

CORRELATION BETWEEN EVENT MARKETING AND YEARLY AUDIENCE IN SPORT CENTRE

Matej Pechota, Ing., PhD. student¹²⁴

Abstract Nowadays is hard time for business in every kinds of market. It is hard to find out way how to attract customers. Sport centres are specific companies on market because they work with two the hardest items on market (people and weather). Weather because sport centre in this paper provides outdoor services. For marketing manager is important to set up right activities to achieve goal. It is important to measure them too. Through this I chose one statistics method which could help in analysing marketing activities and calculate effectiveness of these activities and also if there is some correlation between two focused values. This paper focuses on research how to apply effective marketing activities to sport centre and how to find out if chose activities was right. Chosen method is good to predict next season if the number of independent values would be on this level. Statistics method is well known but it is necessary to find way how to connect them in practice and in marketing. This research produced a number of key findings: regression, correlation coefficient or coefficient of determination. These mentioned meanings are practical and it can improve company. Thanks to applied methods, it would easier to set depends and independent values and then calculate result. The main conclusions drawn from this research were that current approaches to find out new way how to analysis data in marketing. Through statistics method which is applied in this paper you can predict next season but what is more important you can model some situation and thanks to regression and correlation find out what would happen. This research argues for a model which could be helpful for marketing manager or to students. In this paper there can be found important information in research of marketing.

Key words: event marketing, correlation, sport centre, determination coefficient, audience, statistic method.

1. INTRODUCTION

Nowadays is situation when people are trying to find place where they can experience something new or they are trying to escape from work stress. These places have got many forms but one group consists of sport centres. Sport centres means place where people can do activity which is effective to stay fit and have rest. I am not talking about fitness centres. This paper is about outdoor sport centres. You can find their activities during winter but also during summer. These sport centres' have to find out way how to promote their activities and how to attract people to visit these centres. To achieve this goal sport centre has to set up marketing communication in the closest way to their customers. They should analyse their customers and after that set up the best activities to achieve bigger audience. Question is what is the best way how to promote the sport centre to the people. One way how to attract people is event marketing which can be define as tool of marketing to be more specific it is tool of sales promotion. Event marketing is very popular in this area. Event gives reason why to come. But first of all event manager has to prepare event which attract people as much as possible. This paper will also about correlation between this two articles.

¹²⁴ Ing. Matej Pechota, University of Žilina, Univerzitná 8215/1 010 26 Žilina, Slovakia

Event marketing and audience is there any correlation? I will define statistics method which shows us the number of percent how many they are connected. There will be also regression analysis. Thanks to regression analysis we can predict the number of audience in case when we would like to raise or reduce mentioned marketing activities. Do not forget that every area and every sport centres are unique. This paper will be about on untitled sports centre on Slovakia but thanks to this paper you can find out new way how to predict amount of audience in your area.

2. THEORETICAL BASES

This paper will be about one part of marketing and also it will be about one of statistics method which can help to measure or predict the trend and set up activities for next season. But first of all I will define the business area where it could be applicable.

2.1 Sport centres

In business area we know about many kinds of companies and sectors where companies are trying to offer their product or services. Sport centres are one of those companies which can offer both of mentioned items. They can offer product but services too. Product is defining as

„A product needs to be relevant: the users must have an immediate use for it. A product needs to be functionally able to do what it is supposed to, and do it with a good quality.“ [1]

Product is something physical you can feel it; you can touch it you can hold it.

Products in sporty centres are for example souvenirs. Many sport centres have got products with their logo or any other visualisation of sports centres. The main thing what sport centres provide are services. Do not change these two meaning product and service. Services are something that you cannot touch or hold. You can just use it. Services are more difficult to provide and to developed right service for customers. Services are usually connected to something else. Sport centres which I am going to write provides ski lifts, cabin and slopes. Services which they offer are for example tickets for cabin or lifts. Sporty centre is situated in national park so it one of the strength side of this centre. [2]

Sport centre is place where people can find out something new, different and they can escape from stereotype. Sport centres provides services during specific season it can be summer or winter. There are also centres which provide activities during all year. It can be indoor or outdoor sport centre. In this paper there will be mentioned outdoor centre. Outdoor sport centres mostly provide some touristic activities. They are work in tourism sector. Tourism is



Matej Pechota is *PhD. Candidate on University of Žilina. His thesis is about standards of transport time in postal sector. He also works as marketing manager in one of the sport centers on Slovakia which provides outdoor services. He used to be professional ski racer but nowadays he just does sport because it is his passion. That is the reason why he wants to participate in this market. Marketing is something what everybody knows and he would like to find out way which could help to improve marketing.*

nowadays very popular. People want to visit lot of places, experience something new / different. But you have to offer them some reason why to come that place. It is really hard to find out what the customers want to see. In connection to this it good to define one of the most important item of marketing mix. [5]

2.2 Marketing mix

Marketing mix is a business tool used in marketing and by marketers. The marketing mix is often crucial when determining a product or brand's offer, and is often associated with the four Ps: price, product, promotion, and place. In service marketing, however, the four Ps are expanded to the seven Ps or Seven Ps to address the different nature of services. Thought this marketing mix consist of four items. In next picture you can find out basic tools of marketing mix. [2]



Figure 13 Marketing mix

I chose one item which is really important to do correctly and through this item you can apply some tools which can attract people. Promotion is on part of marketing mix. All of the methods of communication that a marketer may use to provide information to different parties about the product. Promotion comprises elements such as: advertising, public relations, sales organisation and sales promotion. Now we get to main meanings which help to promote service in sport centres. It is sales promotion. Sales promotion is tool for attracting people to visit something. Through this you can give a reason why the people should come. Event is one of the tools which help us to set up a reason. Event marketing is popular because people are trying to find places where there can experience something new, taste the typical culture for each region of the country.

There are many definitions of event marketing. It is defined as the marketing discipline focused on face-to-face interaction via live events, trade shows and corporate meetings among other event types. Others define it as designing or developing a 'live' themed activity, occasion, display, or exhibit (such as a sporting event, music festival, fair, or concert) to promote a product, cause or organization.

It is good to organize events but is it really effective? Is there correlation between event marketing and number of audience? To find out if it is effective should be helpful one statistics method which name is regression analysis. Regression analysis is defining in methodology.

3. METHODOLOGY

In this chapter I am going to describe methods which I applied for trend calculation. There are three kinds of methodology which I applied. They are comparison, trend analysis and geometric mean. I am going to describe these methods for understand it easily.

a. Comparison

There are too many definitions of comparison. It depends of what field you would like to compare. But basically comparison means to find some differences between something. We can compare economics, trends, marketing campaign etc. In this case I am going to compare amount of sent items. It is comparison of statistics information. In many cases, a researcher is interesting in gathering information about two populations in order to compare them. As in statistical inference for one population parameter, confidence intervals and tests of significance are useful statistical tools for the difference between two population parameters. In this case parameters are amount of sent items in next chapter I will compare data from five years. Comparison consists of three main steps for example:

- a) Collecting data
- b) Ensure consistency of information
- c) Select on effect to compare

Comparison is able to do only when data are consistence and it is possible to compare it. You cannot compare incomparably. [3]

b. Regression analysis

Regression analysis is used when you want to predict a continuous dependent variable from a number of independent variables. If the dependent variable is dichotomous, then logistic regression should be used. (If the split between the two levels of the dependent variable is close to 50-50, then both logistic and linear regression will end up giving you similar results.) The independent variables used in regression can be either continuous or dichotomous. Independent variables with more than two levels can also be used in regression analyses, but they first must be converted into variables that have only two levels. This is called dummy coding and will be discussed later. Usually, regression analysis is used with naturally-occurring variables, as opposed to experimentally manipulated variables, although you can use regression with experimentally manipulated variables. One point to keep in mind with regression analysis is that causal relationships among the variables cannot be determined. While the terminology is such that we say that X "predicts" Y, we cannot say that X "causes" Y. Regression has got more process. In this case I will discuss only one process of regression. Regression analysis also has an assumption of linearity. Linearity means that there is a straight line relationship between the X and the Y. This assumption is important because regression analysis only tests for a linear relationship between the X and the Y. Any nonlinear relationship between the X and Y is ignored. You can test for linearity between an X and the Y by looking at a bivariate scatterplot (i.e., a graph with the X on one axis and the Y on the other). If the two variables are linearly related, the scatterplot will be oval. [4]

Regression analysis consists of smaller part which is important to calculate result. Regression can be written as:

$$y_i = b_0 + b_1 * x_i \quad (1)$$

y_i - (predictable) value of depends of variable Y,

x_i – value of undepends of variable X

b_0 - point estimate bodový odhad parametra

b_1 – point estimate

We can see that there are two unknown values b_0 and b_1 . Basically b_0 means the amount in the beginning. This article is about numbers of event and yearly audience. In this case independent value is number of event. Result of b_0 shows the audience in case when there will not be any event. On the other hand, there is another unknown value b_1 which means how would change the audience when we add one event. B_1 is well known as regression coefficient. These two unknown values can be calculated as:

$$b_0 = \bar{y} - b_1 * \bar{x} \quad (2)$$

$$b_1 = \frac{cov_{xy}}{s_x^2} \quad (3)$$

\bar{x} - average value of undepends value X

\bar{y} - avarege value of depends value Y

s_x^2 - variance of value X

cov_{xy} - covariance of thow values X and Y

As we can see there are still two values which have to calculate. First of them is variance and another one is covariance. Variance can be calculated as:

$$s_x^2 = \frac{\sum(x_i - \bar{x})^2}{n} \quad (4)$$

Second value is covariance. It means value of mixed variability consists of two statistics values X and Y. It can be calculated as:

$$cov_{xy} = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{n} \quad (5)$$

Thanks all mentioned pattern can be calculated the regression which it is done in results and discussion part of this paper. [4]

c. Correlation

Regression is good to know for predicting of something but as we can see there two values X and Y. Depends and independent values. To discover their connectivity is used correlation. Correlation has got coefficients. First is correlation coefficient and the second is coefficient of determination.

Correlation coefficient is calculating to see how strong is the correlation between depends and independent values. There are simply rules.

1. If the number of correlation coefficient is from 1 to 0,9 there is strong correlation,
2. If the number of correlation coefficient is from 0,9 to 0,8 there is correlation,
3. If the number of correlation coefficient is from 0,8 to 0,7 there is weak correlation,
4. If the number of correlation coefficient is lower than 0,7 there is no correlation.

It can be calculated as:

$$r_{xy} = \frac{cov_{xy}}{s_x * s_y} \quad (6)$$

Coefficient of determination is calculating to see correlation in percent value. Calculation of this coefficient is similar as in correlation coefficient there is just little difference. Coefficient of determination can be calculated as.

$$r_{xy}^2 = \left(\frac{cov_{xy}}{s_{x-y}} \right)^2 \quad (7)$$

Thanks to all of pattern which I have already mentioned you research correlation between two values in this case it number of events and audience during 5 years. [4]

4. RESULTS AND DISCUSSION

Untitled sports centre organized some number of event during each year. I focused on years from 2010 to 2015. If these events were effective, it is really hard say because we cannot say if they came to sport centre because of event or there was any different reason. But we can calculate correlation between these two values (number of events and yearly audience). Thanks to this we can predict the audience in case when we would organize some number of event. First of all, I had to collect the data. The numbers are shown in table.

Year	Number of events	Yearly audience
2010	5	46 229,00
2011	7	59 926,00
2012	9	76 856,00
2013	10	80 490,00
2014	12	94 396,00
2015	13	104 132,00

Table 3 Data from unknown sport centre

Thanks to this data I could calculate the correlation. Every of smaller calculation are shown in next table.

Year	Number of events	Yearly audience					
	xi	yi	(xi - xav)	(xi - xav) ²	(yi - yav)	(yi - yav) ²	(xi - xav)*(yi - yav)
2010	5	46 229,00	-4,33	18,78	-30 775,83	947 151 917,36	133 361,94
2011	7	59 926,00	-2,33	5,44	-17 078,83	291 686 548,03	39 850,61
2012	9	76 856,00	-0,33	0,11	-148,83	22 151,36	49,61
2013	10	80 490,00	0,67	0,44	3 485,17	12 146 386,69	2 323,44
2014	12	94 396,00	2,67	7,11	17 391,17	302 452 678,03	46 376,44
2015	13	104 132,00	3,67	13,44	27 127,17	735 883 171,36	99 466,28
Count	56	462 029,00		45,33		2 289 342 852,83	321 428,33

Table 4 Calculating of correlation

There are just partly results but it helped me to found out the final results which are shown in next table.

n	6,0		
xav	9,3		

yav	77004,8		
covxy	53571,4		
sx^2	7,6	sx	2,748737084
sy^2	381557142,1	sy	19533,48771
b1	7090,3		
b0	10828,4		
rxxy	0,997745806		
rxxy^2	99,55%		

Table 5 Calculating

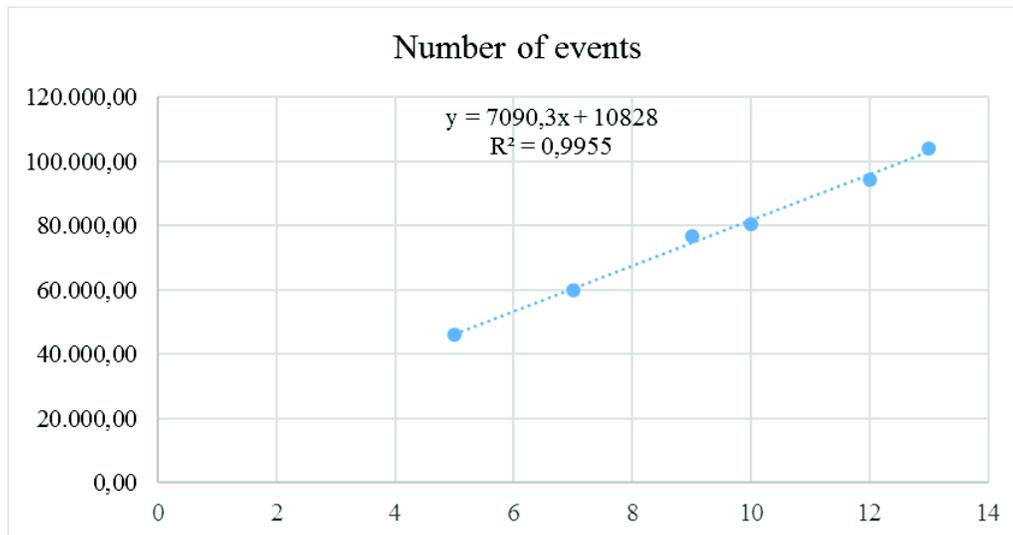
Meaning of index can be found in methodology part. Thanks to this I can write the regression.

The regression is:

$$\hat{y}_i = 10828,4 + 7090,3 * x_i$$

Thanks to this I can find out the audience in case whenever I want to for example what if I want to know the audience when the number of event in next event will be 15? The result is that the audience will be 117182. I just subsided the xi with number of event which I have chosen an it is 15.

In table 4 there are also the others coefficient which show us if these two values are correlated or not. Correlation coefficient is 0,998 which means that there is strong correlation and the correlation between these two values is 99,55%. For clearly results it is shown also on next graph.



Graph 5 Result

Result of this research is that the event marketing and audience are connected. It means that in market where sport centre is working have to focus on marketing activities if they want to be more attractive. Effective marketing activity is something what can help to better profit and to be more successful on market. Event marketing is good way how to get closer to customers because you through this you can show your customers that you are able to spend some money to have fun with customers. Statistics method which I have already mentioned is one of the new ways of analysing data and through this you can calculate if you marketing activities are effective or if they are connected. It is really important to know if your marketing activities are effective. Somehow I can tell that thanks to this marketing activities are measurable.

REFERENCES

- [1] The next generation library, Event marketing. [online]. Event marketing, 2016. [cit. 2016-05-20]. Available on website: < <http://www.yourarticlelibrary.com/marketing/event-marketing-meaning-features-and-importance-of-event-marketing/32327/>>.
- [2] The Chartered institute of marketing, Marketing. [online]. Marketing, 2016. [cit. 2016-05-20]. Available on website: < <http://www.cim.co.uk/more/getin2marketing/what-is-marketing/>>.
- [3] Investopedia, Comparison. [online]. Comparison, 2016. [cit. 2016-04-17]. Available on website: < <http://www.stat.yale.edu/Courses/1997-98/101/meancomp.htm>>.
- [4] Bakytová. H and col., Bases of statistics. Bratislava: Academy of economy Bratislava SAV, 1975. ISSN 63-556-75.
- [5] Princeton University library, Regression analysis. [online]. Regression, 2016. [cit. 2016-05-17]. Available on website: <http://dss.princeton.edu/online_help/analysis/regression_intro.htm>.