



Aalto University
School of Business

Mikkeli Campus

AN EXPLORATORY STUDY ON BUSINESS MODEL INNOVATION IN THE EDUCATION TECHNOLOGY (EDTECH) STARTUPS OF BANGLADESH

Rommo Shams

International Business

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Supervisor: Heikki Rannikko

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Author: Rommo Shams

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The main objectives of this study were to (1) examine occurrences of Business Model Innovation (BMI) in EdTech startups and (2) address the challenges and opportunities in the Bangladesh EdTech startup landscape. The study aims to contribute to understanding the business model innovation process in the context of EdTech startups in Bangladesh.

This study used qualitative research to examine the business model innovation of two case companies. The study mapped the innovation occurrences with the help of Business Model Canvas (BMC). The main findings also focused on the overall landscape of EdTech startups in Bangladesh.

The study found that business model innovation can occur in any element of the business model canvas and is not restricted to certain elements. The study also highlighted the significance of the lean startup approach in the innovation process. It also identified the main challenges as Technological infrastructure and opportunities as Market development in the EdTech industry of Bangladesh. Finally, it provided recommendations to local startups and implications for international business.

Key words: Business Model, Business Model Innovation (BMI), Education Technology (EdTech), Startup, Bangladesh

Language: English

Table of Contents

<i>LIST OF TABLES AND FIGURES</i>	5
1. INTRODUCTION	6
1.1. Research Problem	7
1.2. Research Questions.....	7
1.3. Research Objectives	8
2. LITERATURE REVIEW	10
2.1. Business Model.....	10
2.2. Business Model Innovation	13
2.3. Education Technology Startups	15
2.4. Conceptual Framework	18
3. METHODOLOGY	20
3.1. Qualitative Research.....	21
3.2. Data Collection.....	22
3.2.1. Case Companies	22
3.2.2. Interview	23
3.3. Data Analysis	24
4. FINDINGS	26
4.1. Business Model Innovation Occurrences	27
4.2. The Landscape of EdTech in Bangladesh	30
5. DISCUSSION	35
5.1. Business Model Innovation	35
5.2. Education Technology Bangladesh.....	36
6. CONCLUSION	38
6.1. Summary.....	39
6.2. Managerial Implications	40

6.3. Limitations and Suggestion for Future Research	41
<i>REFERENCES</i>	43
<i>APPENDICES</i>	46

LIST OF TABLES AND FIGURES

Table 1. Prominent Global EdTech Startups (Tracxn, 2023).....	15
Table 2. Prominent Bangladesh EdTech Startups (Tracxn, 2022)	18
Table 3. Case Company Introduction	23
Table 4. Categories from data analysis	26
Figure 1. Business Model Canvas (Osterwalder and Pigneur, 2010)	11
Figure 2. Global EdTech Venture Funding (Holon IQ, 2023).....	15
Figure 3. Bangladesh EdTech Startup Ecosystem (Bhattacharjee, 2021).....	17
Figure 4. Conceptual Framework (Adapted from Ulanova, 2021)	19
Figure 5. Business Model Canvas for ROOTs Edu	27
Figure 6. Business Model Canvas of 10 Minute School	29
Figure 7. Success Factors in EdTech Bangladesh.....	30
Figure 8. Challenges in EdTech Bangladesh	37
Figure 9. Opportunities in EdTech Bangladesh	38

1. INTRODUCTION

The education industry has significantly transformed in recent years, with technology playing a critical role in driving innovation. Education Technology, or EdTech, has emerged as a promising industry that offers innovative solutions to traditional education systems. Bangladesh is a developing country with a large population of over 160 million people. More than half of this population is under the age of 25, making it an ideal market for the EdTech industry. The country has a rapidly growing education sector, with a literacy rate of around 73%. In recent years, the EdTech industry has gained momentum in Bangladesh, with several startups offering innovative solutions to traditional education systems. Despite being in the early stages of development, the industry has the potential to transform the education system in Bangladesh by providing access to high-quality education to students.

As the author was born and brought up in Bangladesh, he relates to the struggles in the education sector. He is deeply interested in contributing to education in Bangladesh through research and entrepreneurship. However, concerning the scope of this research, the study is primarily focused on the Bangladesh EdTech Industry. Though EdTechs primarily operate in the local market, the author provides implications for international business later in the study.

Nevertheless, this study aims to contribute to understanding the EdTech landscape in Bangladesh by examining the Business Model Innovation (BMI) in EdTech startups and identifying the challenges and opportunities in the landscape of Bangladesh. By doing so, the author hopes to provide insights to help EdTech startups innovate and succeed in this promising industry.

1.1. Research Problem

In Bangladesh's higher education institutions, research output is limited, and the field of EdTech is still developing in the research domain (Zubairi et al., 2021). The research problem for the study focuses on the need for an evidence-based understanding of the Business Model Innovation (BMI) process in EdTech startups in Bangladesh, as there currently needs to be more research done in this area. Although the EdTech industry in Bangladesh has multiplied in recent years and presents a promising market for startups, there is a need to understand how BMI occurs in this context, as the quality of the studies conducted on EdTech in Bangladesh is often low (Zubairi et al., 2021). Business Model Innovation is a critical component of the success of any startup, as it involves the creation, adaptation, or reinvention of a business model to meet the market's changing needs (Ghezzi and Cavallo, 2018).

The study aims to examine the process of BMI in EdTech startups in Bangladesh and gain a better understanding of the challenges and opportunities that exist in the EdTech landscape of Bangladesh. By identifying these challenges and opportunities, the study can help EdTech startups to innovate and succeed in this promising industry. The COVID-19 pandemic has further highlighted the importance of EdTech solutions in the education sector, making it imperative to understand how BMI occurs in this context. Ultimately, the study aims to contribute to the transformation of the education system in Bangladesh by providing insights into the BMI process in EdTech startups.

1.2. Research Questions

RQ1. What are Business Model Innovation (BMI) occurrences in EdTech startups in Bangladesh?

This research question aims to investigate the extent and nature of Business Model Innovation (BMI) in EdTech startups operating in Bangladesh. Specifically, the research will identify the critical components of the business models adopted by these startups and how they adapt their models to remain competitive and relevant in the

rapidly evolving EdTech industry. The research will use tools such as the Business Model Canvas to analyze and compare the business models of different EdTech startups in Bangladesh. The findings of this question will contribute to understanding the business model innovation in the context of Bangladesh EdTech startups.

RQ2: What are the challenges and opportunities that exist in the EdTech landscape of Bangladesh?

This research question explores the broader context in which EdTech startups operate in Bangladesh. The research will investigate the key challenges and opportunities for EdTech startups in the country, including issues related to regulatory frameworks, funding and investment, market competition, and technological infrastructure. By identifying these challenges and opportunities in their regular operation and business model innovation, the research could inform policy and decision-making in the EdTech industry in Bangladesh and guide the strategic planning and operational decisions of EdTech startups operating in the country. Additionally, this research question's findings could help shed light on the broader socioeconomic and technological factors shaping the development of the EdTech industry in Bangladesh.

1.3. Research Objectives

To examine the Business Model Innovation (BMI) occurrences in the EdTech startups of Bangladesh:

This objective focuses on understanding the BMI process in EdTech startups in Bangladesh by utilizing the Business Model Canvas (BMC). The BMC is a visual tool that helps map out a business model's critical components, including the value proposition, customer segments, revenue streams, and cost structure. By using the BMC to examine the BMI process in EdTech startups in Bangladesh, the study can gain a more detailed understanding of how these startups innovate and adapt their business models to meet the market's changing needs.

To identify the factors that contribute to the BMI process in EdTech startups of Bangladesh:

This objective aims to identify the internal and external factors that contribute to the BMI process in EdTech startups in Bangladesh. Internal factors may include the skills and expertise of the team members, access to funding, and the startup culture. In contrast, external factors may include the regulatory environment, competition, and market trends.

To address the challenges and opportunities for EdTech startups in the EdTech landscape of Bangladesh:

This objective focuses on identifying the challenges and opportunities that EdTech startups face in Bangladesh. Challenges may include regulatory barriers, limited access to funding, and the need for user adoption. In contrast, opportunities may include large market size, favorable government policies, and growing demand for EdTech solutions.

To provide recommendations to EdTech startups on how to innovate and succeed in the EdTech industry in Bangladesh:

This objective aims to provide actionable recommendations to EdTech startups on overcoming the challenges and taking advantage of the opportunities identified in the previous objectives. Recommendations can include strategies for raising funding, developing effective marketing campaigns, and building strong partnerships with stakeholders.

To contribute to the transformation of the education system in Bangladesh by providing insights into the BMI process in EdTech startups:

This objective focuses on the broader impact of the study. By providing insights into the BMI process in EdTech startups, the study can contribute to the transformation of the education system in Bangladesh by helping to create more effective and innovative solutions for learners and educators.

2. LITERATURE REVIEW

In this chapter, the author presents the existing literature and studies on business models and business model innovation. The author first defines the business model and then visualizes it with the help of the Business Model Canvas framework. Additionally, the author discusses the importance of Business models in startups and how they evolve with the help of the Lean Startup approach. That often leads to Business Model Innovation, the core concept of this literature review and study. The author first defines the business model innovation and highlights the approaches and factors in the innovation process, especially in the case of Startups. Furthermore, this chapter gives a brief overview of the current EdTech startups and opens up a discussion of challenges and opportunities within the industry. Finally, there is a conceptual framework that summarizes the literature review discussion and presents a systematic approach toward the empirical part of the study based on the literature shown in the figure.

2.1. Business Model

Business models are the structures through which firms create, deliver, and capture value. They describe how a company generates revenue and profits by offering products or services to customers and capturing value in return (Frick and Ali, 2013). Business models can be visualized using tools such as the Business Model Canvas, which provides a framework for understanding the critical components of a business model and how they interact.

Business Model Canvas

The Business Model Canvas (BMC) is a strategic tool widely used by businesses, entrepreneurs, and authors to describe, analyze, and design business models (Osterwalder and Pigneur, 2010). The BMC consists of nine fundamental building blocks representing a business model's essential elements. Each block describes a

specific aspect of the business, and together they form a holistic picture of how the business creates, delivers, and captures value.

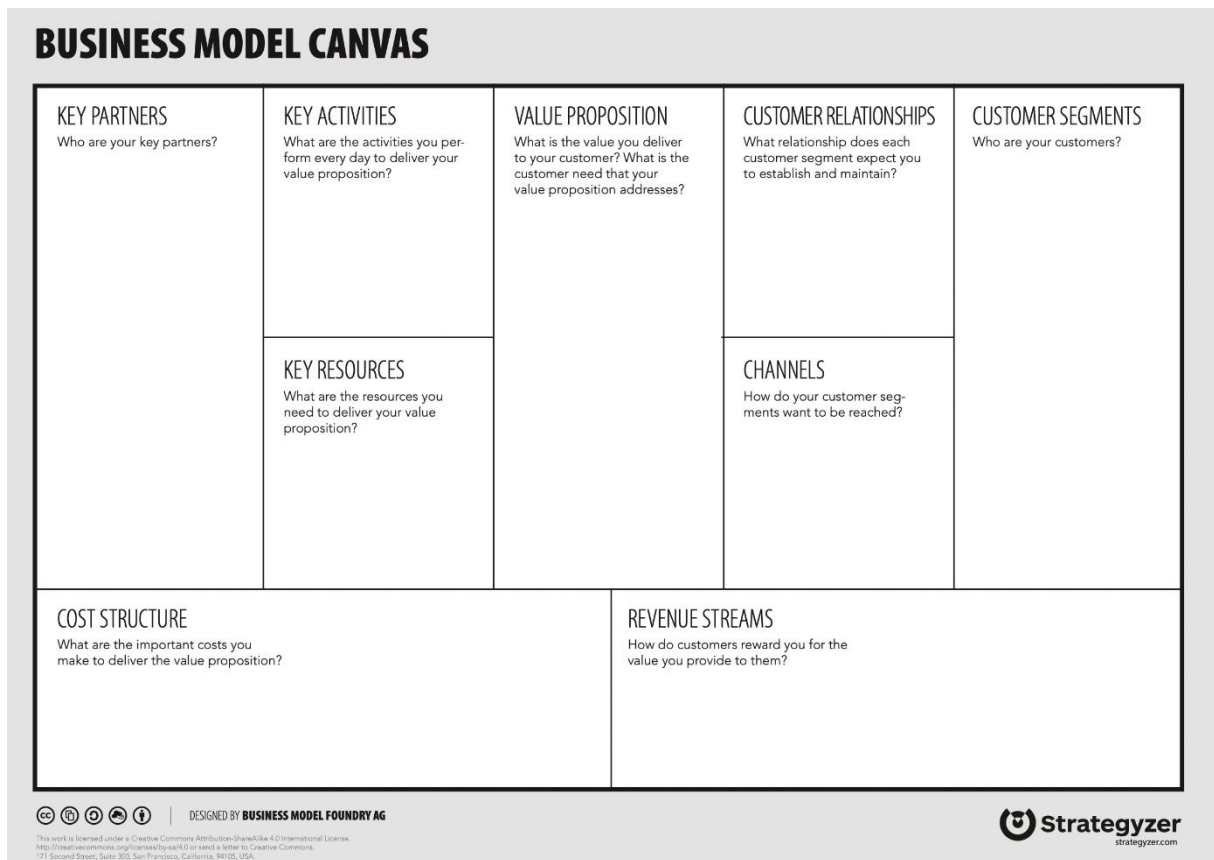


Figure 1. Business Model Canvas (Osterwalder and Pigneur, 2010)

The first element of the BMC is customer segments, which refer to the different groups of customers the business serves. By identifying and understanding customer segments, businesses can tailor their value propositions and marketing strategies to meet the needs and preferences of their customers. The second element, value propositions, describes the products or services the business offers and the unique value they provide customers. By developing strong value propositions that solve customer problems or meet their needs better than competitors, businesses can differentiate themselves and create a sustainable competitive advantage. Channels, the third element of the BMC, refer to the different ways the business interacts with customers and delivers its value propositions. Channels can include online and offline channels like websites, social media, and physical stores. Customer relationships, the fourth element, describe the types of relationships that the business establishes with its customers. By understanding customer relationships, businesses can provide their

customers with the right level of support and engagement, leading to greater customer loyalty and retention. Revenue streams, the fifth element, describe the different sources of revenue that the business generates. Businesses can develop pricing strategies and revenue models that maximize profitability by understanding the revenue streams associated with each customer segment and value proposition. Key resources, the sixth element, refer to the critical assets the business needs to create, deliver, and capture value. Key resources include physical assets, intellectual property, human resources, and financial resources. Key activities, the seventh element, describe the critical activities that the business performs to deliver its value propositions and generate revenue. Key activities can include production, marketing, sales, and customer support. Key partnerships, the eighth element, refer to the strategic alliances the business forms with other organizations to leverage their resources and capabilities. By forming partnerships with other businesses, suppliers, or distributors, businesses can access key resources and expertise they may need help with. The final element of the BMC is the cost structure, which describes the costs that the business incurs to create, deliver, and capture value. Businesses can develop cost optimization strategies that maximize profitability by understanding the cost structure associated with each customer segment and value proposition. The BMC provides a comprehensive and structured approach to designing and analyzing business models. By understanding each element of the BMC, businesses can identify opportunities to create value, optimize their operations, and build sustainable competitive advantages.

Business Models in Startups

Business models are a vital aspect of startup strategy. They describe how a company generates revenue and profits by offering products or services to customers and capturing value in return (Blank, 2013). Startups often face the challenge of developing and testing new business models to find a sustainable and scalable way of creating value (Holm and Günzel-Jensen, 2017). There are many different business models that startups can adopt, and the most appropriate model will depend on the specific needs and goals of the company (Arora, 2014). For example, the freemium business model, which involves offering a product or service for free with the option to upgrade

to a premium version, has been successful for some startups in the EdTech sector (Holm and Günzel-Jensen, 2017). Other business models that have been adopted by EdTech startups include subscription-based models and licensing models (Arora, 2014). Startups can also adopt a "lean startup" approach, which involves rapidly prototyping and testing new business models to quickly identify and address potential issues (Blank, 2013). This approach involves iteratively refining and adjusting the business model based on customer feedback and data and can help startups more quickly identify a viable and scalable model (Blank, 2013). Overall, the research on business models in startups suggests that they are a critical aspect of startup strategy and that adopting a lean startup approach can help companies to identify and refine a viable business model more quickly. By carefully defining and testing their business models, startups can better understand how they create and capture value and make informed decisions about optimizing their models for maximum performance.

2.2. Business Model Innovation

Firstly, Business model innovation refers to developing and implementing new or significantly improved business models to create value and achieve competitive advantage (Ghezzi and Cavallo, 2018). Business Model Innovation can involve changes to any business model aspect, such as the value proposition, customer segments, revenue streams, or distribution channels (Björkdahl et al., 2022). Business model innovation is essential for firms seeking to remain competitive in today's rapidly changing business environment (Randhawa et al., 2020). There are various approaches that firms can use to facilitate business model innovation. One such approach is the "lean startup" approach, which involves rapidly prototyping and testing new business models to quickly identify and address potential issues (Balocco et al., 2019). This approach involves iteratively refining and adjusting the business model based on customer feedback and data and can help firms more quickly identify a viable and scalable model (Blank, 2013). Other approaches to business model innovation may involve more structured problem formulation and problem-solving processes (Björkdahl et al., 2022). For example, firms may use market research and customer insights to identify business model innovation opportunities or adopt an ambidextrous

approach that simultaneously explores new business models while maintaining and improving existing models (Randhawa et al., 2020). However, to successfully innovate their business models, firms must be able to identify and solve problems related to implementing new models (Björkdahl et al., 2022). Overall, the research on business model innovation suggests that it is a complex and multifaceted process that requires firms to be agile and adaptive to identify and pursue new opportunities for value creation. By adopting lean startup or structured problem-solving processes, firms can more effectively innovate their business models and achieve competitive advantage.

Business Model Innovation in Startups

Secondly, Business model innovation is a crucial aspect of startup strategy, as it can help firms create value, achieve a competitive advantage, and drive growth (Ghezzi and Cavallo, 2018). Startups often face the challenge of developing and testing new business models to find a sustainable and scalable way of creating value (Snihur and Zott, 2019). Business model innovation is significant for EdTech startups, as the education technology market is rapidly evolving and becoming increasingly competitive (Hughes, 2019; Renz et al., 2020). Several factors can impact business model innovation in startups. For instance, adopting the "lean startup" approach, which involves rapid prototyping and testing new business models, has facilitated business model innovation in digital entrepreneurship (Balocco et al., 2019). Additionally, market orientation, which involves gathering and using customer insights to inform business decisions, can help firms identify opportunities for business model innovation (Randhawa et al., 2020). The COVID-19 pandemic has also significantly impacted business model innovation in EdTech startups, as the sudden shift to remote learning has created new opportunities and challenges for these firms (Ulanova, 2021; Renz et al., 2020). Many EdTech startups also had to rapidly adapt their business models to meet the increased demand for online learning resources (Sikandar and Rahman, 2021). Overall, by adopting approaches such as the lean startup approach and gathering and using customer insights, EdTech startups can more effectively innovate their business models and succeed in a rapidly evolving market.

2.3. Education Technology Startups

Education Technology startups have come to the limelight recently, especially during the COVID-19 pandemic. The Global EdTech venture capital has witnessed an enormous rise in 2022, delivering \$10.6B of investment across multiple markets and segments (Holon IQ, 2023).

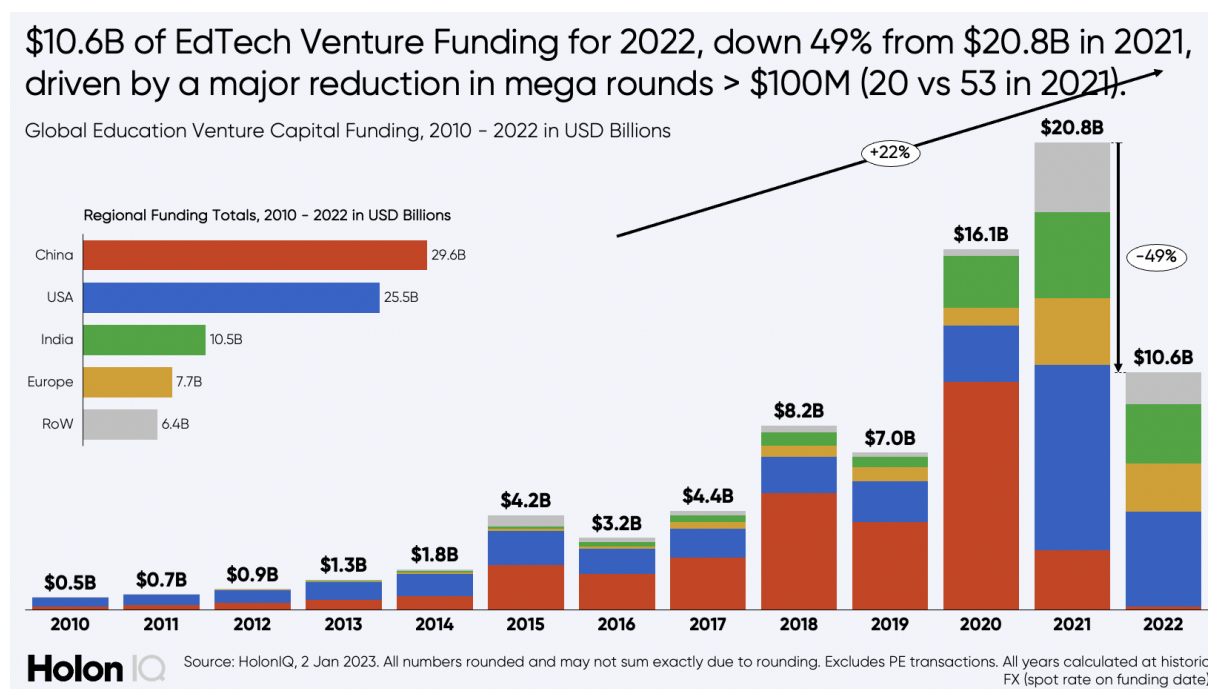


Figure 2. Global EdTech Venture Funding (Holon IQ, 2023)

The followings are an overview of the prominent EdTech Startups in the Global and Local market:

Global EdTech Startups

Table 1. Prominent Global EdTech Startups (Tracxn, 2023)

Company	About	Location	Founded	Funding
upGrad	App-based platform offering higher education programs for working professionals	Mumbai, India	2015	Series B

Unacademy	SaaS-based platform providing multi-disciplinary learning and test preparation solutions	Bengaluru , India	2015	Series H
Open English	Online platform providing live English classes	Miami, United States	2007	Series D
Babbel	Provider of SaaS-based language learning solutions	Berlin, Germany	2007	Series C
Course Hero	Mobile-based platform providing online learning resources	Redwood City, United States	2006	Series C
PhysicsWallah	Provider of an app-based tutoring platform for students	Noida, India	2016	Series A
Udacity	Provider of professional development courses platform	Mountain View, United States	2011	Series D
EMERITUS	Online platform offering tutoring solutions for students	Singapore	2015	Series E
Quizlet	Online platform providing learning tools and flashcards for students	San Francisco, United States	2005	Series C

Bangladesh EdTech Startups

Compared to the Global EdTech Startup scene, the Bangladesh EdTech Startup industry is fairly new. Nevertheless, the education market in Bangladesh is a lucrative opportunity, particularly for life-long learning, as people need to upgrade their skills for the new work environment continually. Moreover, the sector recently received

mainstream attention, as the COVID-19 pandemic has increased interest in remote learning. EdTech startups focused on skill development have seen good adoption among a specific customer segment. (Kader, 2021). However, the perception of online education is also a challenge, as many users need to recognize the utility of online education, particularly in comparison to offline, in-person education. Additionally, the digital divide, poor quality, and expensive mobile data outside urban centers hinder the sector's growth (Kader, 2021).

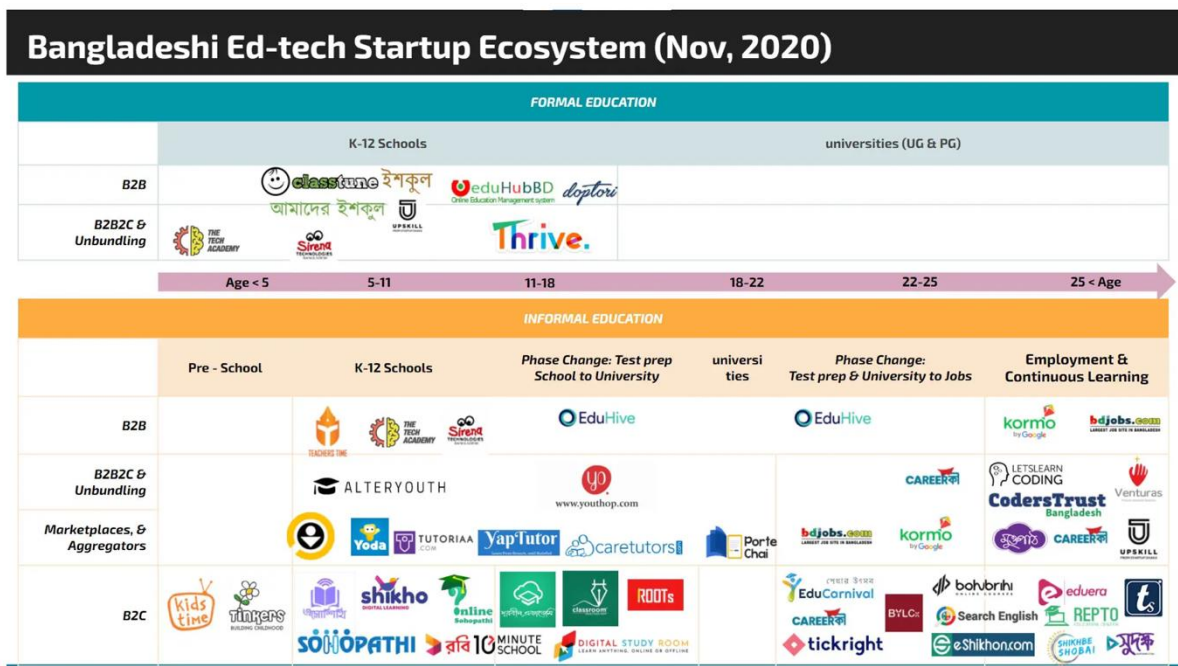


Figure 3. Bangladesh EdTech Startup Ecosystem (Bhattacharjee, 2021)

Despite these challenges, international investors are already showing interest in the country's potential for education technology (Babu, 2022). Moreover, the education community is investing financially and with substantial rising technological interest in personalized learning (Zubairi et al., 2021). With government support, a young and tech-savvy population, and increasing private spending in the sector, the EdTech sector in Bangladesh presents a significant opportunity for growth and development (Ruhul Kader, 2021).

Table 2. Prominent Bangladesh EdTech Startups (Tracxn, 2022)

Company	About	Location	Founded	Funding
Shikho Technologies	Mobile-based platform providing school-based learning and test preparation solutions	Dhaka	2019	Seed
10 Minute School	Web-based educational platform providing video content and online tests	Dhaka	2015	Seed
EduHive	Mobile-based platform providing multiple exam preparation solutions	Dhaka	2018	Seed
Thrive	Online platform providing learning tools	Dhaka	2019	Seed
Edvive	Online platform providing English language learning solutions	Dhaka	2020	Seed
ROOTs Edu	Web-based platform providing test preparation solutions	Dhaka	2019	Pre-seed
Ostad	Online platform offering skill development courses	Dhaka	2020	Pre-seed

2.4. Conceptual Framework

The literature review is the foundation of the study. Here the author defined the business model and business model innovation in this chapter. As both concepts are intertwined, the author brought the business model canvas framework to help readers understand the specific segment of the broad spectrum of business models where innovation occurs. Another vital part of the study is the different mediums and approaches of innovation, whose significance in business model innovation was highlighted by recent studies. As the figure shows, the whole process from business model to business model innovation is an iterative process; which makes it worthwhile to identify the business model innovation occurrences through the lens of the Business

model canvas and determine the importance of the lean startup approach in the whole process. Another important notion for the study puts the business model innovation process in a specific industry: the Education Technology industry. There needs to be more literature on specific aspects of the studied market in Bangladesh, so the author aims to contribute to the area through this study. The author presented a brief overview of the current global and Bangladesh EdTech market to familiarize and help readers visualize how the market compares with the Global market. Lastly, the author highlights the current challenges and opportunities in the area, which also aims to discover more through the study. The conceptual framework presented below will help readers visualize the summary of the literature review and orient them on how the study will unfold.

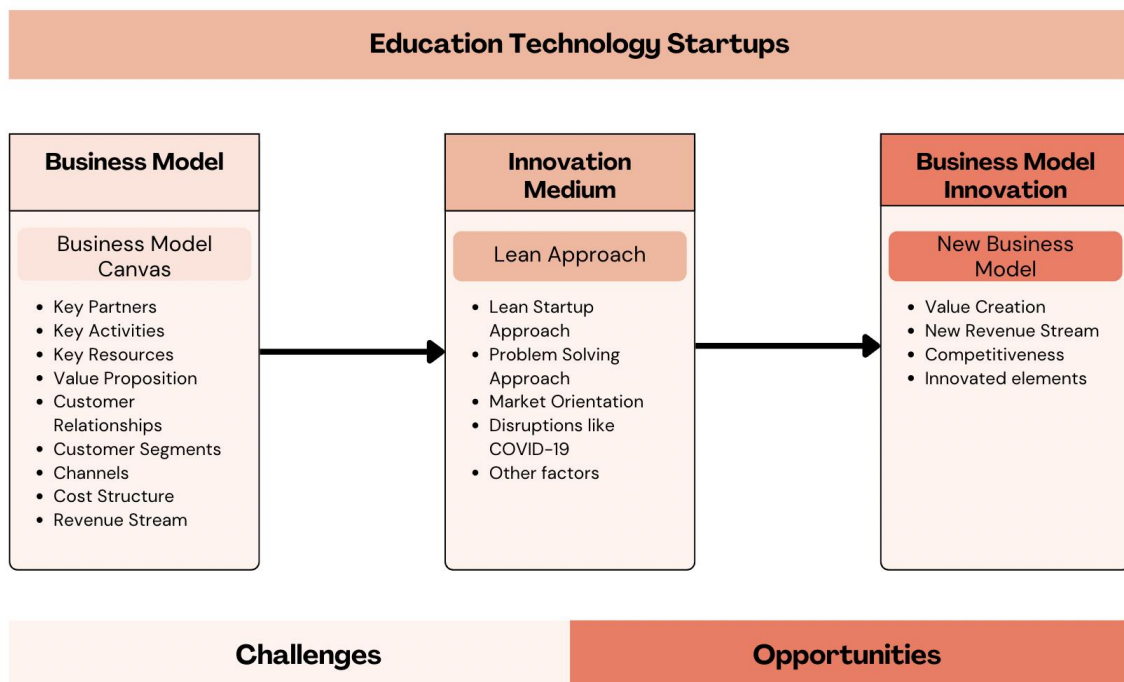


Figure 4. Conceptual Framework (Adapted from Ulanova, 2021)

RQ1. What are Business Model Innovation (BMI) occurrences in EdTech startups in Bangladesh?

As this framework represents the relationship between the core concepts of the study, which is supported by the existing literature, companies first have an existing business model. Then, they go through an innovation medium for different reasons and

challenges, which eventually leads to business model innovation and exposure to opportunities. The author aims to find such business model innovation occurrences in the Education Technology Startups to build understanding in the context of Bangladesh, which is the prime objective of the study.

RQ2: What are the challenges and opportunities that exist in the EdTech landscape of Bangladesh?

Factors and mediums associated with the business model innovation process, as depicted by the conceptual framework, lead to either challenges or opportunities for the industry. For this study, as highlighted by the conceptual framework, the author aims to address the existing challenges and opportunities by researching the factors within the business model innovation process that either fails as challenges or succeeds as opportunities. Moreover, it also identifies the general challenges and opportunities in the industry. Hence, this question will help in understanding the broader spectrum of the Bangladesh EdTech Industry.

3. METHODOLOGY

The purpose of this chapter is to outline the approaches and methods utilized in this research study. In this chapter, the author introduces the qualitative research approach that was chosen for this study and explains the reasons behind this choice. Additionally, he describes the criteria used for data collection and provide an overview of how the information gathered from interviews was analyzed. The author chose a qualitative research approach as it provides a more in-depth understanding of the phenomenon under investigation. Furthermore, the qualitative approach allows to capture the richness and complexity of the experiences and perspectives of the participants, which is particularly important when investigating a topic such as business model innovation in EdTech startups in Bangladesh.

In order to collect data for this study, the author conducted semi-structured interviews with individuals involved in EdTech startups in Bangladesh. He selected participants based on certain criteria, which will be described in detail later in this chapter. The information gathered from the interviews was then analyzed using a coding process,

which will also be explained in detail later in this chapter. By detailing the qualitative research approach, criteria for data collection, and analysis process, the study provides a transparent and replicable methodology for this study on business model innovation in EdTech startups of Bangladesh. This information will also help the readers understand how the study was conducted and the results obtained.

3.1. Qualitative Research

Qualitative research, originating from sociology and anthropology, has become a popular empirical research method in various disciplines, including psychology and business studies (Rajiv Jhangiani et al., 2019). It often involves interviews with individuals to gain insight into the subject, focusing on the quality of the information shared by the interviewees (Ryan et al., 2007). The six types of qualitative research include phenomenological, ethnographic, grounded theory, case study, historical model, and narrative model, each serving different purposes for businesses and authors (Leonard, 2019). This study conducted semi-structured interviews with two interviewees from different stages of startups in Bangladesh. Given the novelty of the topic in the literature, interviewing was deemed the best method to collect data. The research questions aimed to investigate the factors associated with business model innovation, the impact of the lean startup approach on business model development and innovation, as well as the opportunities and challenges faced by EdTech startups in Bangladesh. Semi-structured interviews were chosen as they allow for open-ended and honest discussions with interviewees, allowing the author to explore personal experiences and dig deeper into fascinating topics while avoiding irrelevant questions. Semi-structured interviews were considered suitable for answering the study's research questions, which focused on "what" and "how" questions. (Eriksson & Kovalainen, 2008). As the case companies are at different startup stages, semi-structured interviews were suitable for the study as the author could ask additional questions during the interviews and delve deeper into the experiences of each interviewee.

3.2. Data Collection

Since it is important to understand the journey of business model innovations of Bangladeshi EdTech Startups, semi-structured interviews are the most convenient and practical approach to gathering information on the subject. To arrange semi-structured interviews, the author considered the following categories.

1. Startups size and users: The author wanted to interview representatives from the most prominent companies in Bangladesh EdTech Industry (Table 2), which includes names like 10 Minute School, Shikho, ROOTs Edu, Thrive EdTech etc.
2. Startups operations: The author aimed to focus on the startups that have operations in the K-12 and Admission market with more than three years of experience (who also had operations before the Covid period).
3. Interviewee knowledge: The author contacted interviewees who also have a broader understanding and interest in the Bangladesh EdTech Landscape.
4. Interviewee experience: The author selected interviewees who were involved during the companies' transition period (i.e., covid and post-covid).

After deciding on whom to interview from the selected companies, the author started to contact potential interviewees via LinkedIn in January 2023 and booked appointments in early February (when the author visited his home country Bangladesh). The author emphasized in-person interviews as it allows a lively discussion and in-depth understanding. At the beginning of the interview, the author received verbal consent to record the interview and use it to conduct the research. According to the Aalto University GDPR Guidelines, the author is the only person with access to the audio recordings and uses them for data analysis purposes. Finally, the author conducted two detailed interviews with a duration of 1.5 hours to 2 hours.

3.2.1. Case Companies

The author selected two case companies for the study: 10 Minute School and ROOTs Edu.

Table 3. Case Company Introduction

Company	About	Founded	Interviewee
10 Minute School	10MS is an online education platform in Bangladesh. The platform covers academic classes for K-12, admission preparation, and skills development training	2015	Nishat Binte Monsur, Associate
ROOTs Edu	ROOTs Edu is an EdTech startup solely focused on K-12, test prep, and competitive exams segment.	2019	Dewan Fahim Faysal, Business Developer

10 Minute School is the largest learning app in the country. Apart from academic courses for the students of classes 1 to 12, the app offers skill development, language learning, and job preparation courses. Founded in 2015 by Ayman Sadiq, 10 Minute School started as a Facebook page that aimed to provide free education to students in Bangladesh. Since then, it has grown to become one of the largest online education platforms in the country. (10 Minute School, n.d.)

ROOTs Edu is one of the fastest-growing EdTech startups in Bangladesh. ROOTs Edu was founded in 2019 by a group of education enthusiasts with a mission to make quality education accessible to all. Since then, it has grown to become one of the fastest-growing online education platforms in Bangladesh, with a team of experienced educators, content creators, and support staff. ROOTs Edu helps students to clear any concept and crack any competitive exam through unique teaching pedagogy, cutting-edge live class technology, and other services like 24/7 doubt-solving, exams, and mentorship. (ROOTs Edu - Crunchbase Company Profile & Funding, n.d.)

3.2.2. Interview

The author conducted a semi-structured interview for the study as the research content is very contextual. This allowed for flexibility in the interview process and facilitated the exploration of complex issues in greater detail. The questionnaire for

semi-structured interviews was approved beforehand by the author's supervisor to ensure quality and appropriate questionnaire.

Semi-structured Interview Questionnaire:

1. Can you briefly describe your background and experience in the education technology industry?
2. Can you tell me about your company's business model and how it has evolved over time?
3. In your opinion, what are the key factors that have contributed to your company's business model innovation?
4. How familiar are you with the lean startup approach? To what extent has your company implemented this methodology in its business model development and innovation?
5. Can you provide specific examples of how the lean startup approach has affected your company's business model and overall success?
6. Can you tell me about any opportunities that you see in the education technology market in Bangladesh?
7. Can you tell me about any challenges that you have faced or currently facing as an EdTech startup in Bangladesh?
8. In your opinion, what are some key success factors for EdTech startups in Bangladesh?
9. How does your company differentiate itself from competitors in the Bangladeshi EdTech market?
10. How do you see the EdTech sector in Bangladesh evolving in the future, and what role do you see your company playing in this evolution?
11. Is there anything else that you believe is important for me to know about your company's business model and experience in the education technology industry in Bangladesh?

3.3. Data Analysis

The author followed thematic content analysis to discover the qualitative research finding (Appendices).

Thematic content analysis is a method used to analyze qualitative data, particularly textual data such as interview transcripts, focus group discussions, and written documents. It involves identifying patterns and themes within the data and then organizing and interpreting these themes in order to gain insights into the research question or topic of interest (Braun and Clarke, 2006)

Thematic content analysis typically involves several stages, which are outlined by Braun and Clarke (2006) as follows:

1. Familiarization with the data: The author reads through the data several times in order to gain a good understanding of its content and context.
2. Generating initial codes: The author identifies keywords or phrases representing the data's essential ideas, concepts, or themes. These codes are then assigned to specific sections of the data.
3. Searching for themes: The author looks for patterns and connections between the codes, grouping similar codes to form broader themes.
4. Reviewing themes: The author reviews the themes to ensure they are coherent and meaningful and accurately reflect the data.
5. Defining and naming themes: The author defines and gives them names that accurately capture their content and meaning.
6. Producing the report: The author writes up the findings of the analysis, including a detailed description of the themes and their meanings, and provides examples from the data to support the analysis.

These steps are iterative and involve going back and forth between different stages until the themes are well-developed and fully supported by the data.

However, due to a large amount of content and technological limitation of transcription in the local (Bengali) language, the author decided to do manual translation and coding. Firstly, the author listened to the interviews multiple times in order to get a better understanding. He then summarized and translated the interviews with revised coding and under column headings "Category, Content, Context, Comment" following the thematic analysis (Appendices).

Table 4. Categories from data analysis

Category	Times Discussed
Business Model	11
Business Model Innovation	9
Lean Approach	9
Success Factors	11
Challenges	13
Opportunities	15

As part of an iterative process, the author decided on the themes and discovered the relevant categories under which the key takeaways can be grouped. The author discovered six categories under two research questions which are more elaborated in the Appendices section.

4. FINDINGS

In this chapter, the author presents the results of the empirical part. The author provides answers from the interviewees under the relevant theme and summarizes the contents with figures and points. After data analysis, the author identified the following themes for the findings: The Business Model Innovation Occurrences in the case of companies and The Landscape of EdTech in Bangladesh. The findings of first theme help answering the **RQ1** by diving deep into the business model innovation with case studies. Next, the findings of second theme enlightens the understanding of **RQ2** by identifying success factors, challenges, and opportunities in the industry.

4.1. Business Model Innovation Occurrences

Under this theme, the author explained the findings on a case-by-case basis. Firstly, he presents the business models analyzed through the business model canvas. He presents the elements where the case companies have witnessed business model innovation, and finally, he presents the findings of the relevance of the Lean Approach within the whole process.

ROOTs Edu is a growing EdTech Startup in Bangladesh focusing on test and exam preparations. *We call ourselves (ROOTs) a test-preparation solution*, which is the main value proposition of this company. Its customer segment is broad but primarily the test-takers. *We provide courses to a wide range of K-12 students but primarily to the SSC, HSC, and University Admission Candidates.* Now our revenue model is based on *One-time payment and a subscription-based model*. The instructors, known as the brand partners, are one of the company's key partners and contribute to the revenue stream through affiliate marketing. *Affiliate marketing is one of the crucial factors in generating revenue for ROOTs Edu.* ROOTs Edu also has a Freemium Business Model but in a different way. *A big focus is on mainstream platforms- YouTube and Facebook, where we distribute free content and promotion activities.*

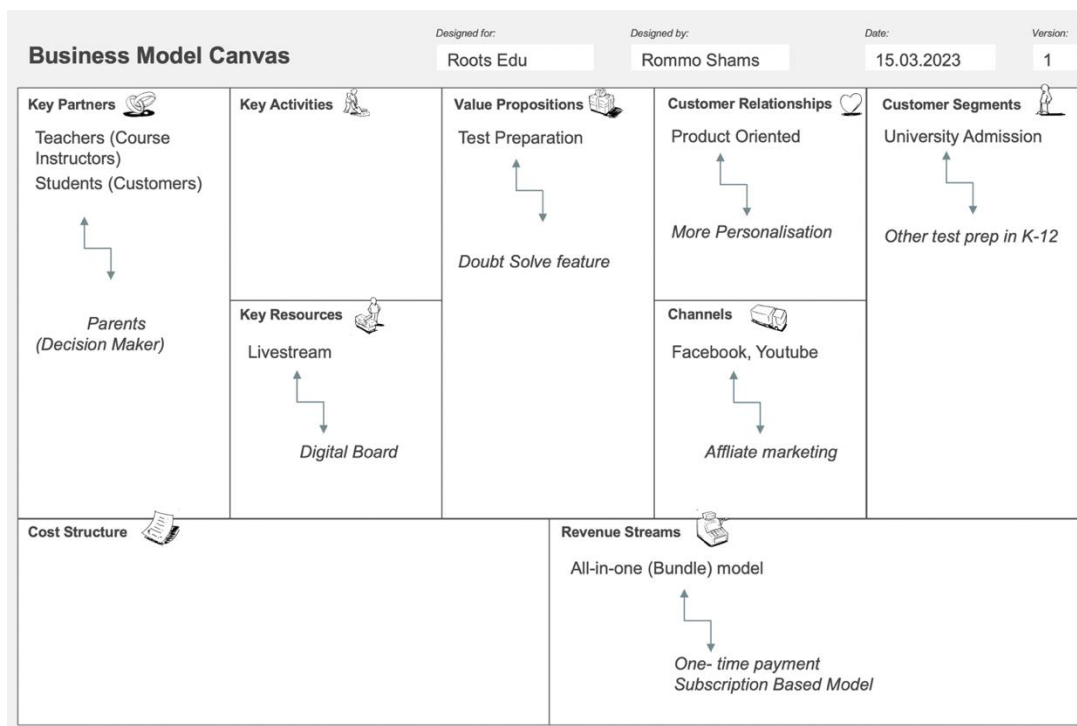


Figure 5. Business Model Canvas for ROOTs Edu

Business model innovation has occurred in ROOTs through many elements (Figure 5). ROOTs Edu started its journey with the University Admission customer segment and then spread over other Test preparation segments in Kindergarten to Grade 12 segment. Firstly, the Key Resources as *ROOTs Edu was the first EdTech Platform that brought Digital Board to Bangladesh*. Earlier, their primary resource was the Livestream platform through social media channels like YouTube and Facebook live. It has also innovated its value proposition that, in addition to test preparation solutions, it provides a Doubt-Solve feature. *Doubt solve feature is one of our Unique Selling Points*. ROOTs are the first prominent EdTech to utilize a doubt solver feature for their revenue stream. *We managed to earn a handsome chunk of revenue by incorporating the doubt-solve feature*. Furthermore, with the addition of this feature, ROOTs' revenue stream was also innovated, shifting from an All-in-one (Bundle) model to a One-time payment and Subscription-based model.

In ROOTs' case, it has observed the significance of the Lean Startup approach throughout its business model innovation. *We utilized the Facebook community to ask for feedback and build communication and know what the customers want*. For example, the company has received feedback that their customers desired more personalization; and to ensure better customer relationships, they have incorporated personalization through their value proposition:

“Lean startup approach is especially important for EdTech Startups. It helps to develop the product based on what the customer wants. In the last couple of months, apps were updated based on customer demands. The platform was focused on multiple-choice questions. However, students asked for practice written exams as well. Then the platforms are now optimized for students to participate in written exams”.

10 Minute School is currently a private-owned company, but it was initially more like a non-profit organization. The value proposition and competitive advantage of 10MS are that 10 MS has 25000+ free videos and content, which are supplied to many customers nationwide. Its customer segment is also varied. *We mostly have products for many verticals, i.e., admission, academic, language learning, job section, and skill*

development, with the most variation in the Skill development area. For its cost structure, Operation costs are run through product revenue.

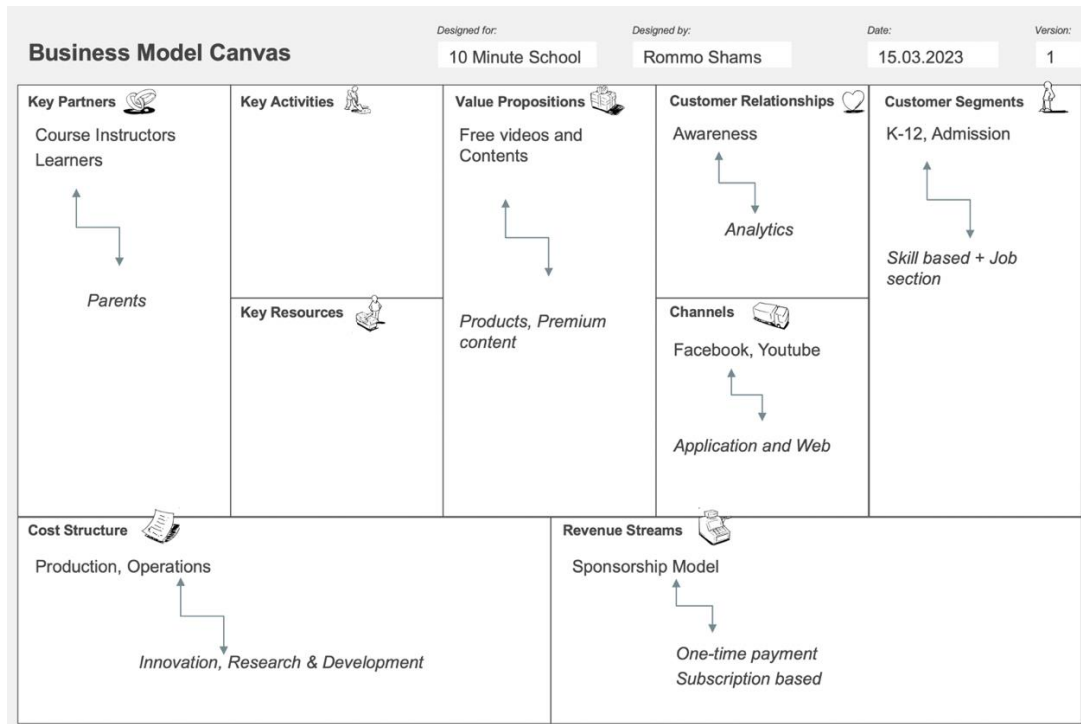


Figure 6. Business Model Canvas of 10 Minute School

10 Minute School has innovated its business model over many business model canvas elements (Figure 6). First and foremost, it has innovated its revenue stream after the disruption of COVID-19. *At first, we had a complete Sponsorship model. When covid came, it hit companies with a sponsorship model. So next, we had to come up with a product.* Its business model has come a long way since it started its operation. *Initially, 10MS started its operations through Facebook live. We now even have an app for children.* Their cost structure has also been diversified because it could raise capital. *Now Innovation, Research & Development is dependent on Investment.* For the key partners, 10MS is now focusing on parents, too, as *Parents make the decision about where their children will invest money.*

The influence of the Lean Startup approach was also observed in 10MS' business model innovation. *"By focusing on the customer and following a lean approach, we can keep the retention rate. We experimented with the first product as a book and became successful. Right now, we have moved towards a subscription model and*

making products. A lean practice we follow is giving discounts to courses to match the expected price point of customers.”

4.2. The Landscape of EdTech in Bangladesh

In this part, the author presents the findings from the interviews about the interviewees’ broader outlook on the industry level. Firstly, the author shows what factors within the business model the interviewees believe to be the success factors for an EdTech Company in Bangladesh. Then the author highlights the challenges the companies face around their business models or in the process of business model innovation. Lastly, he addresses the opportunities in the industry for further business model innovation occurrences.

Success Factors:

Both interviewees highlighted some of the factors relevant to their companies’ business models (Figure 7), which are important factors in the EdTech Industry in Bangladesh.

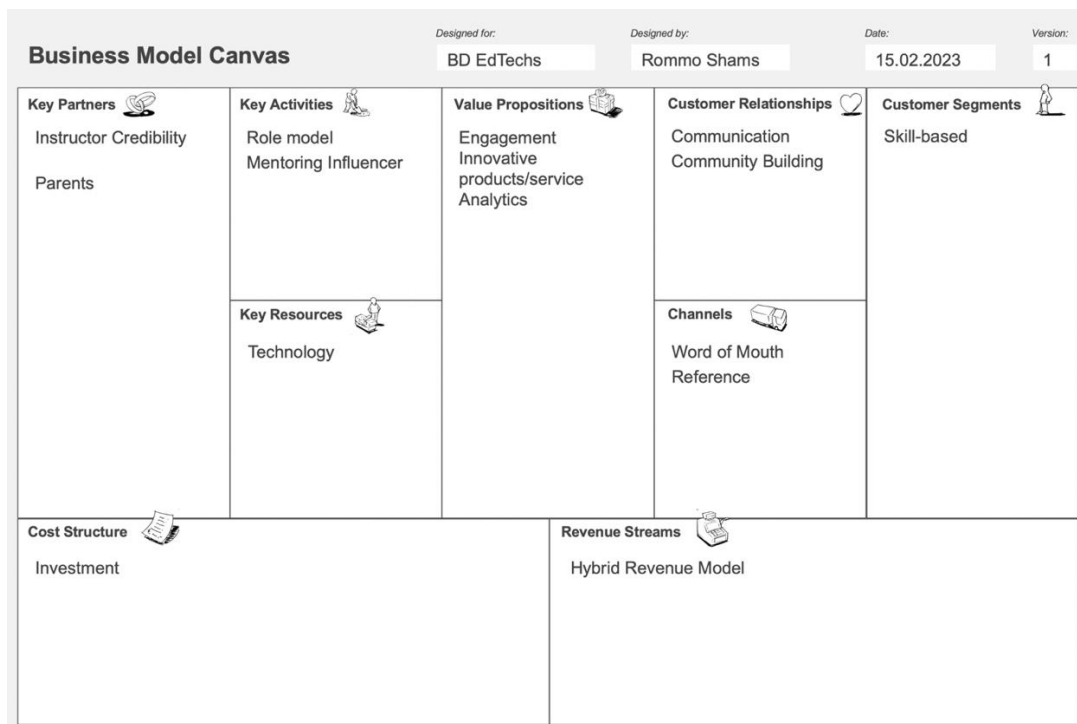


Figure 7. Success Factors in EdTech Bangladesh

Key Partners: Two factors in key partners that are critical to the success of an EdTech company in Bangladesh are instructor credibility and parents. The people of Bangladesh highly value good instructors with educational credentials, teaching experience, and educational background. *BD people tend to believe that good institutes' students mean good teachers.* Additionally, parents play a significant role in the purchasing decisions of teenagers in Bangladesh, as *Buying power is still in parents' hands.*

Key Activities: Among the Key Activities, two critical factors are being a role model or leader figure to the learners and influencing like a mentor. The interviewees emphasized the importance of having instructors who are authoritative and can be considered “star products” by the company. Additionally, having a leading figure who is well-known and trusted by the people is essential for building trust and accountability.

Key Resources: Technology is a critical resource for the EdTech industry's and its players' success. COVID-19 played a significant role in accelerating technology adoption in Bangladesh and building a better technological infrastructure. *“People adapted to technology during COVID for every need. Before COVID, we had to invest a long time in technological adaptation and education. However, after COVID, that struggle is eased.”*

Value Proposition: The interviewees addressed three key components of a successful value proposition for an EdTech company in Bangladesh: engagement, differentiation, and analytics. *Like Shikho's content, teenagers in Bangladesh highly value engaging, visually appealing, and animated content.* Additionally, using analytics, for example, that tracks time and progress, is highly valued as they can help improve the users' experience. *To improve education, you need to compare.*

Customer Relationship: Strong communication with teachers and the community is also an essential factor, as students constantly need guidance and motivation. *For EdTechs, communication is very important.*

Channels: The interviewees highlighted the importance of community building and the enormous role of strong references and word of mouth in promoting their brand and user experience.

Cost Structure: Finally, the interviewees often mentioned funding and investment as essential factors for a company's success. There is a comparatively lower investment in Bangladesh, especially in the blooming phase of the Bangladesh EdTech industry. *Investment can play a success factor because there is much to educate people.*

Revenue Stream: Due to the advent of COVID-19, and the disruptions in revenue streams, the interviewees opined to include mixed streams like the case companies have innovated their revenue streams into one-time payment, subscription, and product sales.

Challenges:

Throughout the interviews, the interviewees mentioned many times about their companies' challenges and the struggles in the industry in general. These challenges are highlighted below:

- Online reluctance: One of the main struggles for EdTech platforms is to convince people, especially parents, to purchase high-ticket courses. *Parents determine the usage of money and have not yet fully accepted the online format, especially for expensive or premium courses. They will prefer offline platforms when it comes to expensive or premium courses.*
- Technological Infrastructure: EdTech in Bangladesh is growing; however, people still face a technological barrier. *The companies cannot provide their best because they have to adjust to the technological infrastructure.*
- Unwillingness to pay: Most people still focus on price and have a mindset of not paying much for an online course. "The EdTech companies have to cut down the cost of operations to generate cheaper content."

- Teachers' background: People still consider teachers' backgrounds more than the content. "There are still biases towards own school and college teachers and their private tuition."
- Internet connection: Even in Dhaka, the capital city, many places do not support good internet connectivity, let alone the other parts of the country. *India's EdTech startups grew with faster connectivity when Jio came into being, but we cannot be due to our poor connectivity.*
- Ecosystem: The school and college ecosystems lean towards offline coaching centers. *Yes, there is a bias toward offline coaching.*
- Parents' trust: There is still a prevailing belief that children will be distracted when they get access to smart devices. "Parents are not willing to give devices to children for online."
- Content knowledge: There are ample platforms where one can find similar content; many give it away for free or at a low price. "Content knowledge is getting free day by day."
- Availability of resources: The EdTech industry in Bangladesh is not yet well financially backed, especially the small startup ones. *We do not have enough resources for better products and services. Tools and software (resources) are very costly, at least for early-stage startups. We have massive data, but resources shortages, especially good data analysts/data scientists, are scarce here.*
- Purchasing trust: An important factor while making a purchase decision is trust. *We cannot yet bring high-end products to market because our people do not trust online-based products/services.*
- Technological education: People still need to be educated on how to use the service technology. *Tech-end is still a bottleneck for any project. Technological infrastructure and resources are a big challenge from our end as well.*
- Price competition: EdTech platforms compete heavily on price, i.e., lowering the price point. *A big USP for choosing an online platform is price, which is why*

EdTech platforms cannot create higher-quality products properly. However, a few are high-ticket.

- Internet accessibility: Smartphone penetration is increasing; however, good internet connectivity to every corner of the country is not yet realized. *Internet is a barrier as you do class through a smartphone.*

Opportunities:

During the interviews, the interviewees expressed their opinions on the existing and future opportunities in this growing industry. They are highlighted below:

- Customer Segment: *There are many gaps in the market, and if one focuses on a subsection, there is an opportunity.* The skills development sector is a very demanding yet untapped market. *The personal development sector is gaining traction; for example, EdTechs like OSTAD are filling the need.* Ostad is the first live-streaming education platform in Bangladesh that provides a rigorous online Bootcamp for in-demand job skills. *As a society, though we value degrees more, the industry is leading toward skill, So skill-focused ed-tech is an opportunity.*
- Value Proposition: Personalization and improvement based on analytics will be critical for the growing industry. *EdTech being a part of the digital space, there is a lot of data and analytics; therefore, it is becoming crucial and leads to personalization. Data analytics has a future in EdTech. To improve education, you need to compare. Analytics help in the lean approach too.*
- New Product/Market Development: EdTech in Bangladesh is still perceived as a “course-selling-platform,” but the business has much more potential. *Companies started to arrive to support the booming EdTech, schools, and other businesses.* Additionally, the whole education and job systems have lots of exams and, therefore, many opportunities for new EdTech companies. *BD people are serious about Education. The market is very untapped, the industry is huge, and only certain portions are there. There are still a lot of untapped markets outside Dhaka and in different education segments.*

- *New Customer Segment: People will shift towards digital space. What happens in the world happens to be 5/10 years; for example- the rise in abroad education. Studying abroad has many information gaps. The study abroad area has a lot of gaps, nobody knows what to do, and there are no reliable sources” Moreover, a lot of people are interested, and the market is growing- and it is huge.*
- *Investment: EdTechs are receiving funding from local and global investors. Many Other EdTechs are receiving good investments. Investment can play a success factor because there is much to educate people. Foreign players can bring investments and technology that can help if collaborates with the local market.*

5. DISCUSSION

In this chapter, the author interprets the findings, discusses those in light of existing literature, and highlights the key insights from the results. This chapter is divided into two parts. First, the author discusses the Business Model Innovation and how the findings support and adds to the existing knowledge. Secondly, he presents an overview of the Bangladesh EdTech Industry and discusses the current trends compared with the earlier discussions on the mentioned topic.

5.1. Business Model Innovation

From the case studies and the way their business models evolved, it is imperative that Business model innovation does lead to creating value (Ghezzi and Cavallo, 2018). Not only to remain competitive in the business environment but also to adapt to market needs and disruptions like COVID-19 (Randhawa et al., 2020; Ulanova, 2021). The Business model canvas was a very important tool for this study, the way Osterwalder

and Pigneur (2010) endorse that it is a helpful tool for authors to describe and analyze business models. Thus, analyzing the Business model innovation occurrences with the help of the business model canvas, the author expected to find the occurrences mainly in the “Value Proposition” and “Revenue Stream”. While that stands true, however, they are not the only elements impacted by business model innovation; instead, the findings suggest that in EdTech Startup of Bangladesh, business model innovation can occur in any of the elements, i.e., Key Partners, Key Resources, Customer Segments, Cost Structure as which supports the study of Björkdahl et al. (2022). One significant result of this study that emerged as a success factor in Key Resources after business model innovation occurrence in both cases is treating “parents” as a key partner. Ulanova (2021) also concluded the same result in Finland; however, in Bangladesh, companies treat “parents” more as a key partner than the target audience. Moreover, the study found that the medium of innovation can be varied and complex. Nevertheless, the “lean startup approach” was observed throughout the many occurrences, especially for the “Value creation/proposition” element. This study addressing the significance of the “lean startup approach” also supports the argument of Balocco et al. (2019) that adopting the lean approach and testing the minimum viable products with customer feedback does facilitate business model innovation. Indeed, the study supports the existing literature on Business model innovation and adds a better understanding, significantly contributing to Bangladesh's Education Technology context.

5.2. Education Technology Bangladesh

Bangladesh's Education Technology Industry is a landscape of both challenges and opportunities. With the disruption in the Traditional Learning experience during the COVID-19 pandemic, the EdTech industry has seen a boom. In India, it was more prevalent. Similarly, in Bangladesh, COVID-19 also significantly impacted the rise of EdTech Startups. *“If covid didn't appear, EdTech in BD would not uprising like this.”* This is also probably why we can identify a pattern in the current prominent BD EdTechs' founding and funded year around the COVID period (Tracxn, 2022).

Nevertheless, the industry, i.e., the case companies, faces similar challenges in their operation and business model innovation. The author categorized the challenges into four main sectors: Technology, Ecosystem, Resources, and Price (Figure 8). On the right-hand side, the Technology and Ecosystem are mostly macro-level barriers where a significant shift is needed in the country. On the other hand, these struggles involving Resources and Price can be considered industry-specific micro-level barriers on the left side. Thus, these findings support the existing discussions within the literature that the perception of online education and poor connectivity are still considerable obstacles (Kader, 2021).

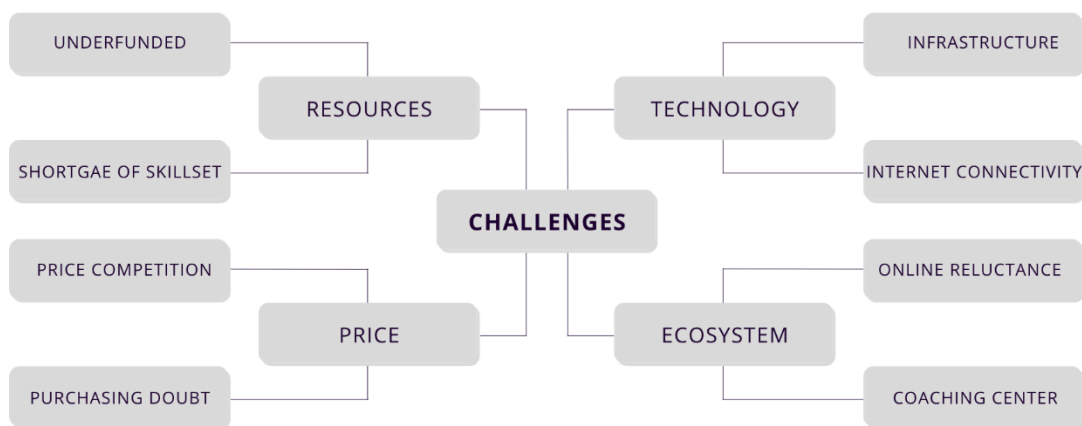


Figure 8. Challenges in EdTech Bangladesh

As challenges exist, so do opportunities. The EdTech industry is in far better shape than in pre-covid times. *“The industry is now more ready than 5-6 years back.”* The author identified a strong notion of opportunities from the interviews. Thus, opportunities exist in many different formats. However, the author has divided them into four main sectors: Value Creation, Customer Segment, Investment, and Market Development (Figure 9). The previous discussion by Babu (2022) in the literature also addressed the Skill-focused customer segment, the renewed excitement in Investing in early-stage startups, which are also supported by this study. However, Kader (2021) addressed the demography outside urban areas as a challenge, where the author concludes that it is more likely an opportunity for the industry to expand outside the

existing market and decentralize education. Moreover, a critical insight from the findings is that the demand for EdTech is leaning towards personalization, which is predicted to be a key differentiation in the value proposition for the startups in the coming days; likewise, Zubairi et al. (2021) emphasized personalized learning.

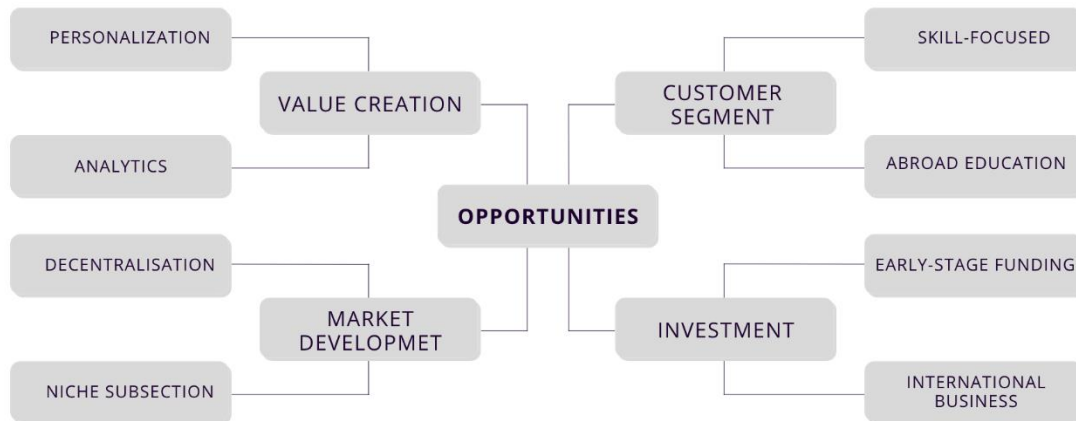


Figure 9. Opportunities in EdTech Bangladesh

6. CONCLUSION

In conclusion, this qualitative research successfully answered the research questions; the answers are also presented in this chapter. The study aimed to contribute to understanding Business Model Innovation in the context of Bangladesh Education Technology Startups and identify the challenges and opportunities in the process and throughout the industry. The Introduction provided the context of the research and the author's aims. The literature review, presented as the foundation for the study and conceptual framework, was followed by the methodology chapter, which explained how the research was conducted and why the chosen approach was suitable for the given context. The latter two sections, Findings and Discussion are based on the

results from interviews and existing literature, where the study's findings are interpreted and elaborated in the given context. Finally, this chapter summarizes the answer to the research questions through methodological analysis and with the lens of existing literature, completing the links of the study, and accomplishing its aims. Additionally, the author presents the managerial implications and limitations of the study.

6.1. Summary

The author found the answer to the first research question by analyzing each case company and then deriving a conclusion based on the common ground in the light of existing literature. The second research question needed a more holistic approach that would only be captured with the qualitative methodology like interviews, as the answer required both the case company experience and broader industry knowledge.

RQ1. What are Business Model Innovation (BMI) occurrences in EdTech startups in Bangladesh?

The occurrences of Business Model Innovation in EdTech Startups in Bangladesh are notable in various ways. After reviewing past literature, the author expected that most of the business model innovation occurs in the revenue model. However, the research finds that the revenue stream is still one of the most significant areas of innovation but not necessarily the only one. Using the Business Model Canvas framework made it clear that all elements of the Business Model, especially Value Proposition, Channels, Customer Segments, and Key partners, are crucial areas of business innovation (Björkdahl et al., 2022). One of the historical factors of these business model innovations, especially in the Revenue Stream, was caused by the advent of COVID-19, supporting Ulanova (2021). Moreover, the Research found that the “lean approach” significantly contributes to successful innovations, most visibly in the Value Proposition.

“We first find a pain point of the Target Group, create a Minimum Viable Product (MVP), launch that, and then make continuous improvement based on feedback and progress. The product or service keeps updated and adjusted with the needs.”

RQ2: What are the challenges and opportunities that exist in the EdTech landscape of Bangladesh?

The EdTech landscape of Bangladesh has many hurdles, yet it is full of opportunities. The main challenge that the research brought up is the current Technological Infrastructure.

"The companies cannot provide their best because they have to adjust to the technological infrastructure."

"Tech-end is still a bottleneck for any project. Technological infrastructure and resources are also a big challenge from our end."

As for Opportunities, the study concludes that there is still much untapped potential segment within the market. Other than K-12 (Academic) segment, penetrating new customer segments, for example, Skill-focused segments, the Study Abroad segment is a potential opportunity in the Bangladesh EdTech Industry. Additionally, Personalization has a growing demand in education and is going to be a key differentiation (Zubairi et al., 2021).

"There are many gaps in the market, and if one focuses on a subsection, there is an opportunity."

"Education will always be a necessity. There is a limitless sphere of education. EdTech is one of the most sustainable industries will be out there for the next decades."

6.2. Managerial Implications

Implication for Local Industry

The study is beneficial for local EdTech startups in the following ways. First, it allows them to understand how the two case companies innovated their business model and the importance of the Lean approach. Second, the study makes it possible for EdTech startups to start internal discussions on revisiting the business model and think about where room for improvement and innovation is. Thirdly, the study identifies the success factors (Findings) in the business model they can implement, i.e., treating

Parents as a Key partner, having a hybrid revenue stream, and emphasizing trust and community building. Finally, the study gives an overview of current challenges and opportunities that will be helpful for startups and research.

Implication for International Business

EdTech of Bangladesh still competes in the local market. However, there is a potential opportunity for international business, specifically for Global Investors and Venture Capital firms. The study identifies the necessity of Investment in EdTech startups and addresses the high-reward possibilities in the future. Bangladesh is a growing market for EdTech; the startups recently started to attract funding from international firms, yet there is a big gap in raising funds and capital. Investment plays a significant role for early-stage startups, and they are actively raising funds. There is a massive opportunity for Foreign Investors and Venture capital firms to invest in this growing sector and fill up the need.

“In the future, we see foreign players might enter the market but through collaboration or investment.”

Finally, the study provides a supporting overview of Bangladesh's Education Technology landscape, which is a crucial contributor to understanding and doing business in this industry.

6.3. Limitations and Suggestion for Future Research

The study has several limitations that should be acknowledged. First, the research employs a qualitative method, specifically semi-structured interviews with only two businesses representing Bangladesh EdTech startups. Therefore, the study's findings cannot be generalized to the international scale, and the business model innovation practices at EdTech startups cannot be applied to other EdTech startups. Second, the author did not interview co-founders, which could have provided more practical insights from the case companies. Third, the author had limited time to conduct the research due to the graduation timeline, resulting in a limited number of interviews. This limitation may have affected the study's results, and if more time had been available for research, the findings could have been enriched. Lastly, Business Model

Innovation and Education Technology are relatively new research areas, and there is a lack of research and literature on these topics. This deficiency could have impacted the literature review, and the study's findings are solely based on the interviews and the author's learned knowledge. If there had been more comprehensive documentation and reliable research on the EdTech Startups of Bangladesh, it would have been a valuable contribution to the study. Overall, while the study's limitations are recognized, it still provides valuable insights into the business model innovation practices at EdTech startups in Bangladesh.

Regarding suggestions for future research, the following points are worth considering. Firstly, during the interviews, it was frequently mentioned that the perception of online platforms was generally negative and untrustworthy, particularly concerning buying courses or services. Therefore, it would be interesting to conduct research on people's perceptions of online learning platforms, particularly in terms of their willingness to pay higher prices for online courses or services. Additionally, the study found that Role Models and References are crucial factors in choosing an EdTech startup for learners. Therefore, future research that explores the impact of Brand Advocates and Role Models on the success of these startups would be a valuable contribution to the literature. Furthermore, recently EdTechs are receiving more fundings; therefore, it would be important to study the outcome of these investments on the EdTech ecosystem. In conclusion, these suggestions for future research build on the findings of this study and offer opportunities to investigate further and improve the understanding of the EdTech industry in Bangladesh.

REFERENCES

- Arora, J. (2014) *Overview of Edu Business Models*. Available from: <https://EdTechhandbook.com/business-models/overview-of-EdTech-business-models/> [Accessed: 6 January 2023].
- Babu, M.U. (2022) *Bangladesh set for an EdTech revolution*. Available from: <https://www.tbsnews.net/tech/bangladesh-set-EdTech-revolution-360985>.
- Balocco, R., Cavallo, A., Ghezzi, A., et al. (2019) 'Lean business models change process in digital entrepreneurship.' *Business Process Management Journal*, 25 (7).
- Bhattacharjee, J. (2021) *EdTech Industry Overview: Bangladeshi EdTech Startups*. Available from: <https://businessinspection.com.bd/EdTech-industry-overview-bangladeshi-EdTech-startups/>.
- Björkdahl, J., Fallahi, S. and Holmén, M. (2022) 'Explaining business model innovation processes: A problem formulation and problem solving perspective.' *Industrial Marketing Management*, 105 (4): 223–239.
- Blank, S. (2013) *Why the Lean Start-Up Changes Everything*. Available from: <https://hbr.org/2013/05/why-the-lean-start-up-changes-everything>.
- Braun, V. and Clarke, V. (2006) 'Using Thematic Analysis in Psychology.' *Qualitative Research in Psychology* [Online]. 3 (2): 77–101. Available from: <https://www.tandfonline.com/doi/abs/10.1191/1478088706qp063oa>.
- Chiang, I.-C. A., Jhangiani, R. S., and Price, P. C. (2015) *Research Methods in Psychology—2nd Canadian Edition* [e-book]. Available from: <https://opentextbc.ca/researchmethods/>
- Eriksson, P., & Kovalainen, A. (2008) *Qualitative Methods in Business Research* [e-book]. Available from: <https://doi.org/10.4135/9780857028044>
- Frick, J. and Ali, M.M. (2013) 'Business Model Canvas as Tool for SME.' *IFIP Advances in Information and Communication Technology*, pp: 142–149.

Ghezzi, A. and Cavallo, A. (2018) 'Agile Business Model Innovation in Digital Entrepreneurship: Lean Startup Approaches.' *Journal of Business Research*, 110 (110).

Groesser, S.N. and Jovy, N. (2015) 'Business model analysis using computational modeling: a strategy tool for exploration and decision-making.' *Journal of Management Control*, 27 (1): 61–88.

Holm, A.B. and Günzel-Jensen, F. (2017) 'Succeeding with freemium: Strategies for Implementation.' *Journal of Business Strategy*, 38 (2): 16–24.

Holon IQ (2023) *2022 EdTech VC funding totals \$10.6B, down 49% from \$20.8B in 2021*. Available from: <https://www.holoniq.com/notes/2022-EdTech-vc-funding-totals-10-6b-down-from-20-8b-in-2021>.

Hughes, J. E. (2019) 'Learning across boundaries: Educator and startup involvement in the educational technology innovation ecosystem.' *Contemporary Issues in Technology and Teacher Education*, 19(1): 62-96

Leonard, K. (2019). *Six Types of Qualitative Research*. Available from: <https://bizfluent.com/info-8580000-six-types-qualitative-research.html>

Osterwalder, A. and Pigneur, Y. (2010) *Business Model Generation: A Handbook for visionaries, Game changers, and Challengers*. Hoboken, Nj: Wiley.

Randhawa, K., Wilden, R. and Gudergan, S. (2020) 'How to innovate toward an ambidextrous business model? The role of dynamic capabilities and market orientation.' *Journal of Business Research*, 130.

Renz, A., Krishnaraja, S. and Schildhauer, T. (2020) 'A new dynamic for EdTech in the age of pandemics.' *Special Call for Contributions on Crisis-driven Innovation ISPIM 2020*, June. Available from: <https://publications.informatik.hu-berlin.de/archive/cses/publications/Anewdynamicfoedtech.pdf>

ROOTs Edu - Crunchbase Company Profile & Funding (n.d.). Available from: <https://www.crunchbase.com/organization/ROOTs-edu> [Accessed: 16 March 2023].

Ruhul Kader (2021) *Bangladesh Tech Briefing: 12 Observations About EdTech Market in Bangladesh Plus Dorik, Evaly, Shikho, and Tap - Future Startup*. Available from: <https://futurestartup.com/2021/07/29/bangladesh-tech-briefing-1-dtech-bangladesh/> [Accessed: 24 March 2023].

Ryan, F., Coughlan, M. and Cronin, P. (2007) 'Step-by-step Guide to Critiquing research. Part 2: Qualitative Research.' *British Journal of Nursing*, 16 (12): 738–744.

Sikandar, M.A. and Rahman, P.F. (2021) 'EDTECH START-UPS IN THE EDUCATION ECOSYSTEM IN THE POST-COVID-19 ERA IN INDIA.' *Towards Excellence*, pp: 914–921.

Snihur, Y. and Zott, C. (2019) 'The Genesis and Metamorphosis of Novelty Imprints: How Business Model Innovation Emerges in Young Ventures.' *Academy of Management Journal*, 63 (2).

Tracxn (2022) *EdTech Startups in Bangladesh*. Available from: <https://tracxn.com/explore/EdTech-Startups-in-Bangladesh>.

Tracxn (2023) *Top EdTech Startups*. Available from: <https://tracxn.com/explore/Top-EdTech-Startups> [Accessed: 16 March 2023].

Ulanova, Y. (2021) 'IMPACT OF COVID-19 ON BUSINESS MODEL INNOVATION AT EDTECH STARTUPS.' [Online]. Available from: <https://jyx.jyu.fi/bitstream/handle/123456789/75352/URN%3ANBN%3Afi%3Aju-202105072650.pdf?sequence=1&isAllowed=y>

Zubairi, A., Kreimeia, A., Kaye, T., et al. (2021) 'Country-Level Research Review: EdTech in Bangladesh.' *EdTech Hub* [Online]. Available from: <https://docs.EdTechhub.org/lib/QUJHNPRD> [Accessed: 27 March 2023].

10 Minute School (n.d.). Available from: <https://www.facebook.com/10minuteschool> [Accessed: 16 March 2023].

APPENDICES

Thematic Analysis:

Business Model

Content	Context	Comment
Value proposition	Roots is a growing EdTech startup with a focus on test and exam preparations	<i>"We call ourselves (Roots) a test-preparation solution"</i>
Customer Segment	SSC- Secondary School Certification (Grade 10) HSC- Higher School Certification (Grade 12) University Admission- Test exam after high school graduation	<i>We provide courses to a wide range of K-12 students but primarily to the SSC, HSC, and University Admission Candidates</i>
Revenue Stream	One-time payment, Subscription based model	<i>"Now our revenue model is based on One-time payment and subscription-based model"</i>
Channels Revenue Stream	Brand partners and students	<i>*Affiliate marketing is one of the crucial factors for generating revenue for Roots Edu (and others)</i>
Channels Value Proposition	Subscribers outside Dhaka	<i>'BD EdTechs provide the best teachers from Dhaka to all BD with a reasonable price and extra cost' "Outside Dhaka market is accepting edtech more"</i>
Channels	Roots Edu had Freemium Business Model but in a different way	<i>A big focus is on mainstream platforms- YouTube, and Facebook where we distribute Free content and promotion activities.</i>

Key Partners	The new teachers go through a comprehensive hiring process	<i>"Course instructors are the influencer marketers because of the credentials"</i>
Revenue Stream	10MS is currently a private-owned company, but at first, it was more of a non-profit organization	<i>"At first we had a complete Sponsorship model"</i>
Customer Segments	Skill development, admission, academic, language learning, job section	<i>Mostly we have products for a lot of verticals, with a variation in the Skill development area</i>
Cost Structure	Course sell (One time), Subscription, some 80-20 bestselling products	<i>Operation costs are run through product revenue, but innovation and R&D is dependent on Investment</i>
Value Proposition Revenue Stream		<i>10 MS has 25000+ free videos and content and is supplied to many customers. If they want to upgrade, they can pay for better content.</i>

Business Model Innovation

Content	Context	Comment
Key Resources	Teachers from Udvash, Vision-India, EdTech	<i>"Roots Edu was the first EdTech Platform that brought Digital Board in BD"</i>
Value Proposition	Root has the doubt solver feature	<i>"Doubt solve feature is one of our Unique Selling Points"</i>
Revenue Stream	All-in-one model; Not feasible	<i>"EdTech companies pain point- People of bd perceive Education should be free, willing to pay less money"</i>
Revenue stream	Roots is the first prominent edtech to utilize a doubt solver	<i>"We managed to earn a handsome chunk of revenue incorporating the doubt solve feature"</i>

	feature for their revenue stream	
Customer relationship		<i>"EdTechs might move towards the SaaS model slowly cause people are moving towards personalization"</i>
Revenue Stream	10 MS had an advantage because it could be fully online from day 1	<i>"When covid came, it hit companies with a sponsorship model" "So next we had to come up with a product"</i>
Customer Segment	Class 8-class 12 (main) Skills (wide range) 15-24	<i>The Target group of the skills section depends on what stage of life they are in; and we have figured out over time based on Analytics</i>
Key Partners	Parents make the decision about where the children will invest money (Academic) Collaboration	<i>Revenue wasn't a focus initially, Reach was our focus, because the sponsor wanted the visibility. Then we had to turn towards revenue i.e., paid model; Now we have both foci.</i>
Channels	Initially, 10MS started its operations through Facebook live	<i>"We now even have an app for children"</i>

Lean Startup Approach

Content	Context	Comment
Value proposition	Course outline on digital platforms happens with an iterative process	<i>"Use of the Facebook community to ask for feedback and build communication and know what they want"</i>
Value proposition	Continuous Feedback on	<i>"Lean startup approach is especially important for EdTech Startups" "To develop</i>

	content helps to stand out from the competition	<i>the product based on what customer wants” ”In the last couple of months, apps were updated based on the customer demands”</i>
Value proposition	The platform was focused on multiple-choice questions. But students asked for practice written exams as well	<i>“For participating in written exams, the platforms optimized for students.”</i>
Value proposition	Freelance was a need during Covid. So they addressed the need and build a product	<i>“We first find a pain point of the Target Group, create a Minimum Viable Product (MVP), launch that, and then make continuous improvement based on feedback and progress. The product or service keeps updated and adjusted with the needs.”</i>
Value proposition	Shikho has the time and progress tracking, to improve the experience	<i>“To improve education, you need to compare” ”Data analytics has a future in edtech” and” Analytics help in lean approach”</i>
Customer Segment		<i>By focusing on the customer and following a lean approach, we can keep the retention rate</i>
Customer Segment	Class 8-class 12 are the main target group. Additionally, the Skills section has a wide range of target groups aged from 15-34	<i>Target group of the skills section depends on what stage of life they are in, and we have figured out over time based on Analytics</i>
Revenue Stream	Experimented with the first product as a	<i>Right now, we have moved towards a subscription model and making products</i>

	book and became successful	
Customer Relationships		<i>A lean practice we follow is by giving discounts to courses to match the expected price point of customers</i>

Success Factors:

Content	Context	Comment
Instructor Credibility	Educational credential, teaching experience, Educational Background	<i>"BD people tend to believe that good institutes' students mean good teachers</i>
Parents	In Bangladesh, teenagers most purchasing decisions are taken by their parents	<i>"Buying power is still in parents' hands"</i>
Influencer Credibility	When we decide to recruit someone, everyone has to have the authority to be a star product.	<i>10 MS believes that one has to have some authority over what he or she teaches</i>
Leader figure	The face of 10MS is more known to people. Trust and accountability.	
Technology adaptation (Timing)	Covid played a big role in adapting the technology to the people and building a better technological infrastructure	<i>People adapted to technology during covid for every need Before covid we had to invest a long time in technological adaptation and education. But after covid, that struggle is eased</i>
Engagement	Customer attention	<i>Shikho is bringing visually appealing and animated content, that's engaging for teenagers</i>
Differentiation	10 MS is perceived as Accessible, affordable, and simple to use; which	<i>"Abundant Free resources content, Innovative products like Smartbook,</i>

	differentiates it from the competition	<i>etc. also gives 10MS a competitive advantage”</i>
Analytics	Shikho has the time and progress tracking, to improve the experience	<i>“To improve education, you need to compare” ”Data analytics has a future in edtech” ”Analytics help in lean approach”</i>
Teacher, Community	Students need a role model	<i>”For EdTechs Communication is very important”</i>
Reference, Words of mouth	In Community building, strong references and words of mouth become very important	
Investment	Funding and Investment are crucial for an edtech startup at the blooming phase of the Bangladesh Edtech Industry	<i>Investment can play a success factor because there’s much to educate people</i>

Challenges

Content	Context	Comment
Online reluctance	One of the main struggles for Edtech platforms is to convince people (parents) to purchase high ticket course	<i>Parents determine money usage and they have not yet accepted online format (at least for not expense of good money) - They’ll prefer offline platforms when it comes to expensive or premium courses</i>
Technological Infrastructure	EdTech of Bangladesh is growing, However, people still face a technological barrier	<i>”The companies can’t provide their best because they have to adjust to the technological infrastructure”</i>

Unwillingness to pay	Most people still focus on price and have a mindset of not paying much for an online course	<i>*The EdTech companies have to cut down the cost of operations to generate cheaper content*</i>
Teacher's background	People are still considering teachers' backgrounds more than the content	<i>"There are still biases towards own school and college teachers and their private tuition"</i>
Internet connection	Even in Dhaka (the Capital city), many places don't support good internet connectivity, let alone the other parts of the country	<i>India's EdTech startups has grown with faster connectivity when Jio came into being, but we can't due to our poor connectivity</i>
Ecosystem	The school and college ecosystem lean towards offline coaching centers	<i>"Yes, there is a bias toward offline coaching"</i>
Parents' trust	There is still a prevailing belief that children will be distracted when they get access to smart devices	<i>"Parents are not willing to give devices to children for online"</i>
Content knowledge	There are ample platforms where one can find similar content; many of those are giving away it for a free or low price	<i>"Content knowledge is getting free day by day"</i>

Availability of resources	The Edtech industry of Bangladesh is not yet well financially-backed, especially the small startup ones	<i>"We don't have enough resources for better products and services. Tools and software (resources) are very costly at least for early-stage startups." "We have huge data but resources shortage especially good data analysts/data scientists"</i>
Purchasing trust	An important factor while making a purchase decision is Trust	<i>"We can't bring high-end products to market yet, cause our people don't trust online-based products/services yet"</i>
Technological education	Still needs to be educated on how to use the service Technology People are not willing to pay as much as they would pay offline	<i>"Tech-end is still a bottleneck for any project" "Technological infrastructure and resources are a big challenge from our end as well"</i>
Price competition	EdTech platforms compete heavily on price i.e. lower the pricing point	<i>A big USP for choosing an online platform is price, that's why edtech platforms can't properly create higher-quality products But a few are high-ticket</i>
Internet accessibility	Smartphone penetration is increasing, however, good Internet connectivity to every corner of the country is not yet realized.	<i>"Internet is a barrier as you do class through smartphone"</i>

Opportunities

Content	Context	Comment
New EdTech supports	EdTech in Bangladesh is still perceived as a “course selling platform” but there's much more potential for business.	<i>Companies started to arrive to support the booming edtech, schools</i>
New EdTech Segment	Ostad is the first live-streaming education platform in Bangladesh that provides a rigorous online Bootcamp for in-demand job skills.	<i>*Personal development sector is gaining traction, for example, EdTechs like OSTAD filling the need”</i>
Investment	A big part of the cost for edtech, especially the pioneer ones, goes into educating the people.	<i>Investment can play a success factor because there’s much to educate people</i>
Funding	EdTechs are receiving funding from local and global investors.	<i>“Many Other Edtechs are receiving good investments”</i>
Analytics	Shikho has the time and progress tracking, to improve the experience	<i>”Data analytics has a future in edtech. “To improve education, you need to compare. Analytics help in lean approach too”</i>
Market	The population of Bangladesh is huge and the edtech	<i>” The population here is vast”</i>

	market is ever growing	
Skill focused area		<i>"As a society, Though we value degrees more, the industry is leading toward skill, So skill focused edtech is an opportunity:"</i>
Market development	Education is coming in different formats, Skills are also education	<i>"Education will always be a necessity. There is a limitless sphere of education. EdTech is one of the most sustainable industry will be out there for the next decades"</i>
New EdTechs	The whole education and job systems have lots of exams and therefore lots of opportunities for new ed techs.	<i>"BD people are serious about Education. The market is very untapped, The industry is very big and only certain portions were there. There are still a lot of untapped markets outside Dhaka and in different education segments"</i>
Market development	Skills development sector is a very demanding yet untapped market	<i>There are a lot of gaps in the market and if one focuses on a subsection, there is an opportunity</i>
Service based business model (SAAS)	Personalized features and services are gaining traction	<i>Tech-savvy generation coming, so here Community engagement and Aftersales service are very important</i>
Timing	With the advent of covid, the industry and people are now more ready to adaption.	<i>People have grown mindset about investing in education more now than before, so the industry is now more ready than 5-6 years back"</i>
Analytics Personalization	Customization is very possible.	<i>"Edtech being a part of digital space, there are lots of data and analytics, therefore, is becoming crucial and leads to personalization.</i>

Abroad education	Bangladesh has many education problems. So are a lot of opportunities.	<i>People will shift towards digital space. What happens in the world, happens to bd 5/10 years; for example- abroad education; edtech should have a steady and sustainable growth”</i>
Study abroad	Studying abroad has a lot of information gap	<i>“Study abroad area has a lot of gaps, nobody knows what to do and there aren't reliable sources” Moreover a lot of people are interested and the market growing- and it's a huge</i>

