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Analysing the Driving Forces of Market Competition in EdTech

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Abstract

Purpose: The purpose of this study is to conduct a comprehensive analysis of the driving forces of market competition in the EdTech industry. The primary objective is to identify the key factors that determine the competitive landscape of this industry and to provide insights that can inform strategic decision-making for companies operating in this space. Specifically, the study aims to compare the competitive advantages and disadvantages of different EdTech companies, and to test the hypothesis that companies with more investment in marketing and advertising than their competitors will have a larger market share.

Research Design/Methodology/Approach: To achieve these objectives, the study will employ a range of research methods, including market research surveys, interviews with industry experts, and data analysis of market trends and competitor behaviour. The study will also review relevant literature and case studies of successful EdTech companies to identify best practices and potential areas of differentiation. Here we have used regression to depict the degree of relation between the Hypotheses.

Findings: The findings of this study will be of value to EdTech companies, investors, and other stakeholders in the industry who are interested in understanding the driving forces of competition and the factors that determine success in this space. By providing insights into the competitive landscape of the EdTech industry, this study aims to help companies make informed strategic decisions that can improve their chances of success and help them gain market share.

Limitations: There are several limitations to this study that should be taken into consideration when interpreting the results. Firstly, the study only focused on a limited number of EdTech companies, and the findings may not be generalizable to the broader EdTech industry. Secondly, the study relied on publicly available data, which may not be completely accurate or up-to-date. Another limitation is the subjective nature of certain measures used in the study, such as the assessment of a company's competitive advantage. Additionally, the study did not consider the impact of macro-level economic or political factors on the competitive landscape of the EdTech industry, which could have significant implications for the findings.

Practical Implications: The findings of this study have practical implications for companies operating in the EdTech industry. First, companies should focus on developing innovative products and services that meet the evolving needs of their target markets. They should also invest in effective marketing and advertising strategies

to differentiate themselves from competitors and increase their market share. Second, companies should carefully consider their business models and pricing strategies, as well as the potential competitive advantages and disadvantages of each approach. Finally, companies should monitor market trends and adapt to changes quickly to maintain their competitive edge. By applying the insights gained from this study, companies can make informed strategic decisions and remain competitive in the fast-paced and constantly evolving EdTech industry

Social Implications (Positive and Negative): The driving forces of market competition in EdTech have significant social implications. The growth of the EdTech industry has opened up opportunities for people to access education and training that was previously unavailable

or inaccessible. This has the potential to level the playing field and reduce educational inequalities. Additionally, the convenience and flexibility of online learning can enable learners to balance their education with work and family responsibilities, and provide them with the opportunity to learn at their own pace. However, there are also potential negative social implications of the EdTech industry. For example, it may exacerbate the digital divide if people with limited access to technology or the internet are unable to participate in online learning. Furthermore, there are concerns about the quality of online learning and the effectiveness of replacing traditional classroom education with technology-based solutions. The EdTech industry also has the potential to displace teachers and other education professionals, leading to job losses and a reduction in the quality of education.

Keywords: EdTech, Marketing, Advertising, Competitive Advantage, Market Share Paper Type: Research Paper

Introduction

The field of education has been transformed by technological advancements in recent years, and the emergence of EdTech companies has created a highly competitive market. As more students and educators turn to online platforms for learning and collaboration, the demand for innovative EdTech solutions continues to grow. To remain competitive in this dynamic industry, it is important for companies to understand the driving forces of market competition and identify strategies to differentiate themselves from competitors. According to a report by HolonIQ (2021), the global EdTech market is expected to reach $404 billion by 2025, growing at a compound annual growth rate (CAGR) of 18.1%. This growth is fuelled by several factors, including the increasing demand for digital learning solutions, the need for personalized and adaptive learning experiences, and the adoption of new technologies such as artificial intelligence and virtual reality. Previous research has explored various aspects of the EdTech market, including market segmentation, business models, and technology adoption. For example, a study by Li and Irani (2018) found that the success of EdTech companies is closely linked to their ability to develop innovative products and services that meet the specific needs of different user groups. Another study by Kim and Lee (2019) examined the impact of business model innovation on the performance of EdTech startups. While these

studies provide valuable insights into the EdTech market, there is still a need for research that specifically analyses the driving forces of market competition in this industry. This study aims to address this gap by comparing the competitive advantages and disadvantages of different EdTech companies and identifying the key factors that drive market competition. By conducting a comprehensive analysis of these factors, this study will provide insights and recommendations for companies operating in the EdTech industry.

Significance of the Study

the significance of this study lies in its potential to provide valuable insights for companies, policymakers, educators, and investors in the EdTech industry. By gaining insights into the factors that drive market competition, policymakers can develop regulations and policies that support the growth of the EdTech industry. Educators can use the findings to inform their decisions about which EdTech products to use in their classrooms, while investors can use the insights to make informed investment decisions in the industry. the significance of this study lies in its potential to provide valuable insights for companies, policymakers, educators, and investors in the EdTech industry. The study's findings can help to improve the competitiveness and innovation of the EdTech industry, ultimately contributing to the growth and development of education as a whole.

Literature Review

Research Title: Organizing Competitor Analysis Systems Author/s: Sumantra Ghoshal, D. Eleanor Westney (1993) Journal: Strategic Management Journal, Vol 12, Issue 1, pp. 17-31 Review: The paper "Organizing competitor analysis systems" by Sumantra Ghoshal and D. Eleanor Westney provides a framework for analysing competitors in a dynamic market environment. The authors argue that traditional approaches to competitor analysis, which focus on gathering data about the external environment, are no longer sufficient in today's rapidly changing markets. Instead, the authors propose a more dynamic approach that involves analysing the underlying assumptions and mental models of competitors. This approach involves understanding the ways in which competitors think about the market and how they make decisions, as well as identifying the key drivers of competition in the market. The authors provide a detailed framework for organizing competitor analysis systems, which includes several key components. These components include the identification of key drivers of competition, the analysis of competitor strategies and tactics, the development of a mental model of competitors, and the use of scenario planning to anticipate and prepare for changes in the market environment. Overall, the paper emphasizes the importance of taking a more dynamic and strategic approach to competitor analysis, and provides a detailed framework for implementing such an approach. The authors argue that this approach can help firms better understand their competitors and make more informed strategic decisions in rapidly changing market environments.

Research Title: Competitor Analysis Practices of US Companies: An Empirical Investigation Author/s: Ram Subramanian, Samir T. IsHak (1998) Journal: Management International
Review, Vol 38, Issue 1, pp. 7-23 Review: Competitor Analysis Practices of US Companies: An Empirical Investigation" by Ram Subramanian and Samir T. IsHak is a research paper that investigates the practices of competitor analysis in companies in the United States. The authors conducted a survey of 207 companies from different industries and analyzed the results to determine the extent to which companies engage in competitor analysis and the specific practices they use. The study found that most companies engage in competitor analysis to some degree, with over 90% of respondents indicating that they conduct some form of competitor analysis. The most common practices used by companies include analysing competitor financial statements, tracking competitor product offerings, and monitoring competitor marketing and advertising activities. The authors also found that the extent to which companies engage in competitor analysis varies depending on their industry and size. Companies in more competitive industries and larger companies tend to engage in more comprehensive competitor analysis practices. The study also revealed some challenges that companies face in conducting competitor analysis, including the lack of resources and difficulty in obtaining reliable and relevant data. Overall, the paper highlights the importance of competitor analysis in the business world and provides insights into the specific practices used by companies in the United States.

Research Title: Competitor identification and competitor analysis: a broad-based managerial approach Author/s: Mark Bergen, Margaret A. Peteraf (2002) Journal: Managerial and Decision Economics, Vol 23, Issue 4-5, pp. 157-169 Review: "Competitor Identification and Competitor Analysis: A Broad-Based Managerial Approach" by Mark Bergen and Margaret A. Peteraf is a research paper that explores the importance of competitor analysis for businesses. The authors argue that competitor analysis is an essential component of strategic management and that firms should take a broad-based approach to identifying and analysing competitors. The paper begins by discussing the various methods that firms can use to identify their competitors, including industry analysis, customer analysis, and product-market analysis. The authors emphasize the importance of taking a comprehensive approach to competitor identification, rather than focusing solely on direct competitors. The authors then discuss the different types of competitor analysis, including strategic group analysis, market commonality and resource similarity analysis, and competitor intelligence gathering. The authors argue that firms should use a combination of these methods to gain a comprehensive understanding of their competitors' strategies, strengths, and weaknesses. The paper also highlights the challenges that firms face in conducting competitor analysis, including the difficulty in obtaining accurate and relevant information about competitors and the need to balance the costs and benefits of competitor analysis. Overall, the paper emphasizes the importance of competitor analysis in strategic management and provides a framework for firms to identify and analyse their competitors in a comprehensive and effective manner.

Research Title: Competitor Analysis and Interfirm Rivalry: Toward A Theoretical Integration Author/s: Ming-Jer Chen (1996) Journal: Academy of Management, Vol 21, Issue 1 Review: "Competitor Analysis and Interfirm Rivalry: Toward A Theoretical Integration" by Ming-Jer Chen is a paper that proposes a theoretical framework for understanding competitor analysis and interfirm rivalry. The author argues that competitor analysis should be viewed as a

dynamic process rather than a static one, and that the relationship between competitors should be seen as a key factor in shaping interfirm rivalry. The paper begins by reviewing existing literature on competitor analysis and interfirm rivalry and identifying the limitations of current approaches. The author then proposes a theoretical framework based on the resource-based view of the firm and the social exchange theory. This framework emphasizes the importance of understanding the resources and capabilities of both the focal firm and its competitors, as well as the social exchange relationships between them. The paper then outlines a set of propositions based on the theoretical framework, including the importance of identifying key resources and capabilities of competitors, the role of social exchange relationships in shaping interfirm rivalry, and the importance of strategic action and response in maintaining a competitive advantage. Overall, the paper provides a comprehensive and theoretically grounded approach to competitor analysis and interfirm rivalry, highlighting the importance of dynamic and relational perspectives in understanding competitive dynamics.

Research Title: Competitor analysis: Some practical approaches Author/s: John J. Brock (1984) Journal: Industrial Marketing Management, Vol 13, Issue 4, pp. 225-231 Review: John J. Brock discusses the practical approaches to conducting competitor analysis in industrial marketing. The author argues that in order for firms to be successful in the market, they need to have a deep understanding of their competitors and their competitive environment. The paper provides an overview of the various methods and techniques that can be used to conduct competitor analysis, including secondary data analysis, primary data collection, and benchmarking. The author emphasizes the importance of using multiple sources of information to gain a comprehensive understanding of the competition. This includes gathering data on competitors' products, pricing, distribution channels, marketing strategies, and customer perceptions. Brock also provides some practical tips for firms conducting competitor analysis, such as being aware of the limitations of the data, avoiding over-reliance on a single source of information, and ensuring that the analysis is relevant to the firm's strategic goals. Overall, the paper provides a useful guide for firms looking to improve their competitor analysis practices and gain a competitive edge in the market.

Research Title: Competitor Analysis in Strategic Management: Is it a Worthwhile Managerial Practice in Contemporary Times? Author/s: Alex Yaw Adom, Israel Kofi Nyarko, Gladys Narki Kumi Som (2016) Journal: Journal of Resources Development and Management, Vol 24, Issue 2, pp. 116-127 Review: The paper explores the current status and importance of competitor analysis in strategic management. The authors conducted a review of literature to assess the usefulness of competitor analysis in contemporary times. They found that despite criticisms of the practice, competitor analysis remains a relevant and valuable tool for strategic management. The study suggests that competitor analysis helps firms understand their market position, identify threats and opportunities, and develop effective strategies. The authors provide a practical guide on how to conduct competitor analysis and emphasize the importance of integrating competitor analysis into the overall strategic planning process. The authors also identify some challenges in conducting effective competitor analysis, such as information overload and difficulty in obtaining reliable data. They suggest that managers should use a combination of qualitative and quantitative methods to analyze competitors and

constantly update their analysis to stay current with market trends. Overall, the paper provides a comprehensive overview of the importance and practicality of competitor analysis in contemporary strategic management. It offers insights on how to conduct effective competitor analysis and highlights the benefits of integrating this practice into the overall strategic planning process.

Research Title: Competitor Analysis Author/s: John A. Czepiel, Roger A. Kerin (2012) Journal: Handbook of Marketing Strategy Review: The chapter titled "Competitor Analysis" in the Handbook of Marketing Strategy edited by Venkatesh Shankar and Gregory S. Carpenter provides an overview of the importance of competitor analysis in marketing strategy. The authors, John A. Czepiel and Roger A. Kerin, discuss the various methods and tools that companies can use to analyze their competitors, including market research, benchmarking, and strategic group analysis. The chapter also emphasizes the importance of understanding the competitive environment in which a company operates and the need to adapt marketing strategies to stay ahead of competitors. The authors provide examples of successful companies that have utilized competitor analysis to gain a competitive advantage, such as Apple and Southwest Airlines. The chapter concludes with a discussion of the challenges companies may face when conducting competitor analysis, such as obtaining accurate and reliable data and avoiding ethical concerns. Overall, the paper highlights the importance of competitor analysis in developing effective marketing strategies and provides practical guidance for companies to conduct comprehensive competitor analysis.

Research Title: STRATEGIC AND COMPETITIVE ANALYSIS: Methods and Techniques for Analyzing Business Competition Author/s: Craig Fleisher and Babette Bensoussan (2002) Journal: Strategic and Competitive Analysis, Vol 1, Issue 1 Review: The paper "STRATEGIC AND COMPETITIVE ANALYSIS: Methods and Techniques for Analyzing Business Competition" by Craig Fleisher and Babette Bensoussan provides an overview of various methods and techniques for conducting strategic and competitive analysis. The authors emphasize the importance of understanding the competitive environment in order to make effective business decisions. The paper covers topics such as industry analysis, competitor analysis, and SWOT analysis, as well as the use of various tools and frameworks such as Porter's Five Forces, PEST analysis, and scenario planning. The authors also discuss the importance of collecting and analysing both quantitative and qualitative data in order to gain a comprehensive understanding of the competitive landscape. Overall, the paper provides a useful guide for conducting strategic and competitive analysis, and emphasizes the importance of using a variety of methods and techniques in order to gain a well-rounded understanding of the competitive environment.

Research Title: Competitor analysis practices of British charities Author/s: Roger Bennet (2003) Journal: Marketing Intelligence & Planning, Vol 21, Issue 6, pp. 335-345 Review: "Competitor analysis practices of British charities" by Roger Bennet examines the use and extent of competitor analysis in British charities. The author conducted a survey of 100 charities and analyzed the results to determine the frequency and depth of their competitor
analysis practices. The study found that while most charities engaged in some form of competitor analysis, the majority did not conduct it on a regular basis. The most common form of analysis used by charities was information gathered through their own experiences, such as feedback from donors and volunteers. Fewer charities utilized external sources of information, such as market research reports or competitor financial statements. The author also found that the extent to which charities engaged in competitor analysis varied depending on their size and the nature of their activities. Larger charities and those that operated in more competitive markets were more likely to engage in comprehensive competitor analysis practices. Overall, the paper highlights the importance of competitor analysis in the non-profit sector and provides insights into the specific practices used by British charities. The author suggests that charities could benefit from more formalized competitor analysis practices to enhance their strategic decision-making and improve their overall effectiveness.

Research Title: A Manager's Guide for Evaluating Competitive Analysis Techniques Author/s: John E. Prescott, John H. Grant (2015) Journal: Informs Journal on Applied Analytics Review: The paper "A Manager's Guide for Evaluating Competitive Analysis Techniques" by John E. Prescott and John H. Grant aims to provide a comprehensive guide for managers to evaluate the effectiveness of competitive analysis techniques in their organizations. The authors review various commonly used techniques for competitive analysis, including SWOT analysis, Porter's Five Forces, scenario planning, and benchmarking. The paper outlines a framework for managers to evaluate these techniques based on five criteria: validity, reliability, completeness, usefulness, and feasibility. The authors provide a detailed explanation of each criterion and suggest questions that managers should ask themselves when evaluating competitive analysis techniques. The paper concludes by emphasizing the importance of evaluating the effectiveness of competitive analysis techniques regularly to ensure that they continue to meet the needs of the organization in a changing business environment. The authors also highlight the need for managers to use multiple techniques in combination for a comprehensive analysis of the competitive landscape.

Research Title: Competitor Analysis in Strategic Management: Is it a Worthwhile Managerial Practice in Contemporary Times? Author/s: Alex Yaw Adom, Israel Kofi Nyarko, Gladys Narki Kumi Som (2016) Journal: Journal of Resources Development and Management, Vol 24, Issue 2, pp. 116-127 Review: The paper by Alex Yaw Adom, Israel Kofi Nyarko, and Gladys Narki Kumi Som investigates the importance and relevance of competitor analysis in contemporary strategic management. The authors argue that competitor analysis is an essential managerial practice in contemporary times, and that it plays a critical role in helping companies gain a competitive advantage and achieve superior performance. The paper reviews various theoretical frameworks and practical approaches to competitor analysis, and provides empirical evidence to support the importance of competitor analysis in strategic decision-making. The authors suggest that companies should adopt a comprehensive approach to competitor analysis that involves gathering, analysing, and interpreting data on competitors' strengths, weaknesses, opportunities, and threats. The paper also discusses the challenges and limitations of competitor analysis, such as the difficulty of obtaining accurate and reliable data, the risk of analysis paralysis, and the potential for cognitive biases to
influence the analysis. The authors provide recommendations for overcoming these challenges, such as using multiple sources of data and involving multiple stakeholders in the analysis process. Overall, the paper highlights the importance of competitor analysis in strategic management and provides practical guidance for managers to effectively conduct competitor analysis in contemporary times.

Research Title: Importance-Performance Analysis based SWOT analysis Author/s: Boonyarat Phadermrod, Richard M. Crowder, Gary B. Wills (2019) Journal: International Journal of Information Management Volume 44, February 2019, Pages 194-203 Review: In this paper, the authors propose a new approach to conducting SWOT (strengths, weaknesses, opportunities, threats) analysis called Importance-Performance Analysis (IPA)-based SWOT analysis. The IPA-based SWOT analysis involves the use of a matrix with four quadrants to identify and prioritize areas that require strategic attention. The matrix is created by mapping the importance and performance of each SWOT factor, where importance refers to how significant the factor is to the organization, and performance refers to the organization's ability to address the factor. The authors discuss the benefits of using IPA-based SWOT analysis over traditional SWOT analysis, including its ability to provide a more precise and focused understanding of strategic priorities. They also present a case study demonstrating the application of the IPA-based SWOT analysis to a Thai hotel industry to identify key areas for improvement. Overall, the paper suggests that the IPA-based SWOT analysis can be a useful tool for managers to identify and prioritize strategic actions, allocate resources, and improve organizational performance.

Research Title: The PESTLE Analysis Author/s: R Perera (2017) Journal: The Pestle Analysis, Pg 1-23 Review: The paper provides an overview of the PESTLE analysis framework, which is used to assess the external factors that may affect an organization's business operations. The author explains each of the six elements of the PESTLE analysis - Political, Economic, Social, Technological, Legal, and Environmental - and provides examples of how these factors may impact a business. The paper also discusses the benefits of using the PESTLE analysis, such as identifying new opportunities and potential threats, as well as the limitations of the framework, including the potential for oversimplification and the need for ongoing monitoring and updating. Overall, the paper provides a comprehensive introduction to the PESTLE analysis and its application in strategic planning.

Research Title: Comparative analyses of competitive advantage using Porter diamond model Author/s: Kharub, M. and Sharma, R. (2017) Journal: Competitiveness Review, Vol. 27 No. 2, pp. 132-160 Review: In this paper, the aim is to investigate the applicability of Porter's Diamond Model for analyzing and comparing the competitive

advantage of different countries. They conduct a comparative analysis of the competitive advantage of India and China, two emerging economies that have been attracting significant attention in the global economy. They review the existing literature on the Porter model and its components, such as factor conditions, demand conditions, related and supporting industries, and firm strategy, structure, and rivalry. The authors then analyze the relevant factors for the two countries and
discuss the implications of their findings. Overall, the paper provides insights into the usefulness of the Porter model for comparative analysis of competitive advantage and offers practical implications for policymakers and managers.

Research Title: ABCD Analysis as Research Methodology in Company Case Studies Author/s: P. S. Aithal (2017) Journal: International Journal of Management, Technology, and Social Sciences (IJMTS), 2(2), 40-54 Review: In this paper, the author introduces ABCD analysis as a research methodology for case studies in companies. The ABCD analysis stands for Activity Based Costing (A), Benchmarking (B), Customer Satisfaction Analysis (C), and Data Envelopment Analysis (D). The paper explains the importance and benefits of using ABCD analysis as a research methodology in case studies. It also provides a detailed explanation of each component of the ABCD analysis and how they can be applied in a case study. The author suggests that ABCD analysis can be used as a comprehensive and effective research methodology for company case studies, enabling researchers to identify areas for improvement and opportunities for growth.

Research Title: SWOT analysis applications: An integrative literature review Author/s: Mostafa Ali Benzaghta, Abdulaziz Elwalda, Mousa Mohamed Mousa, Ismail Erkan, Mushfiqur Rahman (2021) Journal: Scholar Commons > M3 Center > JGBI > Vol. 6 > Iss. 1 Review: This paper presents an integrative literature review of SWOT analysis applications across various fields such as management, marketing, education, and healthcare. The authors provide a comprehensive overview of the current state of SWOT analysis research and highlight its various applications and limitations. They examine the strengths and weaknesses of SWOT analysis as a strategic planning tool and suggest ways to improve its effectiveness. The paper also discusses various methods for conducting a SWOT analysis and identifies best practices for SWOT analysis implementation. Overall, the authors conclude that SWOT analysis remains a popular and valuable tool for organizational analysis, but its successful implementation requires careful consideration of context, process, and stakeholder involvement.

Research Title: SWOT Analysis as a Competitive Strategy at Primkop Kartika Ardagusema Cimahi City, West Java, Indonesia Author/s: Wiara Sanchia Grafita Ryana Devi, Desty Rara Pringgandinie, Henly Yulina, & Deni Hadiansah (2022) Journal: International Journal of Science, Technology & Management, 3(1), 134-143 Review: The paper discusses the application of SWOT analysis as a competitive strategy at Primkop Kartika Ardagusema in Cimahi City, West Java, Indonesia. The aim of the study is to determine the internal and external factors that affect the company's performance and develop a strategic plan using the SWOT analysis. The authors collected data through interviews and questionnaires and analyzed the data using the SWOT analysis technique. The study found that the company has several strengths, weaknesses, opportunities, and threats that affect its performance. Based on the SWOT analysis, the authors developed several strategic recommendations, including improving marketing and sales strategies, expanding product lines, and investing in employee
training and development. Overall, the paper suggests that SWOT analysis is a useful tool for developing competitive strategies for companies.

Research Title: Optimal online deterministic algorithms and adaptive heuristics for energy and performance efficient dynamic consolidation of virtual machines in Cloud data centers Author/s: Anton Beloglazov, Rajkumar Buyya (2017) Journal: Volume24, Issue13 Special
Issue: Special Issue on Middleware for Clouds and e-Science Review: The paper presents an approach for optimizing the dynamic consolidation of virtual machines (VMs) in Cloud data centres. The authors propose two methods: an optimal online deterministic algorithm and an adaptive heuristic. The optimal online deterministic algorithm is based on the Integer Linear Programming (ILP) approach and is able to achieve the optimal energy consumption and
performance trade-off. However, it has high computational complexity and is not suitable for large-scale Cloud data centres. Therefore, the authors also propose an adaptive heuristic that is able to achieve near-optimal energy

consumption and performance while reducing the computational complexity. The heuristic is adaptive because it adjusts its parameters according to the current workload and system conditions. The proposed methods are evaluated using simulation and the results show that they are effective in achieving energy efficiency and performance improvement in Cloud data centres.

Research Title: Product Market Synergies and Competition in Mergers and Acquisitions: A Text-Based Analysis Author/s: Gerard Hoberg, Gordon Phillips (2010) Journal: The Review of Financial Studies, Volume 23, Issue 10, October 2010, Pages 3773–3811 Review: In this study, the authors investigate the impact of product market synergies on mergers and acquisitions (M&A) activity and competition. Using a text-based analysis of M&A announcements and financial reports, the authors construct measures of product market overlap and synergies. They find that product market synergies play a significant role in M&A decisions, and firms are more likely to engage in M&A activity when there is a greater potential for synergies. The authors also find evidence of increased competition in industries where M&A activity is driven by product market synergies. Additionally, the study shows that M&A activity driven by product market synergies is associated with higher stock returns for both the acquiring and target firms. Overall, the results suggest that product market synergies are an important consideration in M&A decisions and can have significant effects on competition in the industry.

Research Title: Social media data analytics for business decision making system to competitive analysis Author/s: Jie Yang, Pishi Xiu, Lipeng Sun, Limeng Ying, Blaanand Muthu (2020) Journal: Information Processing & Management Volume 59, Issue 1, January 2022 Review: The paper discusses the use of social media data analytics for competitive analysis and decision making in business. The authors emphasize the growing importance of social media as a source of business intelligence and propose a data-driven framework for competitive analysis. The framework involves collecting and processing social media data using natural language processing techniques, identifying competitors and their strategies, analyzing consumer sentiment and behaviour, and generating insights for decision making.

The authors also present a case study demonstrating the effectiveness of the framework in the context of a realworld business problem. Overall, the paper highlights the potential of social media data analytics in improving business performance and competitiveness.

Objectives

To compare the competitive advantages and disadvantages of different EdTech's.

Hypothesis

Null Hypothesis (H0): Companies with less investment in marketing and advertising than their competitors will have a lower market share.

Alternate Hypothesis (H_1): Companies with more investment in marketing and advertising than their competitors will have a larger market share.

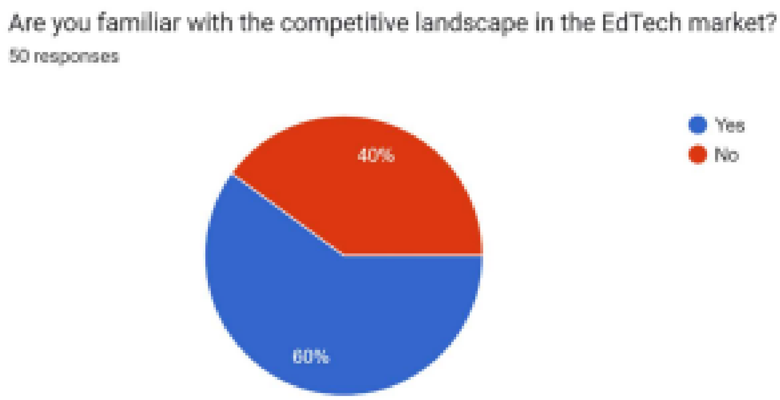
Research Methodology

This Study will be done with the help of regression analysis and will consist of two variables i.e., the independent variable: The importance of Marketing and Advertising and the dependent variable: The Importance of Brand Recognition. The data will be collected through a structured questionnaire of 50 respondents consisting of both EdTech employees and customers. We have taken respondents from both sides to gain a wider aspect on the EdTech market and effectively analyse what components of business would help EdTech expand their market share in the EdTech Market. The Questionnaire used in the study is the Likert type format. According to Cox (1980) they are ideal for any statistical approach. The sample we have taken consists of both employees who are working or managing EdTech's and customers who use EdTech services. We have asked a total of 20 questions including three general open-ended questions to all respondents.

Data Analysis

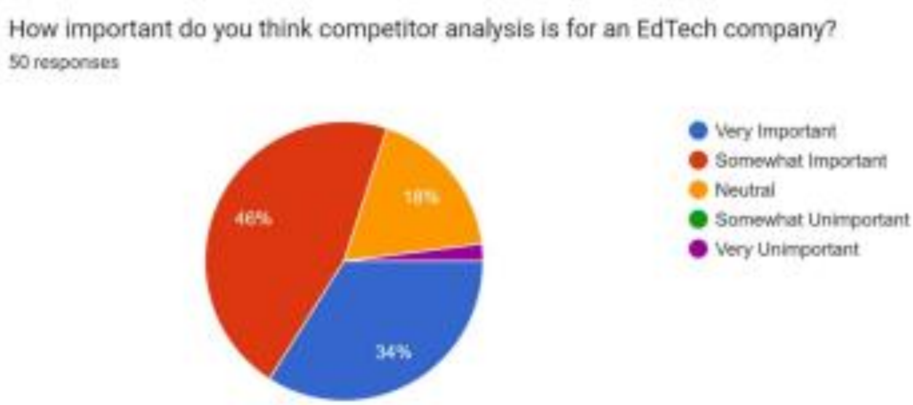
Data analysis is the process of systematically inspecting, cleaning, transforming, and modelling data to extract meaningful insights and draw conclusions. It involves various techniques and tools, such as statistical analysis and data visualization to make sense of complex data sets and identify patterns and trends. Here, regression produces a regression equation where the relationship between each independent and dependent variable is represented by the coefficients.

Chart 1



According to the data, we see that 60% of the population say they are familiar with the competitive landscape of the EdTech market. We also see that 40% of the population say that they are not familiar with the competitive landscape of the EdTech market. (Chart 1)

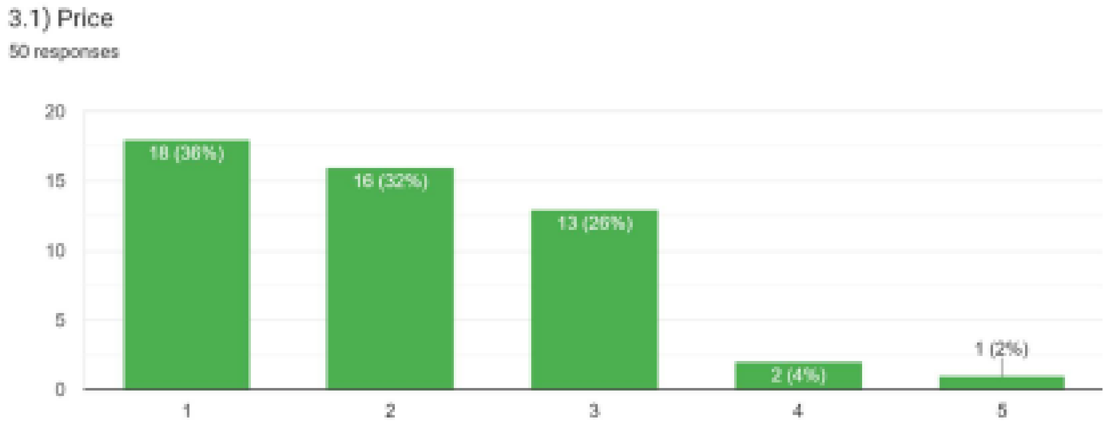
Chart 2



Out of the total population, 34% of the sample think that competitor analysis is very important and 46% of the population think it is somewhat important. Totally, we can say that 80% of the population think that competitor analysis is important for an EdTech. 18% of the population are neutral on how important competitor analysis is for the EdTech market. The final 2% of the population say that competitor analysis is unimportant. (Chart 2)

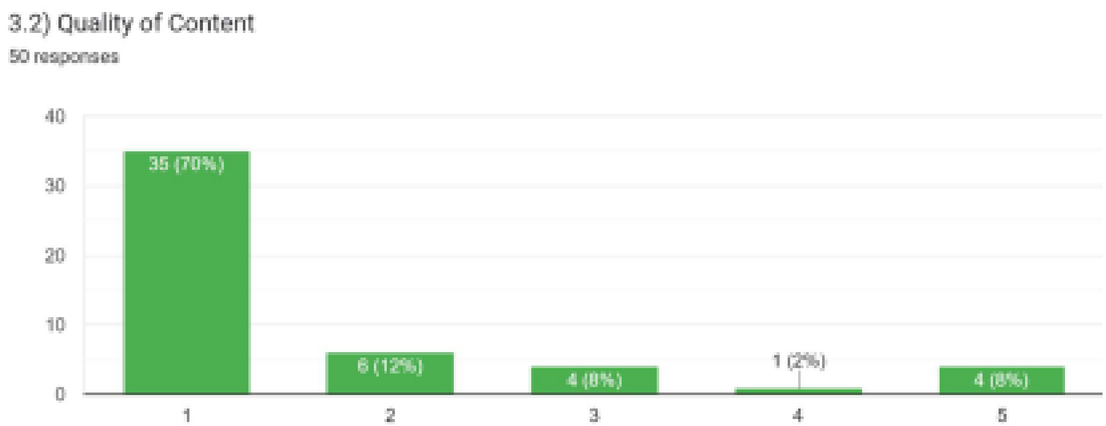
How important are the following factors when assessing an EdTech company? (3.1 – 3.6) (1 – Very Important) (5 – Very Unimportant)

Graph 3.1



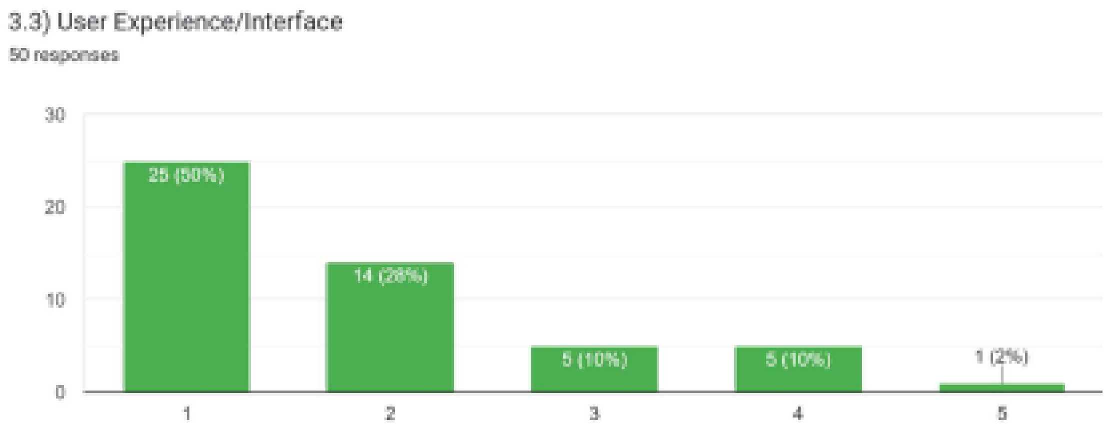
36% of the population think that price plays a very important role when assessing an EdTech. 32% of the population think that it is somewhat important when assessing an EdTech. Overall, we can say that 68% of the population think that price is an important factor when assessing an EdTech. 26% of the population are neutral on the subject. 4% of the population say that price is somewhat unimportant and 2% say that it is very unimportant. Overall, we can say that 6% of the population say that price is not an important factor when assessing an EdTech. (Graph 3.1)

Graph 3.2



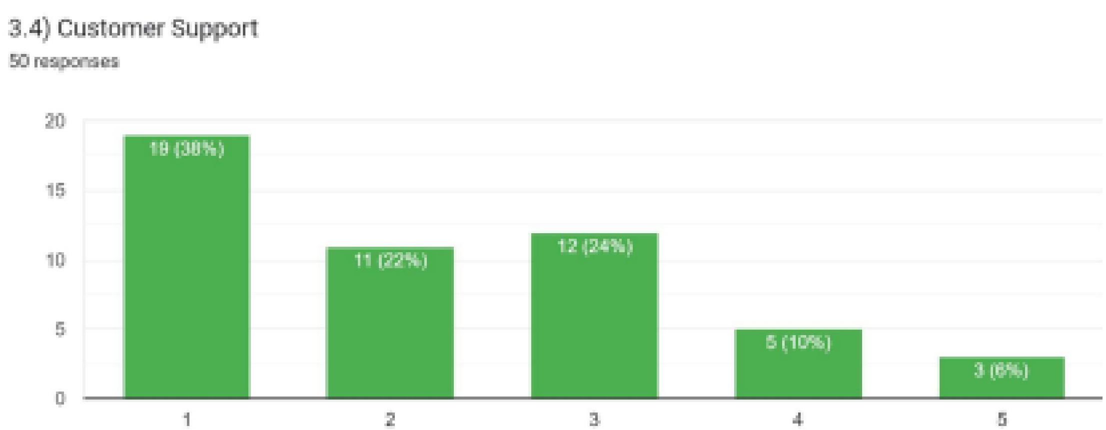
70% of the population think that the Quality of Content plays a very important role when assessing an EdTech. 12% of the population think that it is somewhat important when
assessing an EdTech. Overall, we can say that 82% of the population think that the Quality of Content is an important factor when assessing an EdTech. 3% of the population are neutral on the subject. 2% of the population say that Quality of Content is somewhat unimportant and 8% say that it is very unimportant. Overall, we can say that 10% of the population say that Quality of Content is not an important factor when assessing an EdTech. (Graph 3.2)

Graph 3.3



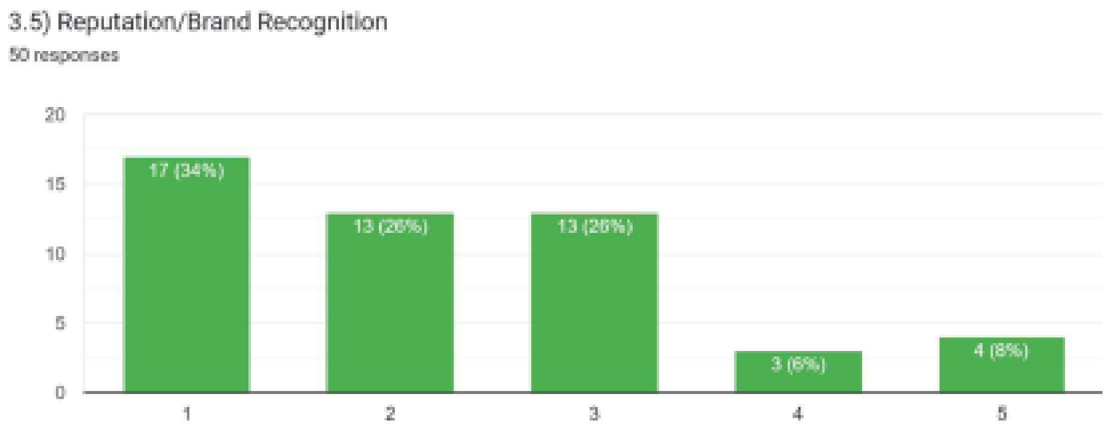
50% of the population think that the User Experience and Interface plays a very important role when assessing an EdTech. 28% of the population think that it is somewhat important when assessing an EdTech. Overall, we can say that 78% of the population think that the User Experience and Interface is an important factor when assessing an EdTech. 10% of the population are neutral on the subject. 10% of the population say that User Experience and Interface is somewhat unimportant and 2% say that it is very unimportant. Overall, we can say that 12% of the population say that User Experience and Interface is not an important factor when assessing an EdTech (Graph 3.3)

Graph 3.4



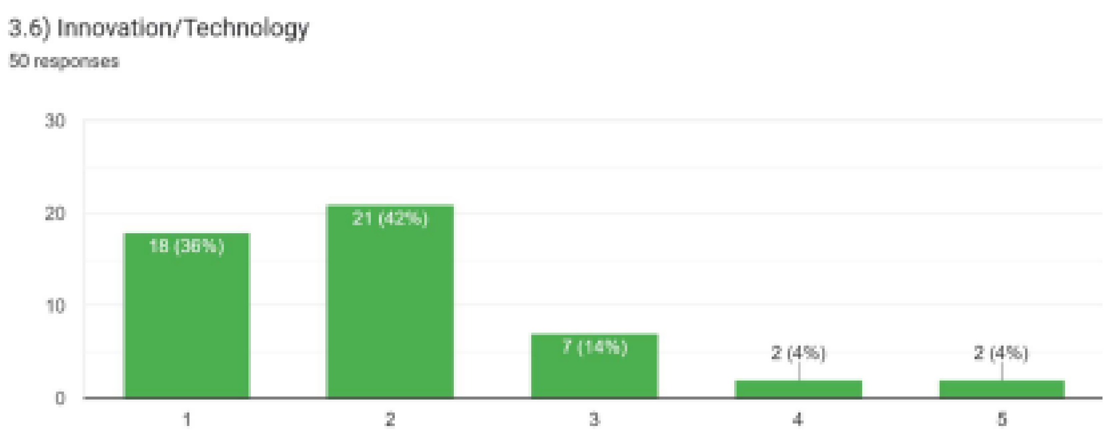
38% of the population think that the Customer Support plays a very important role when assessing an EdTech. 22% of the population think that it is somewhat important when assessing an EdTech. Overall, we can say that 60% of the population think that the Customer Support is an important factor when assessing an EdTech. 24% of the population are neutral on the subject. 10% of the population say that Customer Support is somewhat unimportant and 6% say that it is very unimportant. Overall, we can say that 16% of the population say that Customer Support is not an important factor when assessing an EdTech. (Graph 3.4)

Graph 3.5



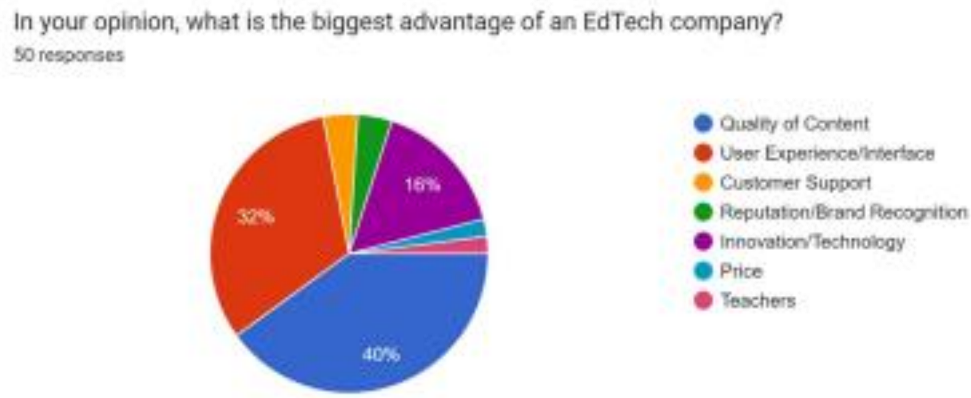
34% of the population think that the Reputation and Brand Recognition plays a very important role when assessing an EdTech. 26% of the population think that it is somewhat important when assessing an EdTech. Overall, we can say that 60% of the population think that the Reputation and Brand Recognition is an important factor when assessing an EdTech. 26% of the population are neutral on the subject. 6% of the population say that Reputation and Brand Recognition is somewhat unimportant and 8% say that it is very unimportant. Overall, we can say that 14% of the population say that Reputation and Brand Recognition is not an important factor when assessing an EdTech. (Graph 3.5)

Graph 3.6



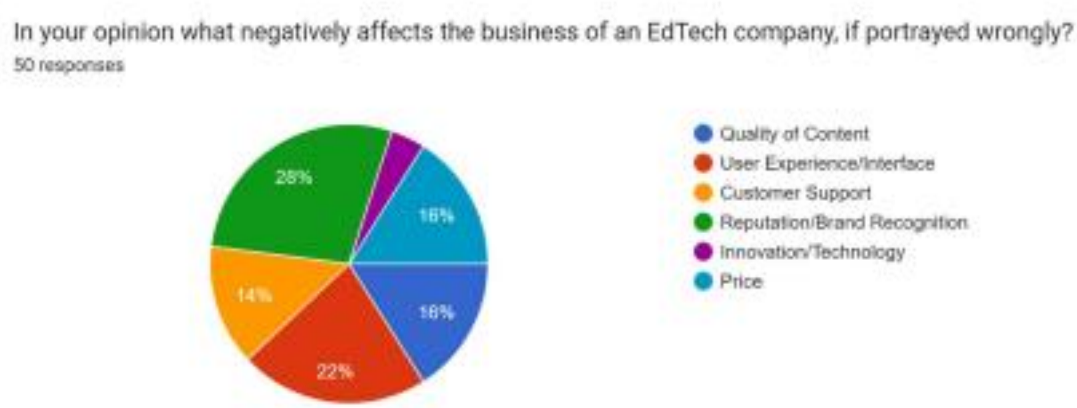
36% of the population think that the Innovation and Technology plays a very important role when assessing an EdTech. 42% of the population think that it is somewhat important when assessing an EdTech. Overall, we can say that 78% of the population think that the Innovation and Technology is an important factor when assessing an EdTech. 14% of the population are neutral on the subject. 4% of the population say that Innovation and Technology is somewhat unimportant and 4% say that it is very unimportant. Overall, we can say that 8% of the population say that Innovation and Technology is not an important factor when assessing an EdTech. (Graph 3.6)

Chart 4



According to the data collected from the population, 40% of the population think that Quality of Content is the biggest advantage of an EdTech company. 32% of the population think that User Experience/Interface is the biggest advantage of an EdTech company. 16% of the population think that Innovation and Technology is the biggest advantage of an EdTech company. 2% of the population think that Customer Support is the biggest advantage of an EdTech company. 2% of the population think that Reputation and Brand Recognition is the biggest advantage of an EdTech company. 1% of the population think that Price is the biggest advantage of an EdTech company. 1% of the population think that the Teachers is the biggest advantage of an EdTech company. (Chart 4)

Chart 5



According to the data collected from the population, 28% of the population think that Reputation and Brand Recognition negatively affects the business of an EdTech company. 22% of the population think that User Experience/Interface negatively affects the business of an EdTech company. 16% of the population think that Price and Quality of Content negatively affects the business of an EdTech company. 14% of the population think that Customer Support negatively affects the business of an EdTech company. 4% of the population think that Innovation and Technology negatively affects the business of an EdTech company. (Chart 5)

Chart 6 (Used in regression Analysis)

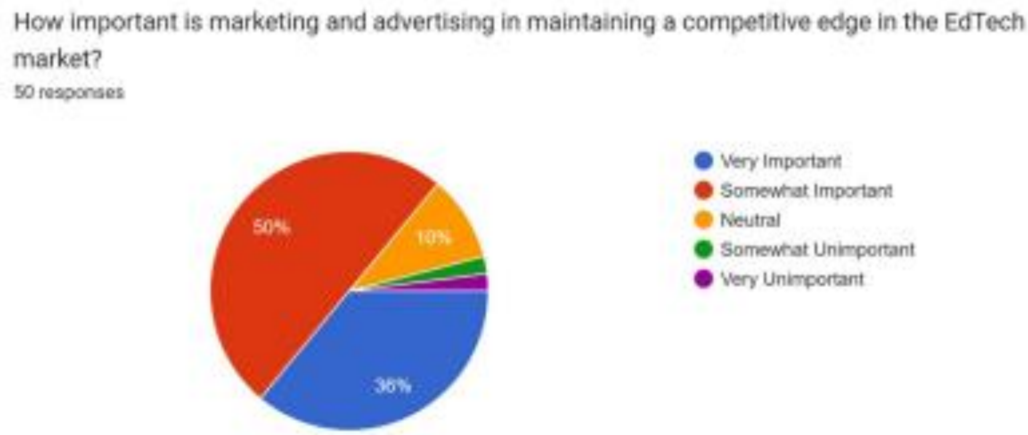
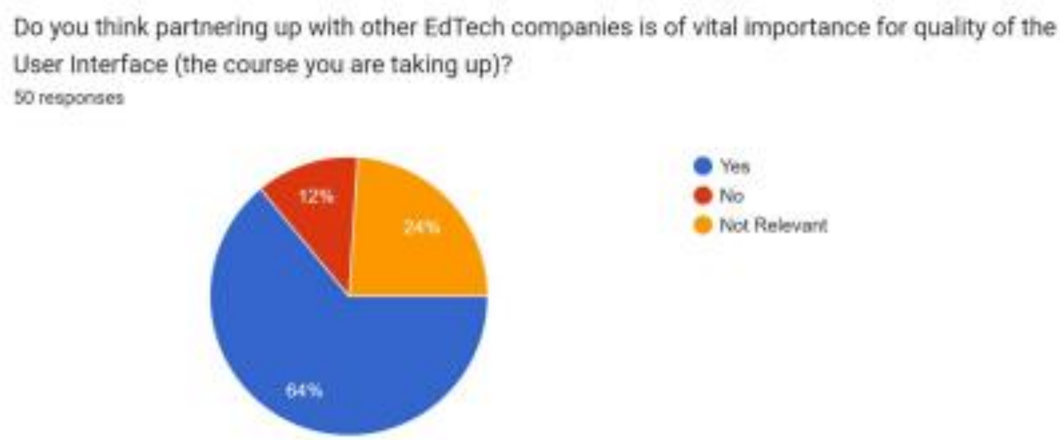
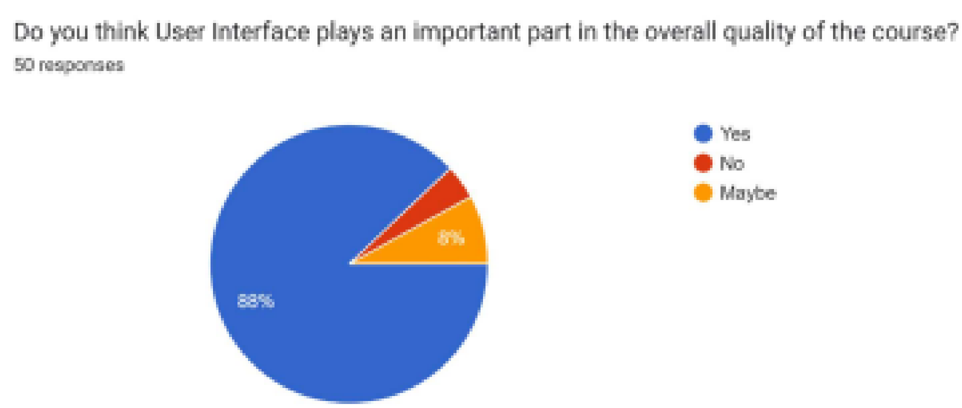


Chart 7



According to the population, 64% of the population think that partnering up with other EdTech's improves the quality of the UI. 12% say that it does not help the quality of the UI. 24% of the population say that it is not relevant towards the User Interface. (Chart 7)

Chart 8



According to the population, 88% of the sample think that User Interface plays an important part in the overall quality of the course. 4% of the sample think that it does not play an important part. 8% of the population are unsure of the subject. (Chart 8)

Chart 9 (Used in regression analysis)

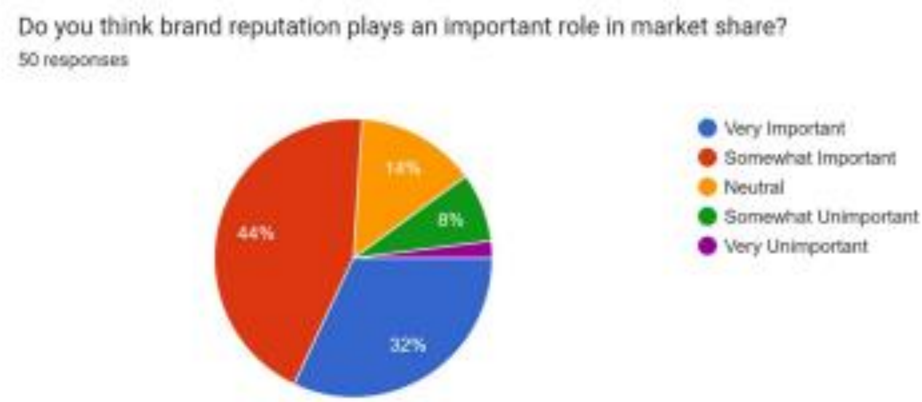


Chart 10

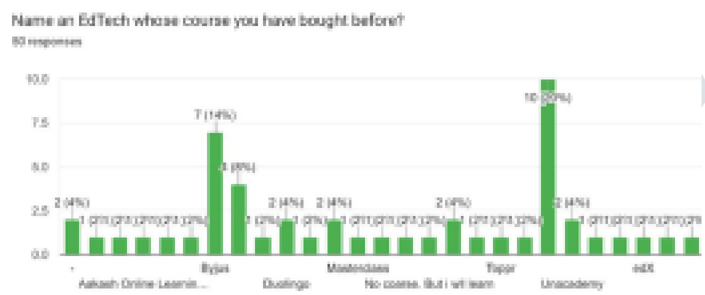


Chart 11

Chart 12

The above three tables are open ended questions posed to the population. Chart 10 shows what EdTech's services respondents have procured before. Chart 11 shows what course or services were procured by them from the EdTech. Chart 12 shows the reasons they had for purchasing their EdTech's service. (Chart 10, 11, 12)

Chart 13

According to the population, 18% of the population say they had a very good experience. 40% of the population say that they had a good experience. 20% of the population say that they had a neutral experience. 20% of the population say that they had a bad experience. 2% of the population say that they had a very bad experience. Overall, we can see that EdTech companies have been helping students learn online and gain better knowledge on their respective subjects. (Chart 13)

Data Interpretation

Hypothesis: Null Hypothesis (H0): Companies with less investment in marketing and advertising than their competitors will have a lower market share.

Alternate Hypothesis (H1): Companies with more investment in marketing and advertising than their competitors will have a larger market share.

Analysis Technique: Regression Analysis using MS Excel

Independent Variable (x): Importance of marketing and advertising Dependent Variable (y): Brand Recognition

We have taken both chart 6 and chart 9 for regression analysis.
Table 1

Importance of Marketing and Advertising	Brand Recognition
4	3
4	4
4	1
5	5
4	5
4	5
4	4
3	3
5	5
5	5
4	5
5	5
5	4
5	4
4	3
5	5
3	3
4	4
4	4
4	4
4	4
2	2
5	5
3	5
4	4
5	5
4	5
5	5
4	4
5	4
4	4
5	3
5	4
4	5
5	4

4 4
5 4
4 4

5	4

5 5
1 2
4 5
5 4
4 4
4 4
3 4
4 2
4 3
4 3

3	4

Index for Table 1

Text Value
Very Important 5
Somewhat Important 4
Neutral 3
Somewhat
Unimportant 2

Very Unimportant	1

Here we see that we have taken two variables. The importance of marketing and advertising as one variable (independent variable) and importance of brand recognition (dependent variable). As you can see in table 2, we have assigned a quantitative value for each qualitative text. The result is given above. We will be using this data to do a regression analysis to see if there is any relation between the dependent and independent variable. This data has been taken directly from the questionnaire. The questions taken from the questionnaire are:

- How important is marketing and advertising in maintaining a competitive edge in the EdTech market?

- Do you think brand reputation plays an important role in market share? Regression Output

SUMMARY
OUTPUT df SS MS F

Regression Statistics

Multiple R 0.486113189

R Square 0.236306033
Adjusted R
Square 0.220395742
Standard
Error 0.836691582

Observations 50

ANOVA

Significance F

Regression 1 10.39746544 10.39747 14.8524 0.000344924 Residual 48 33.60253456 0.700053

Standard

Total 49 44

Lower
Upper

Coefficients Error t Stat P-value Lower 95% Upper 95% 95.0% 95.0%

Intercept 1.723502304 0.602437217 2.860883 0.006239 0.512221096 2.934783513 0.512221096 2.934783513 X

Variable 1 0.547235023 0.141995814 3.853881 0.000345 0.261733304 0.832736742 0.261733304 0.832736742

Since P-Value is lesser than 0.05, Null Hypothesis can be rejected.

Regression Analysis

Since the P-Value is lesser than 0.05, the null hypothesis (H0) is rejected & alternative hypothesis (H1) is accepted.

From the above observations we see that:

• 80% of the sample thinks that competitor analysis is important for the EdTech industry.

• 64% of the sample say that it is important for EdTech's to partner up with companies for a better User Interface. 24% say that the topic is not relevant.

• 88% of the sample say that User Interface plays an important role in the EdTech market. • 75% of the sample say that Brand Recognition plays an important role in the Edtech market.

From the above observations we can see that: The Alternate Hypothesis is accepted. Hence, Companies with more investment in marketing and advertising than their competitors will have a larger market share.

Conclusion

From this study we can see that competitor analysis is very important in the EdTech business as we see a lot of companies emerging in the EdTech industry. As we can see marketing and advertising are the most important factors when it comes to brand recognition. The price of the products offered also plays a very important role when it comes to the business of an EdTech company. The primary source of income for an EdTech comes from the sales department and how many course they will be able to sell in a quarter. Here we can see that User Interface and Technology also plays an important role in the brand recognition and quality of products of an EdTech which in turn ultimately decides the market share of an EdTech. In conclusion, the EdTech market is highly competitive and driven by several key factors, including technological innovation, market demand, and effective marketing and advertising strategies. Companies that invest in these driving forces and differentiate themselves from competitors through unique value propositions and effective branding are more likely to succeed and gain market share. However, the specific competitive advantages and disadvantages of different EdTech companies vary depending on factors such as their business model, target market, and product offerings. By conducting a thorough analysis of these factors, companies can make informed strategic decisions and remain competitive in the rapidly evolving EdTech industry. In addition to the factors identified in this study, it is important to note that the EdTech industry is constantly evolving and new driving forces of competition may emerge in the future. It is crucial for companies in this industry to stay up to-date with market trends and adapt to changes quickly to maintain their competitive edge. Furthermore, government policies and regulations may also have an impact on the competitive landscape of the EdTech industry, and companies need to be aware of these potential changes and adapt accordingly. Overall, the findings of this study suggest that
companies in the EdTech industry should focus on continuously improving their products and services, as well as investing in effective marketing and advertising strategies to differentiate themselves from competitors. Companies that prioritize customer satisfaction and provide high-quality and innovative products are more likely to succeed in this highly competitive market. As the demand for online learning continues to grow, the EdTech industry is poised for further growth and innovation, and companies that can effectively navigate the driving forces of competition are well-positioned to capitalize on these opportunities.

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Appendix

1) Are you familiar with the competitive landscape in the EdTech market?

Yes
No

2) How important do you think competitor analysis is for an EdTech Company?

Very Important
Somewhat Important
Neutral
Somewhat Unimportant
Very Unimportant

3) How Important are the following factors when assessing an Edtech Company?

3.1 Price (1-5)
3.2 Quality of Content (1-5)
3.3 User experience/Interface (1-5)
3.4 Customer Support (1-5)
3.5 Reputation/Brand Recognition (1-5)

3.6 Innovation/Technology (1-5)
3.7 Other (please specify)

Will be scored from 1 to 5. 5 being the highest (Q3 has 7 sub questions)
4) In your opinion, what is the biggest advantage of an Edtech company?

Quality of Content
User Experience/Interface
Customer Support
Reputation/Brand Recognition
Innovation/Technology
Price
Other (please specify)

5) In your opinion, what negatively affects the business of an Edtech company if portrayed wrongly?

Quality of Content
User Experience/Interface
Customer Support
Reputation/Brand Recognition
Innovation/Technology
Price
Other (please specify)

6) How important is marketing and advertising in maintaining a competitive edge in the Edtech market?

Very Important
Somewhat Important
Neutral
Somewhat Unimportant
Very Unimportant

7) Do you think partnering up with other Edtech companies is of vital importance for quality of the User Interface (The course you are taking up)?

Yes
No
Not Relevant

8) Do you think User Interface plays an important part in the overall quality of the course?

Very Important
Somewhat Important
Neutral
Somewhat Unimportant
Very Unimportant

9) Do you think brand reputation plays an important role in market share?

Very Important
Somewhat Important
Neutral
Somewhat Unimportant
Very Unimportant

10) Name an Edtech whose course you have bought before. (OE) 11) What was the course you procured? (OE)

12) What was the reason behind choosing this particular Edtech's course? (OE) 13) Overall, how would you rate your EdTech experience? (scale 1-5)

Totally 19 questions are present including the 7 sub questions of question 3