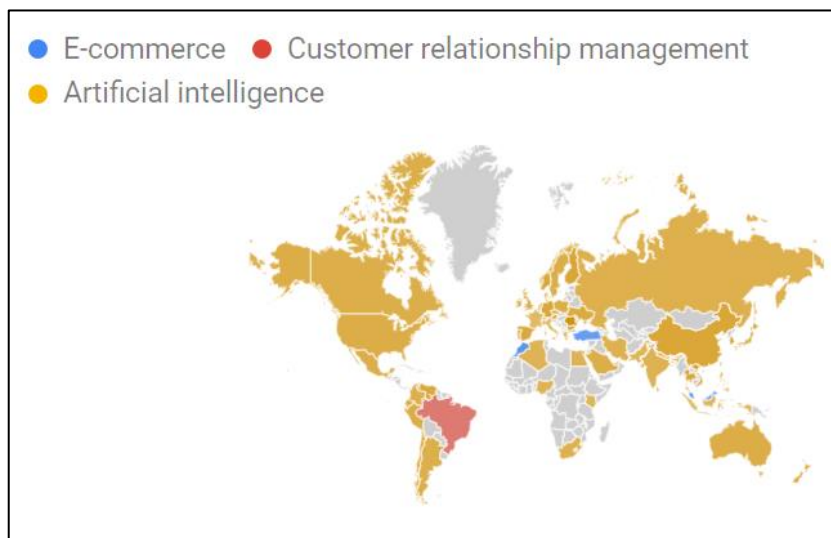


Fig. 2. Spread of issues in different regions

From Figure 2, AI issues tend to dominate in various countries. Few regions do not address the issue of AI. These results indicate that businesses that utilize AI have carried out almost the entire world. An interesting finding is that the issue of AI is not domesticated in

some countries, such as Brazil, Marocco, and Turkey. These three issues are also not widely discussed in African and Eastern European countries.

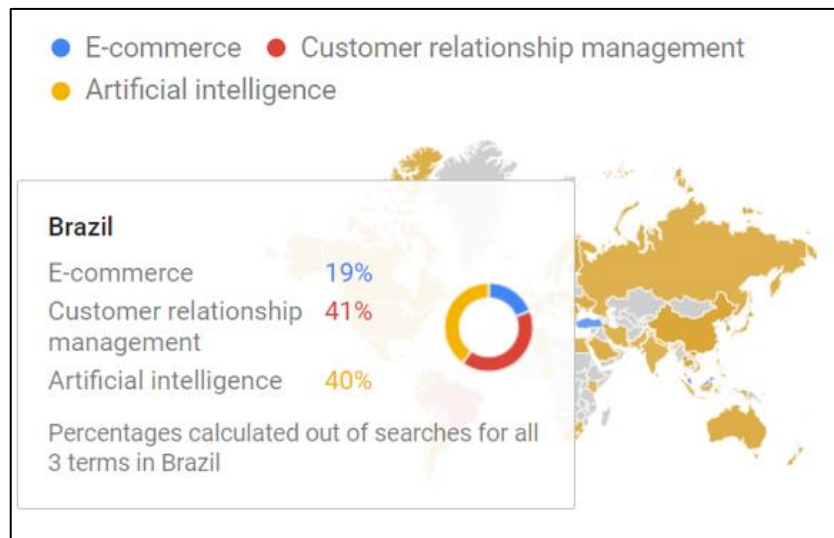


Fig. 3. Issue of E-commerce, CRM and AI in Brazil

Brazil has a pattern different from the CRM issue, which is higher than other issues. The issue of e-commerce at the lowest search position (19%). These results need to be searched on different data sources to see developments related to e-commerce. The high AI issue is likely to be associated with using AI in sectors other than e-commerce.

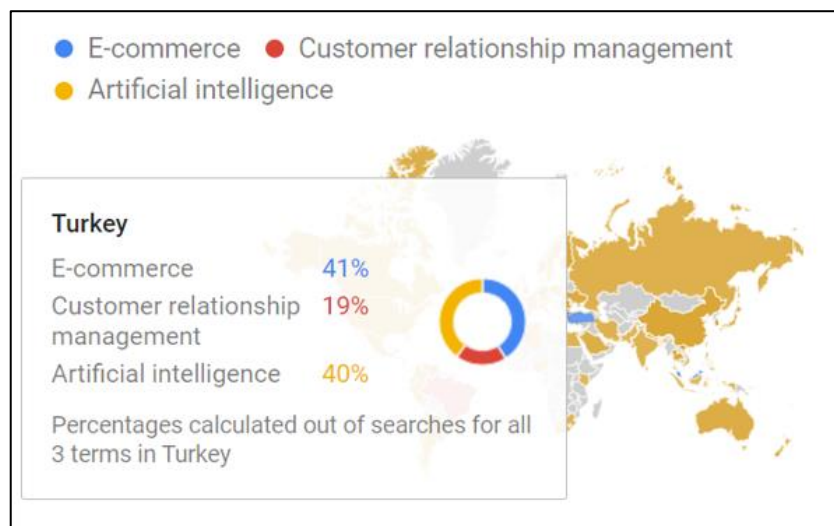


Fig. 4. Issue of E-commerce, CRM and AI in Turkey

Turkey is a country whose e-commerce issue exceeds the AI issue even though it is only 1% different. CRM is not a much-discussed issue in the country. The difference in issues with surrounding countries (Western Europe) in searching for these three keywords can indicate the issue of Turkey's business that is not only intrinsic to Western European powers.

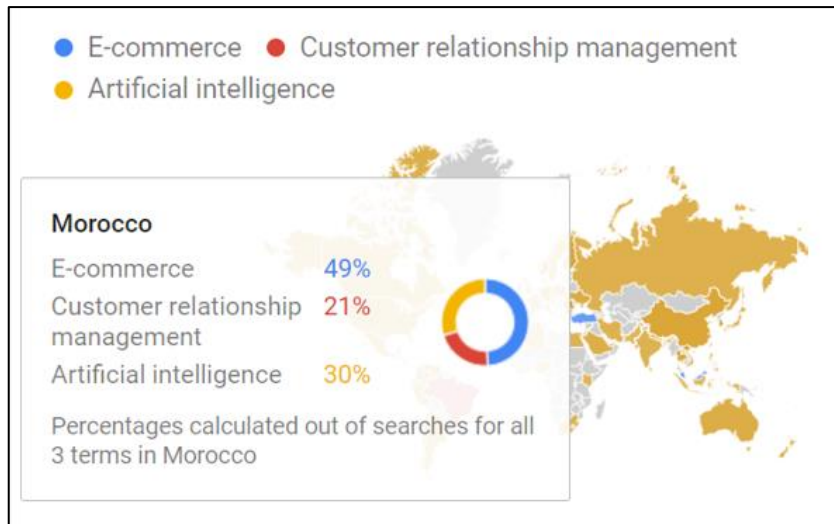


Fig. 5. Research model Issue of E-commerce, CRM and AI in Morocco

Marocco has a very different pattern from various countries in the world with the issue of e-commerce (49%) which is much higher than the other two issues. It is possible that during this pandemic, there was high growth in e-commerce in Marocco.

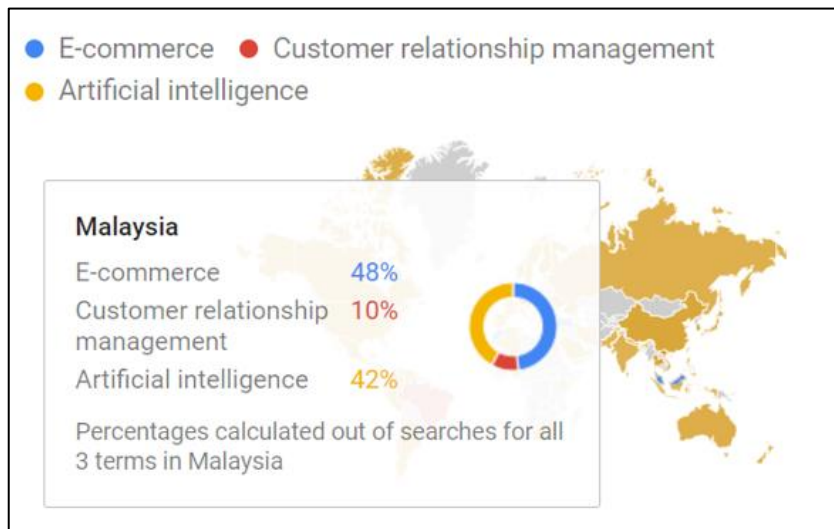


Fig. 6. Research model Issue of E-commerce, CRM and AI in Malaysia

Malaysia, like Marocco, has a higher search rate on e-commerce than the other two issues. Even CRM issues are not widely searched for by searchers (10%).

The resolution of this issue in countries based on interest is shown in Figure 7 to Figure 9.

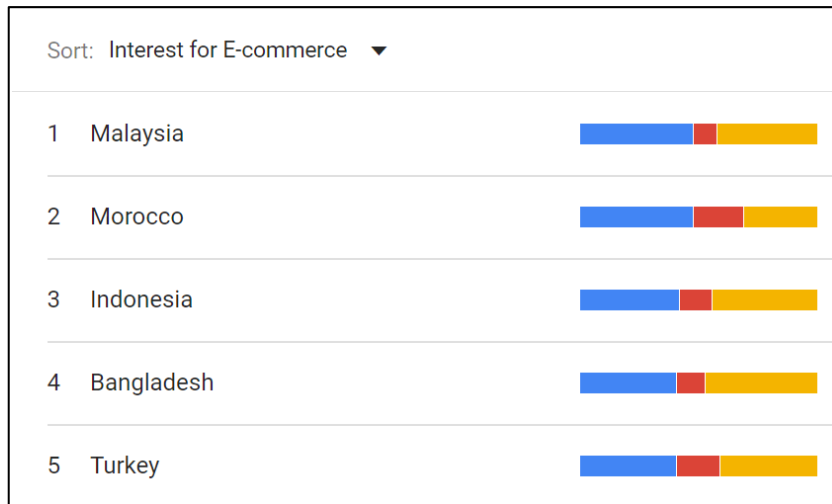


Fig. 7. The big five of countries in e-commerce issue

The five countries that most commonly discuss e-commerce are Malaysia (48%), Morocco (48%), Indonesia (41%), Bangladesh (41%) and Turkey (41%); of the whole discussion of the three issues.

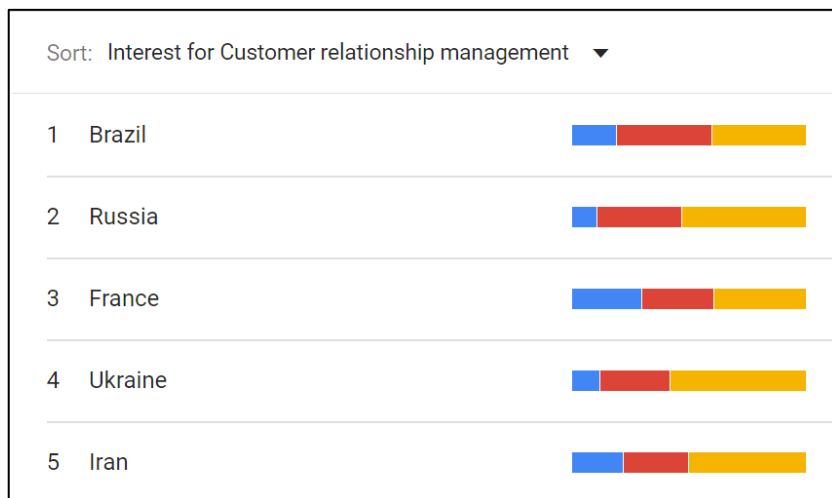


Fig. 8. The big five of countries in CRM issue

The five countries that discuss CRM the most are Brazil (41%), Russia (30%), France (31%), Ukraine (30%) and Iran (28%); of the whole discussion of three issues.

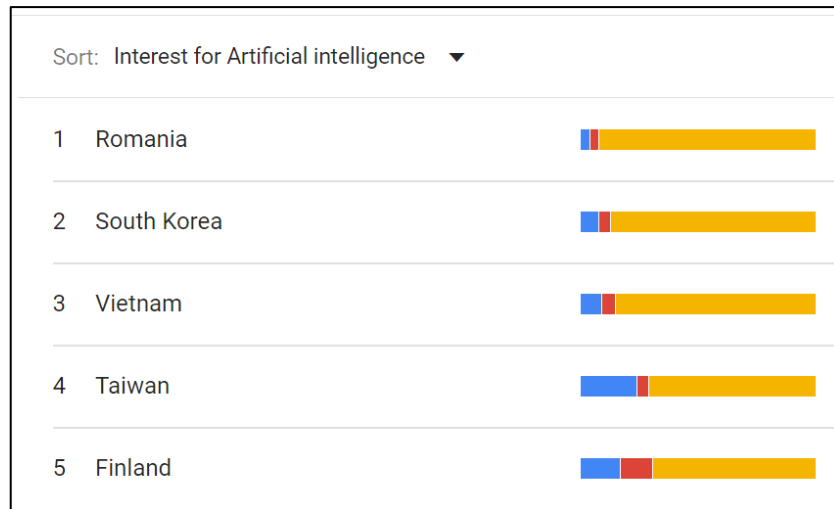


Fig. 9. The big five of countries in AI issue

The five countries that were discussed the most about CRM were Romania (92%), South Korea (87%), Vietnam (85%), Taiwan (71%) and Finland (69%) of the total discussion of the three issues.

Discussion

The change in customer behaviour driven by technology and the insistence of COVID-19 is deeply felt in the retail business world [1], [3], [4]. Retailers must understand these behaviour changes while increasing customer satisfaction. Understanding the environment of customer activities on social media can be done using various tools that help retailers to determine the right direction for their business activities [10], [11], [13]. With digital technologies accessible online, retailers make it possible to reach a broader range of customers from a geographical aspect. Integration of marketing channels is becoming more viable using increasingly complete customer data. This activity opens up opportunities when they enter the marketplace.

The data obtained explains a close relationship between e-commerce, CRM, and AI in almost all countries. In addition, there is an increasing trend during the pandemic compared to the pre-pandemic period. These results indicate that the pandemic has driven the growth of e-commerce, CRM and AI. Causality can be explained as maintaining health and safety in the coronavirus disease, and the governments of each country issue various policies [15]. Social-distancing policies make people's physical movements limited. To meet their daily needs in multiple forms, they utilize mobile technology that has been available with a good level of features. People are trying to meet their needs through online markets [17]. This need drives

the growth of new marketplaces and the move from offline services to online services from service providers and goods.

The development of modern business theory and practice has placed CRM as a vital element in ensuring business sustainability [14], [16], [17]. With the change in customer behaviour caused by COVID-19, companies are improving managing CRM activities. This change is in the hope of retaining customers even though they no longer easily make transactions directly (face-to-face). Internet-based services are developed on all distribution channels owned by the company as an antisemitic on the move from offline to online business. The fast-growing online market and its large segmentation are driving improving and strengthening CRM issues.

The development of technology in the era of the Industrial Revolution that has most influenced changes in various sectors is AI technology. The use of this technology has doubled human productivity in meeting its needs. Utilization in the business world has also experienced the same thing associated with AI [16]. Increasingly customer service with increasingly diverse demographic and geographical coverage can be better handled using AI. It became a natural thing when during this pandemic, AI became an issue that was closely related to the issue of e-commerce. CRM can be improved when companies leverage AI to process customer-related big data. This issue is the dominant issue in all countries [16], [17]. This result indicates that AI is indeed a prima donna technology used by society in various activities, including corporate or retail services.

Conclusion

This study found that the frequency of Google Trends searches on keywords related to e-commerce, CRM and AI increased rapidly during the pandemic. There is a close relationship between the three issues that have positively responded to COVID-19. This result can be a reason businesses can immediately strengthen their online market activities. In addition, this information can indicate for online service managers to pay attention to the importance of CRM and AI as enablers in maintaining business continuity.

Conflict of Interest

Authors declare that there is no conflict of interest.

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