

BUSINESS POLICY & STRATEGY – CAPSTONE**Najaf Babayev**

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Mars academy is currently facing the problems related to low visibility and low budget for marketing related issues. The task was to facilitate the problem of the company by using low cost techniques. The analysis of the international and national trends, market characteristics, target market, and competition in the market is introduced firstly to show our empirical analysis. Moreover, the important part of the project was the research done through survey. Finally, the solutions are introduced alongside with recommended budget for implementation.

Keywords: MARS Academy, STEAM, Education.

Introduction. Aims and objectives. This project is designed to facilitate the low awareness and weak marketing problem of the MARS Academy. The project aims to find precise solutions for the company to implement and to give further recommendations on how to facilitate the situation.

As a first step, it was necessary to list objectives for the planning and execution of this project. Taking into consideration, Mars Academy's description, current status and their expectations about this project, we focused on 4 objectives. Our first objective was to identify current situation of the market and detect ongoing trends. Generally, it is always necessary to check and inspect the situation and proposing solutions and recommendations to Mars Academy based on what we found about the situation. Thus, we conducted a market research in order to find answers to our questions. Secondly, we wanted to forecast possible costs and revenues which can be derived through the implementation of our marketing strategy for Mars Academy. We strived to decrease the cost of our plan as much as we can, given that Mars Academy is a new organization, therefore their revenues are not very high yet. Thirdly, we wanted to make a competitive analysis of Mars Academy to other companies. Despite the fact that, no company offers STEAM education to the pupils, however there are other indirect competitors such as language centers, other educational, musical and sport courses which parents choose to send their children there. Thus, we coveted to find the differentiation factors of Mars Academy and build our marketing plan on these components. Fourthly, we proposed solutions and recommendations given on the results of our marketing research, data from Mars Academy and possible cost-revenue analysis of our marketing plan.

Short description of the problem/assignment

As Mars Academy is a relatively new company, it faces several challenges in the implementation of its strategies. Problem is related with budgeting of marketing operations. As in every new company, Mars Academy have not generated a lot of revenue yet, therefore they try to decrease cost of marketing operations for sustaining revenue-cost balance. They have relatively low visibility and therefore, the awareness about Mars Academy and STEAM educational model among parents is not quite eminent. Another problem was about

limited human resources to work on the marketing related activities and this problem is directly related with limited budgeting.

Literature Review

Reviewing the literature about the STE(A)M education revealed that the first step to do for promoting the STE(A)M education is correctly defining and clarifying the meaning of the acronym. Gess (2017) pointed out in her article about the how science, technology, engineering and math (which are factions of STEM educational system) are important for driving any country's prosperity and well-being forward. Moreover, she also gives information about the hallmarks of STEAM education and the importance of how it can be integrated, intentional and designed by making pupils to be interested in this education and answering to the demands of 21st century at the same time. Among the significant challenges related to promotion of STE(A)M education, Bybee in his book, highlighted the literacy of Steam to be most important to achieve among parents and children.

As for Bybee, Steam has become new trend in education for the people but actually, the purpose of the slogan itself is not very clear for the people. (Bybee, 2013). However, important notice was that the detailed definition and clarification of the STEAM education is not always easy to find. Yu Xie, Michael Fang, and Kimberlee Shau-man in their article about STEAM Education concerned about the issue of literature about Steam. They were realistic in saying that the recent literature is mostly about the social factors influencing the general education but not specifically STEAM education. (2015). The fact itself created difficulty for this and other research papers on STEAM education. However, the significance of the family for educational results is entrenched in human science is affirmed in the article. The authors showed us several examples taken from classics that influence of parents and their education on the choice of the future education of the children is essential. The importance of family in choice of STEAM education is also emphasized and analyzed in article, so this was the starting point for the choice of the projects' direction.

Survey

The data used in the research was collected with a help of a survey. Survey was web-based questionnaire. A total of 306 people participated in

the survey as respondents and the questions asked were mainly related to the people's thoughts on STEM and extracurricular activities in general.

Questions related to people's income, costs, age, child count, education are also asked. It is because these factors might have a strong impact on people's decisions regarding their children's activities. Thus, this information would let us to better understand which age, income and education group are more likely to let their children participate in STEM courses and to define our target group, its characteristics and size.

Data from Company

The data was also collected from Mars Academy's financial statement because implementation of marketing strategy also needs to be questioned from financial perspectives. Since we have signed NDAs with the company, this information will not be enclosed. It is solely used in purpose of designing budget and forecasting purposes.

Research methodology design and data collection

Our methodical approach to address the indicated research objective was to target customers who are 30 and above. These people have higher chances of having a child that can attend the services of the company. Sole research instrument was web-based questionnaire survey. The survey was designed in *Google Forms* and consisted of 4 various parts and 14 questions. The survey was conducted in both Azerbaijani and English languages to allow the respondent to choose the language he or she feels comfortable answering. Both formats of close-ended questions (selecting a choice, rating scale) are used. In some multiple-choice questions, such as age, education level only one option could be chosen, whereas others, such as important subjects, had the possibility of choosing more than one option. As per the second format, Likert scale was used with ratings ranging from 1 to 5. The main motivation for employing close-ended questions was that responses to the questions are comparable to each other since it is pivotal in using analytical methods (D. Aaker et al, 2013). Moreover, further benefits of this format are its ease of use and decrease in potential error rate.

Sequence of the questions as first administered in terms of questionnaire's ease of answering for the respondents. After these considerations are satisfied, attention was given to the order of bias problem. It is the problem when preceding question's potential answers have an impact on the ones that follow it (D. Aaker et al, 2007). To overcome this problem, the survey starts with easy and non-threatening questions, such as age, education level, to make respondents get comfortable with the questionnaire. Then more specific (STEAM-related) and sensitive (income related) questions are asked.

According to Shauman et al (2015), parents' education and occupation have been proven to influence their children's education. For this reason, parents' education level is asked in questionnaire. Further, it is tested in our regression to identify its significance. Moreover, question related family's income level and expenditure was included in questionnaire as it is suggested by Shauman et al (2015) that family's socioeconomic status is strongly associated with children's success in math and

science and their interest in STEM courses. Family's positive attitude towards STEM education increases their children's participation in STEM courses (S. Marginson et al, 2013). This triggered us to ask our respondents about their thoughts on STEAM education and general extracurricular activities.

Population and Sampling

The population of this research is the people living in Baku and Sumgayit, where the medium of transportation is attainable. Further narrowing it down, population is reduced to the people aged 30 and above since they have higher chances of having a child than can participate company's services. A total of 306 people participated in survey. 40.9% of participants were between 30-34 ages, 33.1% of people older than 35, 12.7% between 25-29 ages, 12.7% between 20-24 ages and remaining younger than 20.

As per the sampling method, non-probability judgmental sampling method, is employed. This method is employed since everyone is not qualified to be our customers. Web-based survey was directed at potential respondents we judged to be qualified. Survey was sent to the families, friends, relatives, co-workers, neighbors.

Validity and reliability

There are no scientific, fool-proof method to test the validity of questionnaire. However, there are methods to attain this goal. The questions in the survey should be based on prior research whenever possible. Most of the questions in our questionnaire is based on research. The second potential concern is the total error of the study. Total error refers to the difference between the true mean value in our population and mean value observed in our sample (D. Aaker et al, 2007). Since the sample of this research is chosen individually, it is argued to be a solid representation of the population. It is worth noting that respondents were limited to the acquaintances of the six researchers.

Data Analysis

Data analysis method used was Ordinary Least Squares method. It is an econometric method letting us build simple regression models. OLS analysis are run using E-Views software. General matrix form of the model is as follows:

$$Y = X\beta + \varepsilon$$

where Y ($n \times 1$) is dependent variable, X ($n \times k$) is the matrix of independent variables, β ($k \times 1$) is the matrix of coefficients, ε ($n \times 1$) is the matrix of the error terms and follows $\varepsilon \sim N(0, \sigma)$. To test for the significance of the coefficients, we use T test and see whether a coefficient can be 0 or not. If a coefficient can be zero, then it means that variable have no significant impact on our dependent variable.

Project findings and its implications

Survey Report. *To analyse the general situation of potential consumers, to understand demand side of the market, and to decide on best possible market segments related to age and income levels a survey is conducted.*

A total of 308 people participated in survey. 40.9% of participants were between 30-34 ages, 33.1% of people older than 35, 12.7% between 25-29 ages, 12.7% between 20-24 ages and remaining younger than 20.

Neçə yaşınız var? / How old are you?

308 cavab

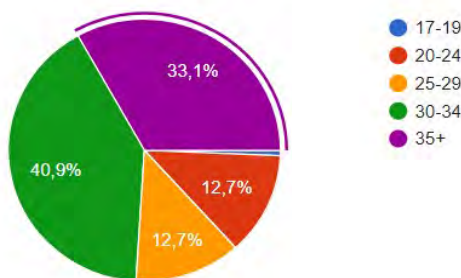


Figure 1. Result of the questionnaire about age

Source: Created by author

Most of the people (36%) who participated in the survey has 2 children. Only 14.3% of them has no child.

Neçə övladınız var? / How many children do you have?

308 cavab

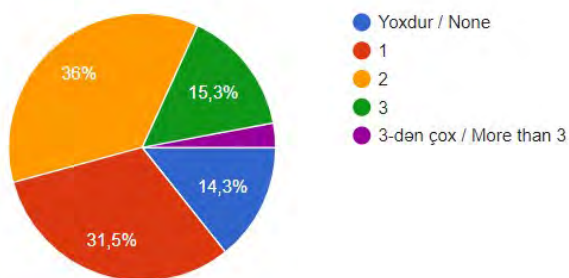


Figure 2. Result of the questionnaire about the number of children in family

Source: Created by author

People who participated in the survey, mostly have bachelor's degree (48.7%) and Master's degree (38.3%).

Təhsil səviyyəniz nədir? / What is your education level?

308 cavab



Figure 3. Result of the questionnaire about education level

Source: Created by author

The father has main role in decision-making within the family, as well as the mother has great role in the family regarding children.

Majority of the people who participated in the survey earns more than they spend. The results are shown below.

Ailənizdə uşaqlarla bağlı qərarları kim verir? / Who is the decision maker in your family regarding children?

300 cavab

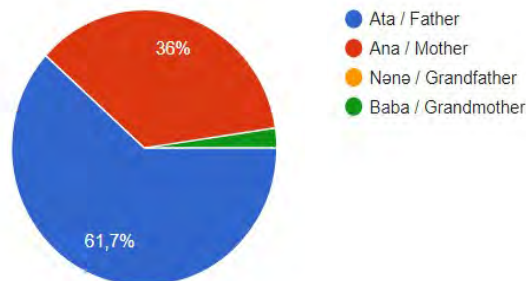


Figure 4. Result of the questionnaire about decision maker in family regarding children

Source: Created by author

Aylıq xərcləriniz nə qədərdir? / How much is your monthly expenditure?

308 cavab

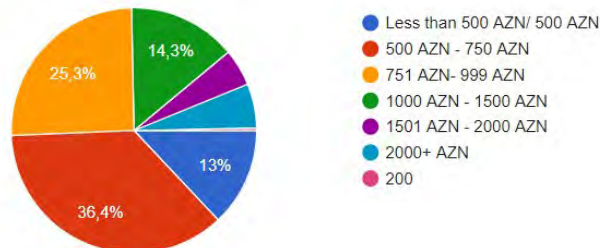


Figure 5. Result of the questionnaire about monthly expenditure

Source: Created by author

Aylıq gəliriniz nə qədərdir? / How much is your monthly income?

308 cavab

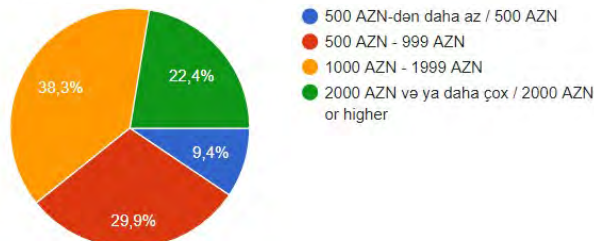


Figure 6. Result of the questionnaire about income

Source: Created by author

In general, majority (91.3%) of the participants support extracurricular activities of school children. 0% of them think that they are not important at all. 5 is very important, 4 is important, 1 is not important at all.

Subject Selection. There are very separated opinions about which subject is best for children. Engineering is considered to be important by least number of participants (25%), while Math is selected by largest number of participants (54%), followed by Science (49%) and Robotics, Technology (21%).

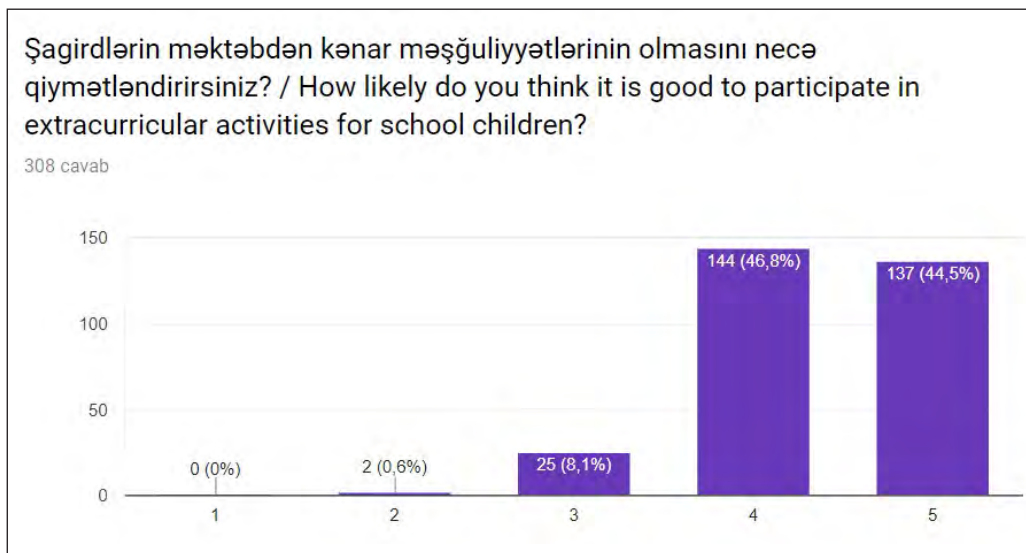


Figure 7. Result of the questionnaire about extracurricular activities

Source: Created by author

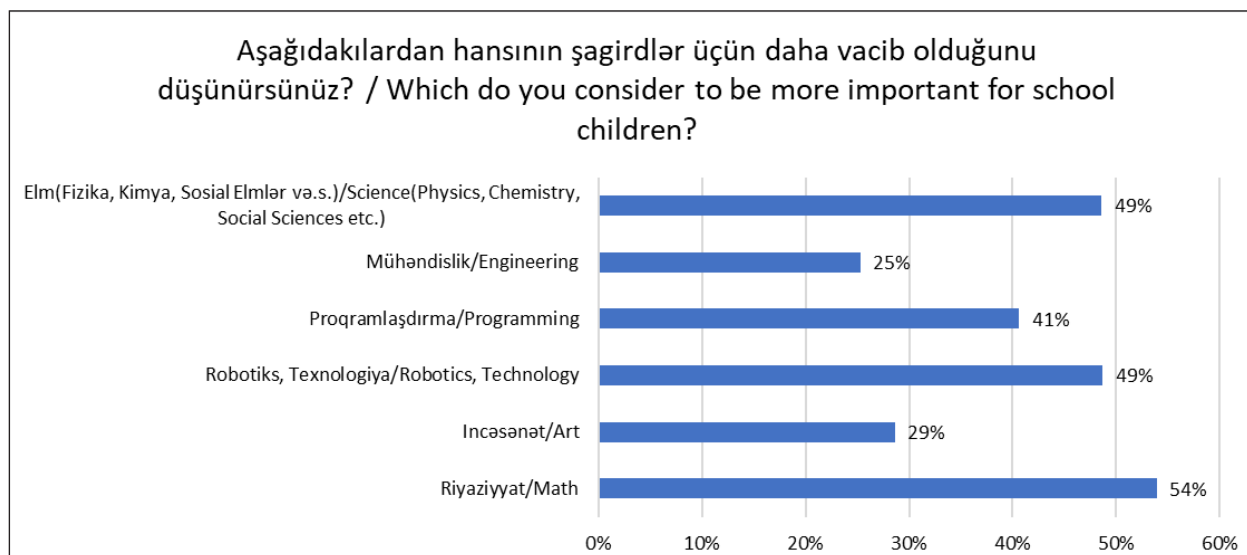


Figure 8. Result of the questionnaire about importance of the subject for children

Source: Created by author

Sizcə məktəbdən kənar məşğuliyyətlər üçün ən yaxşı yaş aralığı hansıdır? / What do you think to be the best age range for extracurricular activities?

308 cavab

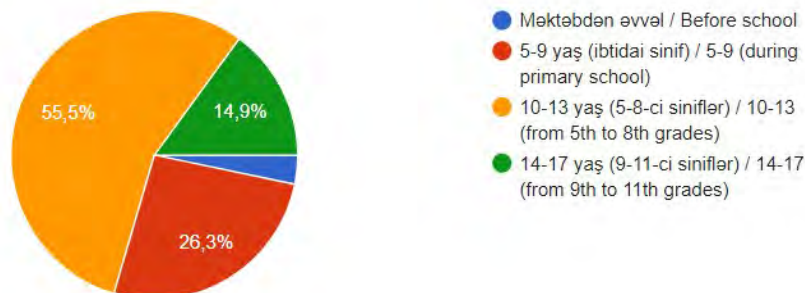


Figure 9. Result of the questionnaire about the right age for extracurricular activities

Source: Created by author

Övladlarınızın STEM dərslərinə getməsi üçün ödəməyə hazır olduğunuz maksimum məbləğ nədir? / What would be the maximum amount you would pay for your children's participation in STEM courses?

308 cavab

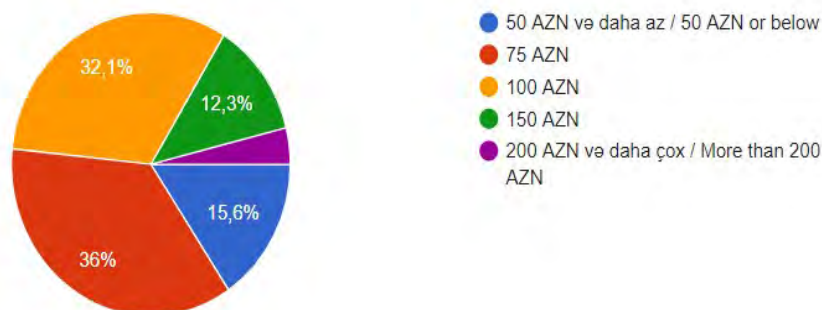


Figure 10. Result of the questionnaire about maximum payment for STEM studies

Source: Created by author

Child Age. 55.5% of participants think that it is best to participate in extracurricular activities between ages 10 and 13 which is from 5th to 8th grade in Azerbaijan. Overall the survey shows that, 1013 ages of children are a good target for STEM education.

The survey shows that, willingness to pay for STEM courses changes around 75-100 AZN. High price doesn't make any sense in most of the people for to pay and low prices also make a question about quality of the service.

Plan of solution

Several techniques are possible for improving marketing actions and increasing awareness about the STEM education in Mars Academy. Starting with costless promotion techniques and saving money for long run projects is more appropriate for the company's current situation.

The technique chosen to be most appropriate for increasing awareness and profits of the Mars Academy is assigning one very responsible PR manager to Mars Academy and giving him specific tasks to increase awareness. The cost of hiring PR Manager will be 500azn per month. Even if office space is not enough for him/her, PR Manager can freely work from home and be always in meetings outside. The PR Manager can also hire one intern to help him/her with the work. Intern can be hired in unpaid basis. The tasks of the PR manager can be classified in below mentioned types:

Implementation of the "Junior School Ambassadors" Program:

It is highly recommended to start Junior School Ambassadors program by hiring interns from high school or 1st year university students. They will be hired in non-paid basis and get acquainted with the processes and go to schools and universities to promote the courses. At its core, School Ambassadors program will improve to change social factors of hesitant possible customers and help them to learn about the courses. The school ambassadors will be trained in a way that they will harness the power of socially-influential ambassadors (Har-

er, 2017). The recruited students will participate in trainings that will be 1 day in a week. They will be taught about the work done and they themselves will be provided the opportunity to audit the courses. They will be provided with 3 questioned surveys which will be filled out by parents. The surveys are important because one of the questions included in the survey will be asking their mail address and phone numbers which is essential for building the emailing list.

The ambassadors will be in school yards, in parental meetings, in school concerts and other school related events. The permission will be taken from partner schools. They can even be sent to new partner universities to inspire the science and technology students to come to teacher training courses. The cost of this implementation will be only the cost of the survey papers, brochures, and trainer teachers. 1 training per week can be done by one teacher which will be given 10 Manats extra per week: $10 \times 4 = 40 \text{AZN}$ extra for one ambassador teacher. Teacher for being the ambassador trainer can be chosen for young workers of the courses. The cost of one brochure will be 1azn; $1 \times 100 = 100 \text{azn}$ per month. 100 brochures per month will be enough if distributed very carefully. The cost of small survey papers will be 0.01qepik. 300 surveys per month will be enough: $300 \times 0.01 = 3 \text{azn}$ per month.

Connecting with educated people through presentations in universities and well-known companies about the importance of STEM education:

The PR manager should also connect with the educated people through presentations in universities and well-known companies about the work done by MARS ACADEMY. It is essential because regression output has shown that the more educated the person the more possibility is he/she is going to take his/her child to STEM courses. The presentations should be very short not to interrupt the work schedules of participants and should be done inside those companies and universities. Children of university staff and foreign company staff can be possible clients of the course. The international

Table 1

Name of Expenses	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Salary of new PR Manager	500	500	500	500	500	500	500	500	500
Cost of Trial Exam	37.5	0	0	0	37.5	0	0	37.5	0
Free education for one winner	90	0	0	0	90	0	0	90	0
Cost of Survey	3	3	3	3	3	3	3	3	3
Accommodation for exams	60	0	0	0	0	60	0	60	0
Brochures for Corporate Businesses	30	30	30	30	30	30	30	30	30
Cost of Facebook Ads	255	255	255	0	0	255	0	255	255
Cost of Instagram Ads	255	255	255	0	0	255	0	255	255
Cost of Google Adwords	153	153	153	0	0	153	0	153	153
Total Cost	1383.5	1196	1196	533	660.5	1256	533	1383.5	1196

Source: Created by author

trends also showed that the children of immigrants are more inclined to take part in that kind of courses so they should be reached and informed. The fact that foreigners are mostly working people, it is very good idea to share about the Mars Academy within international or big companies of Azerbaijan.

Connecting with school managements for partnerships and connecting with university managements to attract young and talented entry level teachers to teacher training center:

The PR manager should always be in contact with possible partners like universities and schools and give the brochures or send informative emails. Initially 40 brochures will be enough for corporate work. $30 \times 1.00 = 30 \text{azn}$ per month for the brochures being distributed to school and university management.

Another recommendation is about the potential cooperation between Mars Academy and several schools and companies. Schools like Avner Chabad (the private Jewish School in Baku), TISA, Baku Oxford School and Zarifa Aliyeva Lyceum can be interested in the organization of STEAM courses in their schools. For example, they can assign special lesson hours for STEAM classes and instructors

of Mars Academy can come to these schools and teach STEAM courses. Furthermore, State Oil Fund of Azerbaijani Republic can be willing to provide most funds among the all funds in Azerbaijan, as they divide a huge amount of money for educational investments. Companies such as Azercell, Deloitte and Engin also can be interested to divide some proportional money from their revenues, as they are famous for their generous contributions to social responsibility projects in Azerbaijan, particularly, they are chief sponsors of annually held competition ABCC (Azerbaijani Business Case Competition) among junior and senior business administration and economics students from the best universities of Azerbaijan. So, Mars Academy can devote their efforts for creating links and ties with these organizations.

Budget Plan for Mars Academy

It is very important to prepare the budgeting of our marketing strategies. Calculation and forecast of the costs and revenue is vital to analyze the viability and reliability of our marketing plan. Thus, we have calculated and prepared several tables and graphs which will be share in this section.

Table 3

Expected number of students in 20182019	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Robotics	68	73	75	77	69	77	73	80	76
Programming	14	17	18	19	14	16	15	19	17
Engineering	11	13	14	15	12	14	11	16	14
Digital Art	12	15	16	17	13	14	15	18	16
Total	105	118	123	128	108	121	114	133	123

Source: Created by author



Figure 11. Expected Revenues

Source: Created by author

This table depicts the possible costs of our marketing strategies. As it has mentioned above, the salary of PR manager is estimated to be around 500 AZN and this salary will be paid in every month, so this cost is continuous. Secondly, free trial exam for the interested pupils will be another expenditure. However, we propose to Mars Academy to conduct these trial exams only 3 times in next educational year due to some budget restrictions in September, January and March. This trial exam will have some costs, as it is visible from the table. As this exam will be conducted in 3 classrooms, the accommodation of these classes can cost around 60 AZN. Furthermore, the assignment of 3 proctor will worth around 30 AZN. As this exam is planned for 50 people, the cost of papers and tickets for examination will be around 5 AZN and 2.5 AZN respectively. Additionally, the winner will be awarded with 1 free course and this will result the forfeit of 90 AZN profit which is another cost. In sum, we expect that this trial exam will cost to Mars Academy around 188 AZN.

Table 2

Components of Trial

Exam	Cost
3 Proctors	30
50 Papers for exam	5
50 Registration Tickets	2.5
1 free month for winner	90
Accommodation	60
Total	187.5

Source: Created by author

Our next recommendation to Mars Academy is about to publish and give its business brochures to several companies in order to increase cooperation among these companies. We expect that the 30 brochures per months is enough and each will cause 1 AZN which makes 30 AZN in total.

Moreover, we prepared the number of the expected students based on the analysis of our marketing research and marketing strategies and revenue accordance with it. Basically, we calculated revenue with the subtraction of the expected number of the students from current number of students and multiplication of this number with the cost of the course 90 AZN which Mars Academy offers to its pupils.

Conclusions. The main aim of this paper is to analyze the current market situation in STEAM education market, understand trends and help MARS Academy which is a newly established company in the industry to plan its marketing budget, to increase its market visibility, to overcome market difficulties and understand its target market.

Brief overview of the main literature used was reviewed. Online websites, official data from local and international sources are used to determine current market trends and factors that affect consumer buying behavior are explained. Brief information regarding local and international trends in the market has been provided. To understand customers and consumers of the market and to determine most relevant target market based on age and income of customers a survey is conducted among 308 respondents and the results of the survey has been analyzed.

It is suggested that, most suitable parent age to focus on is between 30 and 40, while families with total monthly income of at least 1000 AZN would be a good income group to target. Based on this, market size is expected to be 40 thousand families in BakuPlan of solution has been designed to solve the marketing difficulties of the company and special consideration was given to decrease the cost as much as possible. First step in plan of solution is to hire a PR manager to carry out the suggested solutions. To increase awareness free monthly trials and “Junior School Ambassador” program have been offered. Sharing the results of students’ work and building LinkedIn page suggested to increase the credibility of company and to build its brand.

Best way to compete against your competitors is to know them. A detailed competitor analysis has been done which would let MARS Academy understand its position in the market when compared to its competitors and be able to get an important share from the market.

A positioning plan has been introduced for the company. Also, an action plan has been proposed which include our recommendations about future activities of the MARS Academy. To conclude, all the budget needed for the implementation of the strategy was introduced and the estimated 3-year profits were calculated to show the benefits of the strategy introduced.

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