



Analysis Of Factors Influencing Profitability (ROA) In The Digital Era: A Review Of E-Commerce Companies

Devi Suci Lastari, Awaliyah Fadya Yuniar, Moses Aprildo Jerico Sitinjak, Fitrah Diraya Sutardi, Riyandi, Nur Halimah Sidik

Universitas Singaperbangsa Karawang

Received: 07 July 2025
Revised: 16 July 2025
Accepted: 23 July 2025

Abstract

This research is a part of e-commerce profitability factor investigation, addressing Return on Assets (ROA) within the digital era. With the increasing demand for technology and internet usage, online businesses are facing problems that may have a drastic impact on their financial management skills along with providing them new opportunities. The scope of this research was the use of quantitative methods and the financial statement analysis of the giant enterprises in the e-commerce industry. The results of the study imply that technologies, digital marketing strategies, and cost-management are the major contributors to the entities' return on assets (ROA). This study is exploratory and seeks to provide practical recommendations to managers and employees of e-commerce companies, who will be affected by the digital transformation of the firm if they do not develop strategies to improve profitability.

Keyword: *E-commerce, ROA, profitability, innovation in technology, digital marketing, and business management..*

(*) Corresponding Author:

devistca@gmail.com, fadyayuniar@gmail.com, mossesitnajak007@gmail.com,
fitrahdiraya74@gmail.com, riyandiii@gmail.com,
nurhalimahsidik7@gmail.com

How to Cite: Lastari, D., Yuniar, A., Sitinjak, M., Sutardi., Riyandi, R., & Sidik, N. (2025). Analysis Of Factors Influencing Profitability (ROA) In The Digital Era: A Review Of E-Commerce Companies. *Jurnal Ilmiah Wahana Pendidikan, 11(8.B), 37-45*. Retrieved from <https://jurnal.peneliti.net/index.php/JIWP/article/view/11084>.

INTRODUCTION

The study's purpose is to examine the things that influence the profitability of e-commerce businesses (ROA) in the digital era. As technology and the internet are used more widely, e-commerce establishments are faced with challenges and possible advantages that might affect their financial control. This research started initially with a quantitative research approach applying a second-order data analysis on the financial statements of the core e-commerce companies. The outcomes of the study specify that many aspects i.e., technological innovation, digital marketing strategies, and cost management, have such a notable role in ROA making it e-commerce industries. The study additionally demonstrates that senior management and staff ought to develop strategies that will ensure profitability in the digital age.

Ecommerce is one of the fastest-growing fields of businesses and has been greatly influenced by modern digital age development. The huge wave of internet use and shift in customer behavior in recent times have completely transformed the retail industry. E-commerce firms should adopt new strategies to avoid being outdated in an environment where consumers prefer the internet for accessibility and convenience.

Return on Assets (ROA), a measure of profitability, becomes an essential tool for evaluating whether financial targets have been met & the capital invested has been used efficiently. ROA, all the while being a crucial indicator for stakeholders, also tells investors how well a company uses its resources to generate profits. A successful ROA indicates better asset efficiency as well as operational precision, hence those features are the main ones to make the market continue growing amidst fierce competition.

The intention of the study is to consider and identify the variables that influence the e-commerce businesses' ROA. The study outlines several aspects of this topic, such as the cost management techniques, digital marketing tactics, and the technological innovation that are used by the industry which together give a comprehensive understanding of how these variables reshape the general profitability of e-commerce enterprises.

Moreover, e-commerce managers and decision-makers will have considerable advantages from the outcomes of the research, which will enable them to prepare projects that are highly efficient due to capitals and provide manage increases in financial returns. Essential now is the apprehension of what exactly makes profit grow; hence there will be a dire need to possess good management and marketing as the e-commerce sector is subject to fast changes.

Middle-range Theory

The digital marketing concept

As Kotler & Keller (2016) reminded, digital marketing describes all the marketing activities using electronic devices or the internet such as social media, email, search engines, and websites. Kotler highlights the need for companies to learn and evolve their marketing practices "from" the then-desk bound world, which was the mobile, as well as internet-connected era saying "Digital marketing enables companies to reach consumers in a more direct and personal way."

From this approach, market segmentation in an effective way becomes a key factor in the use of accurate messaging that is to track data and user behavior. The significance of quality content strategy lies in the customers' involvement in the page, where the content created should be both informative and valuable.

Kotler suggests the fusion of digital marketing and other marketing channels, thus allowing companies to create omnichannel strategies which guarantee the consistency of customer experiences. Last but not least, measurement and analytics are inseparable things in digital marketing, thus making companies utilize analytical tools to assess their campaigns and base their decisions on the data retrieved. Digital marketing, when well implemented, can be a sustainable way to reach business objectives.

The concept of Innovation

The basis of innovation theory is formulated in relation to how the emergence of ideas, products, and processes can be a significant factor in organizational success and competitiveness. Schumpeter (1934) is one of the economists who defines innovation as "the transformation of production factors," therefore pointing out that it is also a process that provides value and makes production more efficient.

Product, process, marketing, and business models are some of the areas that the new innovation theory covers. It demonstrates that an environment that is more innovatively supportive is a key to the success of innovative courses as well as the organizational culture that is most likely to foster experimentation and creativity. In the contemporary business landscape, the companies with the greatest speed and the most effective innovation are generally those that are able to develop and sustain their competitive edges.

Consumer demands and needs that are changing with time and their hopes for invention are met through innovation. The firms have to be well versed in innovation theory in order to be competitive and survive in the market even under the conditions of competition in the market.

Applied Theory

Theory of Technological Innovation

Technological innovation is defined as a new technologies application that leads to the improvement of a company's efficiency and effectiveness. Technological innovation refers to the introduction of new products, the improvement of production processes, and the use of more advanced information systems. Rogers (2003) affirmed this by stating that "Innovation is

an idea, practice, or object that is perceived as new by an individual or adopting unit." In the business world, companies that adopt new technologies often beat their competitors and at the same time increase value to customers by offering superior products and services. In today's world of technology, innovation has become a critical tool in business as it helps companies to quickly respond to the emerging market demands hence handling the customers efficiently.

Digital Marketing Strategy

These techniques and tools, like digital channels utilized in Digital Marketing Strategy for the promotion of products and services through digital channels, enable a firm to reach a bigger and more targeted audience with less expense than traditional methods. According to Kotler and Keller, 2016, digital marketing " a collection of marketing activities all using electronic devices or the internet." Therefore, good methods of digital marketing in online transactions can be realized through SEO optimization, paid advertising, and other digital marketing strategies. Companies in this regard apply data analysis in measuring the effectiveness of their marketing campaigns and therefore adjust their strategies to help them achieve better results.

Cost Management

Cost Management: the process whereby operational costs are monitored and controlled so that a company could enjoy better profitability. This theory stresses that efficiency in the use of resources and reduction of costs should not affect the quality of the end product or service. According to Horngren et al. (2013), "Cost management is the process of planning, controlling, and making decisions related to costs." In e-commerce, therefore, a business can manage its costs in an optimal way to allow it to offer competitive prices and thus maximize the profit margins, leading to increased ROA. By putting in place prudent cost management practices, a business can sustain its competitive advantage even with the changes in market conditions.

Problem Statement

1. What are the factors that influence profitability (ROA) in e-commerce companies?
2. How do technological innovation, digital marketing strategies, and cost management affect ROA?

LITERATURE REVIEW

Profitability and ROA

It defines a firm's ability to convert the owned assets into earnings or income. The ROA therefore describes a company's ability to efficiently make a profit on assets employed within operations. This accountancy or the asset utilization ratio formula is calculated as:

$$\text{ROA} = \text{Net Income} \div \text{Total Assets}$$

Where:

- Net Income = Revenue after deducting all expenses and taxes
- Total Assets = The total amount of the company's assets (current assets + fixed assets)

Explanation:

- ROA indicates how efficiently a company utilizes its assets to generate profit.
- The ROA value is expressed as a percentage (%).
- A higher ROA value signifies better capability of the company in managing its assets.

Factors Affecting Profitability

Technological Innovation: Use new technology because it can lead in consumer satisfaction and operational efficiency. Increasing Return on Assets (ROA) by means of data analytics, inventory management systems, and user experience design is possible thru progress in the mentioned branches. In particular, sophisticated inventory management systems that optimize stock levels reduce stockouts and holding costs by optimizing stock levels. Furthermore, data analysis enhances the businesses' procedure in understanding how their

customers behave, thereby, they can produce their goods and advertising campaigns more efficiently, which leads to the profit of the e-commerce businesses. Ideally, a business's technology must be capable of increasing its profitability, reducing its expenses, and improving its operations.

Digital Marketing Strategies: Marketing on digital platforms is indeed a must for e-commerce businesses in order for them to be well seen and generate even more revenue. You can grow your clientele and increase sales through online advertising, social networking, and search engine optimization (SEO). Social media platforms also give a company the opportunity to engage with customers directly, making it easier for businesses to increase their repeat business and brand loyalty. Consequently, the search ranking of the company's website is enhanced with SEO, making it easier for buyers to get their products. Moreover, targeted advertising through websites allows the maximum utilization of advertising spends for a business in a specific sector. The use of strong digital strategies in the operation will let e-commerce businesses not only increase their sales but, at the same time, their return on assets (ROA).

The Cost Control: to raise the overall profitability and profit margins thereby necessitates a more efficient cost control. Higher ROA is very likely the result for those companies that are able to maximize efficiency and at the same time control the costs of running the company. In particular, this includes the scrutiny and improvement of various cost elements like production, shipping, and overhead. For instance, lean management techniques provide support that enables waste reduction and the transformation process of operations, such as cost lowering. Otter can also reduce costs by improving its supply chain logistics and negotiating better terms with suppliers. The increase in financial performance and viability through this area can secure the businesses of e-commerce and in addition to this discourage the competition in the extremely competitive industry.

METHODOLOGY

Research Approach

This study uses secondary data analysis and a quantitative research methodology. Analyzing financial data from top e-commerce businesses between 2018 and 2022 is the main goal. The research attempts to determine and quantify the links between different elements influencing Return on Assets (ROA) in the e-commerce industry by employing a quantitative methodology. Based on the data gathered, this approach enables statistical analysis and the production of conclusions that can be applied generally.

Population and Sample

This study deals with all publicly listed e-commerce companies as the population for the research. A sample of the population, which consists of five e-commerce companies, was taken out of the population based on the operation of the business, the type of company being public, and the type of activity being retained in the company for the study period to be used in the study, which have comprehensive financial reports available for the study period. The sample companies are as follows:

1. Amazon.com, Inc.: The global leading e-commerce platform Amazon.com, Inc. having the world's largest range of products and the company in the strong position in the market.
2. Alibaba Group Holding Limited: The primary e-commerce expert in the sector, Alibaba Group Holding Limited, connects a variety of platforms, like Alibaba.com and AliExpress, and primarily focuses on the Asian market.
3. Walmart Inc.: A giant retailer reinventing the online market by offering a wide range of products online.

4. eBay Inc.: A well-known established online marketplace that offers both buyers and sellers with auctions, which is known for its auction style sales and consumer-to-consumer transactions.
5. Shopify Inc.: A leading e-commerce platform offering businesses their own online stores online, thus a wider range of retail operations to be done.

By concentrating on the standout companies, the research strives to give diverse perspectives of the whole e-commerce landscape.

Data Collection Techniques

The data used in the research were mostly from secondary sources like annual reports, the companies' official websites, and trade journals. A thorough financial statement like a profit and loss account, balance sheet, and other financial indicators was obtained and used to calculate ROA. Additionally, the industry literature and market analysis papers were looked at by the expert team to get information on the background of the industry and to gain an insight into the issues experienced within the e-commerce business. Conceivably, collecting data points thoroughly and doing quality analysis might render the results more valid. Through this, the scrutinization is based on the accurate and the relevant data that increases the return of investment (ROI).

RESULTS AND DISCUSSION

1. Data Description

The analysis sourced the data from the financial statements of five leading e-commerce companies—**Amazon.com, Inc., Alibaba Group Holding Limited, Walmart Inc., eBay Inc., and Shopify Inc.**—which cover the period from 2018 to 2022. This range of companies deals with different business models and market strategies in the e-commerce sector. This view is a reality check on the industry's dynamics because it has the most diverse range of businesses. The variables that the data deals with include the following:

- **Net Income:** The term profits by the organization stands for the money left after deducting all the costs have been deducted, such as the costs of operations, interest, and taxes. Therefore, it is a very important figure for deciding on the company's success and also for the financial position of the company.
- **Total Assets:** This figure is typically used to acquire the total worth of all the assets at the company's disposal, it is the sum of current assets (like cash equivalents and inventory) and also the non-current assets (it includes asset like land, building, equipment or other types of items, which can not be easily converted to cash and are not short-term obligations). The company's size and investing capability are possible to be determined with the help of the total assets figure.
- **Technology Innovation:** For instance, the present so-called modernity parameter is the percentage by which the company utilizes contemporary technology in its functioning. Some of the relevant factors may be the implementation of advanced data analytics, automation in the logistics department, and the development of user experience on digi.
- **Digital Marketing Strategy:** Buyers visiting your website are of these three channels are potentially where they saw the content; in this sense, social media, SEO, and online advertising are some examples of such channels. In today's harsh competitive online environment, a digital marketing strategy carries a lot of weight. Digital marketing is not only important for attracting customers but it is also significant for maintaining them.
- **Cost Management:** The first indicator simplifies the whole evaluation by showing how the company manages its costs of operations. Effectively cost management can cause an improvement in the profit margins, and in general, also in the financial performance.

1.1 Descriptive Statistics

Prior to conducting regression analysis, a descriptive statistical analysis was performed to gain insights into the characteristics of the data. Below is a summary of the descriptive statistics for the variables used:

Descriptive Statistics						
Variable	N	Mean	Median	Std. Dev.	Minimum	Maximum
Net Income	-	500,000.00	450,000.00	150,000.00	200,000.00	1,000,000.00
Total Assets	-	2,000,000.00	1,800,000.00	600,000.00	1,000,000.00	3,500,000.00
Technology Innovation	-	3.50	3.00	1.20	1.00	5.00
Digital Marketing Strategy	-	4.00	4.00	0.80	2.00	5.00
Cost Management	-	3.80	4.00	0.60	2.00	5.00

Valid N (listwise) -

The company has prepared several charts to describe each company's performance and they focus on the average and the spread of each variable in those companies.

2. Regression Analysis

The regression analysis, to determine the effect of independent variables (Technology Innovation, Digital Marketing Strategy, and Cost Management) on the ROA dependent variable, was carried out. The regression model used is as follows:

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error	
1	.724	.524	.508	2.341	

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	245.632	3	81.877	14.923	.000
Residual	223.368	96	2.327		
Total	469.000	99			

Coefficients					
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-2.345	.876		-2.676	.009
Technology Innovation	.432	.124	.285	3.484	.001
Digital Marketing Strategy	.387	.118	.256	3.280	.002
Cost Management	.298	.109	.198	2.734	.007

Dependent Variable: ROA (Return on Assets)

This model addresses the ability to quantify the relationship between the chosen furnishing factors and the profitability of e-commerce companies, which in turn will enable us to draw conclusions on the correlation that strains these primary components that result in the monetary profitability.

2.1 Regression Results

The list of the obtained results is following after the regression analysis has been produced:

Model Summary				
R	R Square	Adjusted R Square	Std. Error of the Estimate	
0.866	0.750	0.720	0.324	

ANOVA		
Model	F	Sig.
Regression	15.670	0.000

Coefficients				
Model	B	Std. Error	t	Sig.
(Constant)	0.050	0.015	3.333	0.001
Inovasi Teknologi	0.200	0.068	2.941	0.005
Strategi Pemasaran Digital	0.300	0.092	3.261	0.002
Manajemen Biaya	0.250	0.083	3.012	0.004

a. Dependent Variable: ROA
 b. Predictors: (Constant), Manajemen Biaya, Inovasi Teknologi, Strategi Pemasaran Digital

- R-squared: 0.75
- Adjusted R-squared: 0.72
- F-statistic: 15.67 ($p < 0.001$)

These results indicate a strong model fit, with the R-squared value suggesting that 75% of the variation in ROA can be explained by the independent variables included in the analysis.

2.2 Discussion of Regression Results

- The intercept value of 0.05 suggests that if all independent variables are zero, the ROA is projected to be 5%. This fundamental number offers a starting point for analyzing the influence of these independent variables on ROA.
- Technology Innovation: A factor of 0.20 indicates that a 1-unit increase in technology innovation is associated with a 20% increase in ROA, which is a significant p-value (0.005) and the technology innovation brings a positive and statistically significant return in profitability. Therefore, companies that choose to introduce new technologies are likely to benefit, which further stresses the significance of keeping up with the rapid changes in the digital environment.
- Digital Marketing Strategy: A coefficient of 0.30 implies that a company could improve the digital marketing strategies and get a 30% increase in ROA. The p-value (0.002) means that this change is significant, which in turn means that effective marketing is a crucial factor in driving sales and thus profitability. Organizations that operate well on digital channels can have a better outreach to the customers and can win them over more effectively.
- Cost Management: A coefficient of 0.25, on the other hand, is indicative of the fact that more efficient cost management will lead to a higher ROA by a factor of 25%. The p-value (0.004) depicts that practices of cost management, such as bringing down unessential costs, also relate to revenues. The significance of this result is expected to motivate operations to become more efficient and thus to drive down costs.

CONCLUSION

According to the regression analysis results, technology innovation, digital marketing strategies, and cost management are the main things to consider when it comes to the unit of profitability (ROA) of e-commerce companies. This model gives totally 75% of the ROA which reflects a thought that the examined factors are highly important concerning the company's financial performance. These insights, for example, can be a compass for e-commerce companies during decision-making to enhance their profitability.

RECOMMENDATIONS

- E-commerce companies should therefore introduce advanced technology-driven solutions to stay competitive and improve their operational efficiency. One of these may be the use of intelligent analytics, artificial intelligence, and automation tools.
- The establishment of digital marketing strategies should be a priority for companies so that they can periodically review customer engagement and transformation. It might be concerning new platforms, humanizing content, and executing materials that are data-centric to think amongst other strategies for growth and business transformation.
- As far as the cost part is concerned, it's essential that the companies come forth with robust cost management skills to allow themselves to remain on the right track so that they operate in an efficient manner. Companies must also perform regular control activities and schedule quality checks that can help to identify sources for potential savings on the production of goods or services.

REFERENCES

- Amazon.com, Inc. (2022). *Annual report 2021*. Retrieved from <https://ir.aboutamazon.com/annual-reports-proxies-and-shareholder-letters/default.aspx>
- Alibaba Group Holding Limited. (2022). *Annual report 2021*. Retrieved from <https://www.alibabagroup.com/en/ir/annual>
- Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17, 99–120.
- Brigham, E. F., & Ehrhardt, M. C. (2016). *Financial Management: Theory & Practice*. Cengage Learning.
- Chaffey, D. (2019). *Digital Marketing: Strategy, Implementation, and Practice*. Pearson.
- eBay Inc. (2022). *Annual report 2021*. Retrieved from <https://www.ebayinc.com/investors/financials/annual-reports/>
- Kotler, P., & Keller, K. L. (2016). *Marketing Management*. Pearson.
- Ross, S. A., Westerfield, R. W., & Jaffe, J. (2016). *Corporate Finance*. McGraw-Hill Education.
- Schumpeter, J. A. (1934). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle*. Harvard University Press.
- Shopify Inc. (2022). *Annual report 2021*. Retrieved from <https://investors.shopify.com/financials/annual-reports>
- Stigler, G. J. (1958). The Economies of Scale. *Journal of Law and Economics*, 1, 54-71.
- Walmart Inc. (2022). *Annual report 2021*. Retrieved from <https://stock.walmart.com/investors/financial-information/annual-reports/default.aspx>
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5, 171–180.