EVALUATION OF THE ARTIFICIAL INTELLIGENCE TECHNOLOGY ACCEPTANCE MODEL FOR E COMMERCE.

V.PRIYANANDHINI Assistant Professor, SRM Arts and Science College, Chennai

ABSTRACT

Artificial Intelligence (AI) has played an important role in e-commerce technology during the past few decades. AI is the most advanced technology that the world is currently experiencing. The way business is conducted in India has been impacted by the E-commerce industry in the same way. India is the E-commerce market that is growing the fastest, and it is expected to grow at a much faster pace in the upcoming years. E-commerce encompasses all types of information exchange between organizations and stakeholders, using electronic media connected to the internet network. The purpose of this study is to analyze the role of e-commerce on consumers in the digital era and the role of e-commerce on MSME business actors in the digital era. E-commerce involves the use of computing and communication technologies to conduct business between individuals or groups of a business and their customers. AI techniques systems play a significant role in the development of e-commerce. B2C and B2B e-commerce are two distinct types of e-commerce.
Keywords: Artificial Intelligence E-commerce.

INTRODUCTION

Digitisation has been unprecedented in the world's economy for the past thirty years. Traditional management methods have been replaced by technology-mediated managerial and operational tasks in businesses. Consumers have the ability to shop online through internet-enabled mobile devices, giving them access to a large market from anywhere at their convenience. Hundreds of varieties, brands, and both expensive and inexpensive products are now accessible to consumers. Moreover, they can now compare various products quickly and remotely by analyzing their quality and price. Technology has been used by most retail businesses to maintain their competitive advantage and to start online retailing or Electronic-Commerce (EC).Electronic commerce may be defined as sports or offerings related to shopping for and selling products or services over the Internet. Firms have an increasing number of banks in e-commerce due to clients' growing demand for online offerings and their ability to create a competitive benefit. However, firms war with this e-business practice because of its integration with rapidly evolving, without problems adopted, and fantastically less expensive facts' technology.According to the Indonesia e-commerce user statistics report, it is projected that the number of users will rise to 189.6 million by 2024. The number of e-commerce users in Indonesia has been on the rise since 2017, with 70.8 million users in that year. This trend continued in 2018, when the number of users reached 87.5 million, and it has only continued to grow. By 2020, there will be 129.9 million e-commerce users in Indonesia, and it is expected to reach 148.9 million users in 2021. By 2022, the number of users is expected to reach 166.1 million, and by 2023, it is expected to reach 180.6 million users. (Christy, 2020). E-commerce, also known as online shopping, particularly in the retail and wholesale sectors, has the potential to create a market in the digital age. In Indonesia, the trend of e-commerce usage has experienced significant growth in recent years, and it is anticipated that this growth will persist in the coming years.According to Hansen and Mowen (2019), Micro, Small and Medium Enterprises (MSME) sector can be a significant driver of a country's economy, as it not only contributes to the Gross Domestic Product (GDP) but also provides employment opportunities for people of all ages, educational backgrounds, and skill levels. In essence, MSMEs serve as a means of empowering communities and enhancing the nation's economy. As per the MSME Empowerment Report, 2022, approximately 114.7 million individuals have been successfully recruited and gained employment through MSMEs in Indonesia. This indicates that Indonesia's workforce absorption stands at 56% (MSME Empowerment Report, 2022:5).

Key Techniques of AI
Machine Learning (ML)

The term "Artificial Intelligence" is increasingly often used in conjunction with "Machine Learning" these days, but they actually refer to different concepts. While Artificial Intelligence encompasses the broad idea of "thinking" machines, ranging from science fiction robots to the self-learning computer code developed by businesses and academia today, Machine Learning is the practical application that is driving significant advancements in reality. Essentially, it involves technology that enables machines to learn from data without the need for explicit programming.

Neural Network
As a progressive organization, algorithmic models are organized hubs where all of them exchange information between themselves, adding to it more specific importance and value as It's going through the chain. Their complicated, interconnected nature Allows the information to be handled in an entirely more detailed way Traditionally, direct calculations are allowed to enable them to be more intelligent. yield from large, muddled and unstructured datasets.

Deep Learning
This is a subfield of AI (see underneath) that utilizes many layers of counterfeit neural organizations to deal with the handling of information in progressively complex manners. This implies that characterization (arranging into sets) should be possible all the more decisively and example acknowledgment is more complex. These are two of the most important tasks that AI is doing today, which means Deep Learning is a bleeding edge and a very dynamic field of research. Deep learning is a term used to describe layers of neural organization stacked on top of each other to be used in deep learning. Natural Language Processing (NLP) Natural Language Processing (NLP) innovation is worried about building machines that can comprehend human discourse designs. Because spoken correspondence is a lot more common to us, composing PC code, it's a good idea that machines, with their prevalent handling powers.

B2B
 A sort of trade exchange that exists between organizations, for example, those including a maker and distributor, or a distributor and a retailer is known as Business To- Business (B2B). Rather than between an organization and a single customer, it refers to a business that is led by an organization. This is as opposed to business to customer (B2C) and business to government (B2G).

B2C
The site following the B2B plan of action will offer its goods to a halfway buyer who, at that time, sells them to the last client. For example, a distributor submits a request from an organization's website and, after receiving the transfer, offers the final result to the customer who comes to buy the product at the distributor's retail outlet. Examples of B2B are IBM, Hewlett Packard HP CISCO and Dell.

REVIEW OF LITERATURE
        A technique has been proposed to estimate the cost of software based on a computer network. It uses ANFIS to make software cost estimation more accurate. The data in use are the following DESHARNAIS data set from PROMISE Software Engineering Repository. In terms of MAE, correlation coefficients and efficiency, the proposed model performance was analyzed. RMSE. The ANFIS model with an RMSE value of 780.97 was better than the regression model. Against 3007.05 of the regression model. (2016) Artificial intelligence in robotics. Based on the KNN method, a new technique for plagiarism has been suggested. Clustering the string and matching words with neighbors is done by this method. The number of the string matched in the comparison files is calculated by a counter. In the first place, this file compares to an existing set of files. In the case of self-driving cars, a part of fundamental leadership is structured on these lines.
        Artificial Intelligence has become a major topic of conversation in this rapidly developing age. and discussed. AI's potential to change the way we live and work has been demonstrated in different sectors. According to John Mc Carthy, artificial intelligence AI is a science and a technique for creating intelligent machines, in particular intelligent computer programs and applications that can work and think like humansMcCarthy, 2007.Simmons et al. 2008, who argued that artificial intelligence is an

area of research, applications and instructions for programming computers to do things which human beings consider intelligent, were other experts also expressing their opinions on AI. In the meantime, artificial intelligence is defined by Rich and Night (1991) as the study of how computers can do things that humans can do.

E-commerce

According to Kotler 2009, E-Commerce is defined as companies or sites that offer and sell to facilitate the quality of products and services that can be found on the internet. Then E-commerce will lead to the purchase and marketing of products online. E-Purchasing means that companies decide to buy goods, services and information from various online suppliers. E-Marketing describes the company's efforts to inform customers, communicate, promote and sell products and details through the Internet.

E-commerce began to emerge in the 1990s, thanks to an initiative to change, in Pratama (2015) The concept of buying and selling transactions and payments through traditional methods computer-based electronic digital forms and internet networks.

1. In 1998, Kim and Moon argued that e-commerce is the process by which information is delivered, Products, services and payment processes through telephone lines, internet connections or other digital means.

2. In 2002, Baurakis, Kourakis, and Migdalas argued that e-commerce was a form of trade. Through the Internet network, goods and information are delivered.

3. Quayle, in 2002, also laid down a definition of eshop. e-Commerce is a form of technology Data exchange or electronic data interchange which involves buyers and sellers through the use of EDI On the Internet network, mobile phones, e-mail, and mobile connected devices.

 E-CommerceB2B is a type of business similar to B2C, following characteristics:

1. Business people with one another have business interests that are interconnected and interdependent.

2. There is a clear business bond between one party and another with a certain period of work contract.

3. B2B actors work professionally and use promotions through the company website (online), Presentation through exhibitions and presentations by providing direct offers Supply Chain Management).

Micro Small and Medium Enterprise (MSME):

According to Purba's research in 2019, Micro, Small and Medium Enterprises are a small-scale Independent Community. Economic activities that involve community groups, families or individuals in the management of them. Micro, small and medium sized enterprises are a type of enterprise that only has a limited market scope with limited human resources but which is managed solely by its owner Simmons et al., 2008. In the meantime, the World Bank has its own definition of micro, small and medium sized enterprises, where the emphasis is placed on two of the three criteria that must be met, namely employee strength, asset size or annual salesDas, 2017).
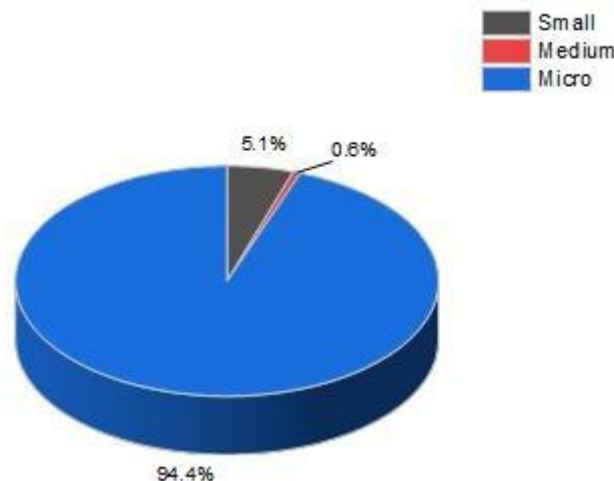
Fig 1. Criteria of MSME based on Law No 20/2008

Research Methodology

1. The study's an inquiry in nature. The researcher has explored Various studies on artificial intelligence and electronic commerce.
2. Find out how artificial intelligence affects the e-commerce industry.
3. Secondary data from different databases are used to make this study. for example, research articles, Google scholars, websites, magazines and so on.

Research Design

Philosophy of research is based on positivism. Positivism, like generalizations, deals with an observable societal reality that produces law. In this study, the philosophy is based on an existing theory of hypothesis development. In addition, this method is employed for data collection and analysis in the study because it focuses on measuring and quantifying information.Quantitative practices focus on the quantitative data and provide a coherent approach to assessment of incidences and associations. In addition, the author assessed the validity and reliability of the tools for ensuring the reliability of the data during the study. In view of the fact that the data collected in this study are firsthand, which means that they are collected directly from the respondents, the primary approach is used.

Sample and sampling techniques

Sampling of the purpose is carried out. This method is used for the purpose of targeting a small number of participants to participate in the survey, and their feedback shows the whole population. Purposive sampling, which is a commonly accepted non-probabilistic sample method because the author chose participants on the basis of their studies purpose, The respondents in this study. Only those who bought products from e-Commerce firms were the ones who bought them. Participants have given their consent, in line with ethical guidelines. Thereafter, a questionnaire was sent to them for their answers. There were 220 participants involved in the study. The sample size in the quantitative analysis is greater than 30 and the ideal size for the study is less than 500. Initially, the research instrument had been distributed to 250 e-commerce purchasers and 220 of them replied at an 88% response rate.
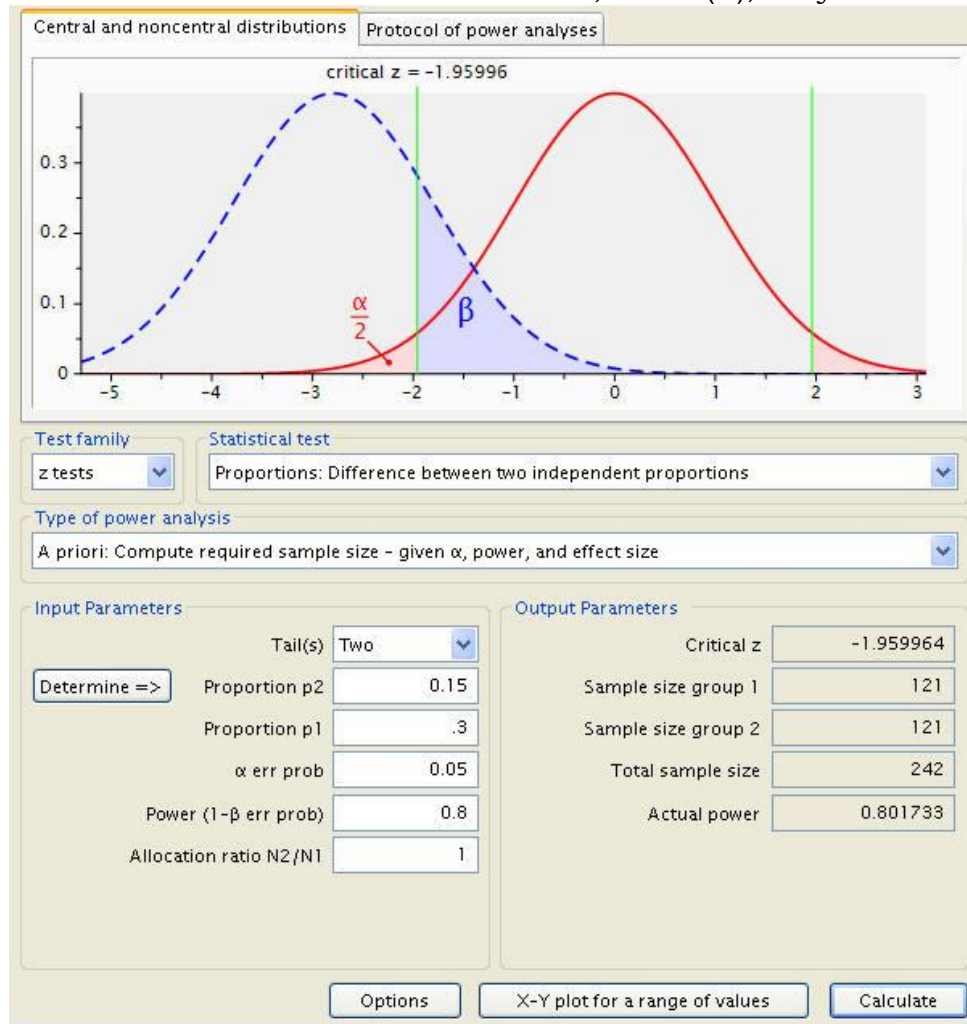
Fig.2.G-Power sample size calculation.

Demographic questions relating to gender, age, experience and education level were included in the first part of the questionnaire. Different constructions derived from the Theoretical Model were used in the second part of this instrument. Based on the studies, the questionnaire has been adjusted. In pilot testing, reliability was achieved for items and constructs with convergent validity, discriminant validity, and coefficient of determination. The initial findings were found to be significant or close to being significant.The outer loading values were used for the reliability of the items, the Cronbach alpha and the composite reliability were used for the reliability of the construction, AVE values were used for the convergent reliability, HTMT and Fornell Licker criteria were used for the discriminant reliability, and the coefficient of determination R square value was used.

Demographic distribution of the respondents

The first section of the gender distribution of the table shows that 63.0% of the respondents are male, and 37.0% are female. The age distribution of respondents is set out in the other part of this table. The table shows that the respondents are aged between 20 and 30 years 14.2%, with 31 to 40 year olds accounting for 26.1% of them. Only 21.5% of respondents are between 40 and 50 years of age, and only 7.2% are over 50 years of age. The experience levels of respondents with regard to the Internet are shown in the third section of the table. shopping. The table shows that 18.8% of respondents experienced less than 2 years, 29.7% experienced 2 to 5 years, and 21.5% experienced more than 5 years. The educational qualification of the respondents is shown in the fourth and last sections of the table. The table shows that 36.6% of the respondents are college graduates, 32.5% are university students and 11% are postgraduates.

Gender	Respondents	Percentage
Male	120	63.0%
Female	88	37.0%
Total	**208**	**100%**

Age Group	Respondents	Percentage
20 – 30	48	14.2%
31 – 40	69	26.1%
41 – 50	59	21.5%
50 + years	8	7.2%
Total	**184**	**69%**
Experience level of the respondents in Online shopping	**Respondents**	**Percentage**
Less than 2years	53	18.8%
2 to 5 years	77	29.7%
More than 5 years	59	21.5%
Total	**189**	**70%**
Educational level	**Respondents**	**Percentage**
Graduate	83	36.9
UG	92	32.5
PG	14	11.0
Total	**189**	**80%**

Table 1. Demographic distribution of the respondents.

R square
 The R square of the model indicates how much variation can be attributed to a dependent variable by independent variables in the model. For example, the active use with the R square value of 0.48 is a dependent variable of the study. The 0.48% variation in active service is due to the independent variables Attitude Use, Behavioral Intention, Perceived Ease of Use, Perceived Usefulness, Subjective Norms, and Trust.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimated
1	.69	.48	.47	7.148

Table 2. R Square

Predictive relevance of the model
        The predictive importance of the model is determined by the Q square value of the model. The power of any model's prediction is determined by the Q square value. The Q Square value of the model must be more than zero in order to conduct a Quantitative Study on Primary Data. For example, the Q square shows the Q square value of the dependent variable active use is 0.307. This indicates the model has been well built.

	SSO	SSE	
Active Use	238	203.576	0.207
Attitude Use	557	358.302	0.202
Behavioral Use	348	213.73	0.184
Perceived Ease of Use	1095	995.082	0.128
Perceived Usefulness	776	338.212	0.400
Subjective Norms	338	338	
Trust	338	338	

Table 2. Q Square

Result

According to the results of the study, trust is a strong predictor of PEU. It finds that more people trust AI in online shopping; there's a higher chance that people will value AI powered web shops and apps. In addition, with the help of these Internet shops, a greater degree of trust is created which will lead to more positive shopping attitudes. The results of our study on attitudes reveal that philosophy does not have a significant impact on the BIU.The use of artificial intelligence in internet shopping has to be more prominent, as it allows consumers to pick the best deals and there is a greater chance that they will buy from AI related apps and web shops. The results of this study show a significant positive and significant impact on the BIU with regard to attitudes towards AI linked apps and web stores. In addition, it proposes that customer attitudes play an important role in increasing the traffic of AI linked apps and web shops.

The perceived usefulness and perception of ease of use have been found to be influenced in a positive way by an objective norm. This study did not approve the hypothesis, which is that trust has a positive effect on perception of usefulness. The positive impact of trust on perceived ease of use has also been supported. It was also found that the perceived ease of use had a beneficial impact on perceptions of usefulness and attitudes to use.

Conclusion

The results of this research are increasing the acceptance of AI in customer experience when shopping online. The study confirmed that, taking into account, PEU, Trust and attitudes, primary factors influence BIU of consumers when using AI based applications and online stores. User-friendliness, as well as the flawless functioning of artificial intelligence powered websites is a key element in market success. The key to consumer acceptance of AI in e-commerce is to build trust. The use of artificial intelligence in e-commerce is expected to grow as a result of the strong positive impact of today's COVID-19 pandemic on online shopping. To meet customer needs and provide a more pleasant shopping experience on the Internet, it is increasingly important to create personalized journeys for customers today.

Given the findings of this study, entrepreneurs building online businesses based on artificial intelligence will take advantage of its support to develop their business models more effectively and efficiently. This study will serve as a strong incentive for young entrepreneurs to develop AI based business models, given that the previous TAM model has been examined in isolation from other aspects of Artificial Intelligence and eCommerce.This study has incorporated both simultaneously in the TAM model to better understand the academician and entrepreneurs and analyze its importance in their businesses. For various developed and developing countries, the results of this study may be generalized. First, the The internet and information technologies have made the world a global village, so there's going to be a lot of similarities between the world's behavior with AI technologies. Second, Pakistan is a developing country with many users of the internet close by. developed countries. Thirdly, COVID-19 has made it possible to buy enough customers from online retailers. It has also been observed that these companies have always adopted policies to take into account the behavior of the world as a whole, so that the behavior of the Pakistani people can be generalized.

REFERENCES

[1] S. Kraus, S. Durst, J.J. Ferreira, P. Veiga, N. Kailer, A. Weinmann, Digital transformation in business and management research: an overview of the current status quo, Int. J. Inf. Manag. 63 (Apr. 2022), 102466, https://doi.org/10.1016/j.ijinfomgt.2021.102466.

[2] K.H. Wang, M. Umar, R. Akram, E. Caglar, Is technological innovation making world 'Greener'? An evidence from changing growth story of China, December, Technol. Forecast. Soc. Change 165 (2021), 120516, https://doi.org/10.1016/j.techfore.2020.120516.

[3] Y. Khan, M.B.M. Su'ud, M.M. Alam, S.F. Ahmad, A.Y.A.B. Ahmad (Ayassrah, N. Khan, Application of internet of things (IoT) in sustainable supply chain management, Dec, Sustainability 15 (1) (2022) 694, https://doi.org/10.3390/su15010694.

[4] A.D. Pizzo, T. Kunkel, G.J. Jones, B.J. Baker, D.C. Funk, The strategic advantage of mature-stage firms: digitalization and the diversification of professional sport into esports, J. Bus. Res. 139 (Feb. 2022) 257–266, https://doi.org/10.1016/j.jbusres.2021.09.057.

[5] S. Yuan, H.O. Musibau, S.Y. Genç, R. Shaheen, A. Ameen, Z. Tan, Digitalization of economy is the key factor behind fourth industrial revolution: how G7 countries are overcoming with the financing issues?, December 2020, Technol. Forecast. Soc. Change 165 (2021), 120533, https://doi.org/10.1016/j. Techfore.2020.120533.

[6] L. da Chen, M.L. Gillenson, D.L. Sherrell, Enticing online consumers: an extended technology acceptance perspective, Inf. Manag. 39 (8) (2002) 705–719, https://doi.org/10.1016/S0378-7206(01)00127-6.

[7] J. Hair Jr., G.T. Hult, C. Ringle, M. Sarstedt, A Primer on Partial Least Squares Structural Equation Modeling, PLS-SEM) - Joseph F. Hair, Jr., G. Tomas M. Hult, Christian Ringle, Marko Sarstedt, 2016.

[8] M. Saunders, P. Lewis, A. Tornhill, Research Methods for Business Students, 2007.

[9] G. Ursachi, I.A. Horodnic, A. Zait, How reliable are measurement scales? External factors with indirect influence on reliability estimators, Procedia Econ. Finance 20 (15) (2015) 679–686, https://doi.org/10.1016/s2212-5671(15)00123-9.

[10] D. Kaplan, Structural equation modeling in, Int. Encyclop. Soci. Behav. Sci. 7 (2001) 333–365.

[174] R.M. O'Brien, A caution regarding rules of thumb for variance inflation factors, Qual. Quantity 41 (5) (2007) 673–690, https://doi.org/10.1007/s11135-006- 9018-6.

[11] A. Propheto, D. Kartini, Sucherly, Y.M. Oesman, Marketing performance as implication of brand image mediated by trust, Manag. Sci. Lett. 10 (4) (2020) 741–746, https://doi.org/10.5267/j.msl.2019.10.023.

[12] P. Grover, A.K. Kar, M. Janssen, P.V. Ilavarasan, Perceived usefulness, ease of use and user acceptance of blockchain technology for digital transactions–insights from user-generated content on Twitter, Enterprise Inf. Syst. 13 (6) (2019) 771–800, https://doi.org/10.1080/17517575.2019.1599446.

[13] N. Singh, N. Sinha, How perceived trust mediates merchant's intention to use a mobile wallet technology, J. Retailing Consum. Serv. 52 (June 2019) (2020), 101894, https://doi.org/10.1016/j.jretconser.2019.101894.

[14] K.H. Seo, J.H. Lee, The emergence of service robots at restaurants: integrating trust, perceived risk, and satisfaction, Sustainability 13 (8) (Apr. 2021) 4431, https://doi.org/10.3390/su13084431.

[15] M. Siegrist, L. Luchsinger, A. Bearth, The impact of trust and risk perception on the acceptance of measures to reduce COVID-19 cases, Risk Anal. 41 (5) (May 2021) 787–800, https://doi.org/10.1111/risa.13675.

[16] I. Hromatko, M. Tonkovi´c, and A. Vranic, "Trust in science, perceived vulnerability to disease, and adherence to pharmacological and non-pharmacological COVID-19 recommendations," Front. Psychol., vol. 12, Apr. 2021, doi: 10.3389/fpsyg.2021.664554.

[17]Aws Amazon Lex. 2019. Amazon Lex. Available: https://aws.amazon.com/lex/. Accessed on May 6th, 2019.

[18]Dr. N. Kesavan, "Exports and Imports Stagnation in India During Covid-19- A Review" GIS Business (ISSN: 1430-3663 Vol-15-Issue-4-April-2020).

[19]Dr. D.Paul Dhinakaran, "Customers Delight towards Service Excellence in Indian Overseas Bank Chennai" International Journal of Business Education and Management Studies (IJBEMS), ISSN:2941- 9638, (Vol.3.Issue 1. 2020 (March).

[20]Dr. M. Surekha, "A study on utilization and convenient of credit card" Journal of Positive School Psychology, http://journalppw.com, 2022, Vol. 6, No. 4, 5635–5645.

[21]Dr.M.Rajarajn "Bus Operations of Service Quality in Tamil Nadu State Transport Corporation Limited, Kumbakonam" Asian Journal of Management,(A and V Publication),(ISSN:0976 – 495X), Volume: 4, Issue: 1, May, 2013.

[22] S. Akıl, M.C. Ungan, E-commerce logistics service quality, J. Electron. Commer. Org. 20 (1) (Jan. 2022) 1–19, https://doi.org/10.4018/JECO.292473.