MULTIPLE REVENUE STREAMS MODEL OF WINERIES

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Abstract: *The revenue model consists of set of revenue streams and depicts how company monetizes its value. The type of revenue model (one stream or multiple streams model) also depends on the nature of the business model. In order to generate sufficient revenue streams, a company have to create an appropriate mix of sales channels and pricing models in relation to the needs of the serving customer segment. The research article monitors the impact of particular business model parameters on the Scope of revenue model (in terms of revenue streams). Examined are parameters such as „Scope of online sales channels", „Number of off-line channel types", „Scope of key business activities and „Scope of additional business activities". All variables represent interval data. The results of the linear regression analysis confirmed statistically significant influence of parameters (p value ≤.05) - "Scope of Additional Business Activities", "Scope of Key Business Activities" and "Scope of Off-line Channels" on the Scope of the Revenue model (in this order). Pearson's R shows a very high dependency between the Scope of Additional Business activities and the Scope of Revenue model, while the model explains up to 93% variability of the dependent variable.*

Key words: *Revenue model of a winery, Revenue streams, sales channels, pricing model, customer segment*

1. INTRODUCTION

Slovakia is located at the northern edge of Europe where grapevines can be cultivated and, therefore, a disadvantage is more unfavourable climatic conditions than in southern Europe. Only 50% of winegrowers' production capacities have actually been utilised over years [Rogovská, 2018], and yet Slovakia's wine industry is generating long-term positive revenues despite difficult growing and production conditions. Measures of central tendency for revenue in the wine sector analyzed in 2017 were ME = 126,546 €, where M = 794,756 €. The production of wine, where both winegrowers and wineries are equally involved, is a specific sector characterised, in comparison to other sectors, by several specific features such as bounding to the territory, especially raw material, and product sales bound to purchasing power and the EU's regulation of the sector. All these businesses operate on the basis of a particular business model that represents the way they generate value for the customer and manage it [Kähkönen, 2012]. The foundation for the business model used by wineries in the food industry is the production and sale of wine.

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Revenue model of a winery

The business model consists of three basic components: value streams for customers and partners, revenue streams and logistics streams [Mahadevan, 2000]. Every business model includes a revenue model – a method for business owners to earn income [Baker, 2010]. Along with other components such as customer value proposition [Kintler, 2016; Hrušovská & Štetka, 2017] and relationships with partners, everything comes together to create the concept of a business model [Zott, et., al., 2011]. According to Bednár & Tarišková, revenue model is characterized as a conceptual framework for revenue generation, profits and generating higher than average return on investment [Bednár &Tarišková, 2017]. All sources of revenue flowing into an enterprise are called a revenue stream. Since revenue streams provide financial stability for business development, enterprises are tasked with planning a strategy to create all available streams [Canzer, 2006], combining basic pricing [Remeňová, 2015] and distribution strategies to generate sufficient revenue streams within the revenue model [Kehal, Singh, 2005]. From the point of view of the concept of the business model it is its eighth element and it measures the ability of a firm to translate the value it offers its customers into money and incoming revenue streams [Osterwalder, & Pigneur, 2010].

Authors Weill, Malone, D'Urso, Herman and Woerne [Weill et al., 2005] studied 1,000 businesses in the United States, focusing on effectiveness of their business models and analyzing revenue streams in relation to the business's financial performance. A survey was conducted using data from the 2000 fiscal year. Results from the study showed business models to be a better indicator of financial performances than the industry's own financial performance indicators. Accordingly, they were able to distinguish between well-functioning and average-operating business models. Weill et al. proved that a business model is composed of two types of revenue models. It could either be a single revenue model or a combination of several models. Also Zagoršek et. al examined effectiveness of business and revenue models of small companies in relation to „first mover" or „systematic approach" classification [Zagoršek et. al, 2017]. By transforming the generation of revenue into sales of customer value, a business becomes an enterprise with a future focused on profitability. Profitability rates are different in every enterprise, even though they operate in the same industry and have the same cost structure. The level can be influenced by several indicators: fixed and variable costs, sales volume, costs and customer retention [Baker, 2010].

A company's revenue model can be composed of different revenue streams that can all have different pricing mechanisms [Osterwalder & Pigneur, 2002]. In practice, there are two types of revenue models applied – single revenue stream and multiple revenue streams, depending on the nature of the business model. Some more sophisticated revenue models include, in addition to single or multiple streams, interdependent revenue streams or a revenue stream nicknamed "loss leader" [Gartner & Bellamy, 2010]. Types of revenue streams:

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- Single stream - one main source of revenue;
- Multiple streams – several major revenue streams;

- Interdependent – a revenue source from one stream supports product sales/services in different streams;
- "Loss leader" - several revenue sources, but not all are as profitable. Some are even losing to support the profitability of others. Then, revenue model can be described by the following assumptions:
- the count of potential revenue streams is not limited (some boundaries result from company´s activity potential),
- company has defined the number of revenue streams (one or more revenues streams),
- the count of potential customers is not limited.

2. METHODOLOGY AND DATA ANALYSIS

The aim of the research paper is to identify the impact of particular business model parameters such as key business activities (in analysis termed as Scope of key business activities), additional business activities (termed as Scope of Additional Business Activities) and sales channels (termed as Scope of off-line channel types and Scope of online sales channels) on the revenue model of a winery (in terms of revenue streams). The original research sample (N= 100) consists of Slovak wineries of all size types. The researchers have ensured the measurement objectivity by using data collected in on-line form from company's websites and from secondary sources that represent the financial statements, annual corporate reports and analyzes of external entities. All variables represented interval data. Random sampling was conducted as part of computer analysis in PSPP as ,approximately 50% of all cases".

Linear regression analysis was used to ascertain the specific dependence between the dependent variable revenue model (represented by number of revenue streams) and the independent variables such as ,,Scope of online sales channels", ,,Scope of off-line channel types", ,,Scope of key business activities and ,,Scope of Additional Business Activities". Scope is represented by numbers. The interrelationship of the variables is depicted as follows:

$$Y = b0 + b1 * X + e$$

The obtained data were analyzed in the PSPP statistical software. Hypotheses were tested at the significance level of $\alpha \leq 0.05$ (Hanák, 2016).

3. ANALYSIS AND RESULTS

Before looking at the dependence of a revenue model on selected business model parameters, here is a description of the basic data set using a frequency table and measures of central tendency. Based on frequency table results, it is possible to state that the highest variability between values reaches the variable "Number of Revenue Streams" (SD = 1.51), while on the other hand the lowest variability between values is reported with

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"Scope of online sales channels" (number of online channels) (SD = 0.38; M = 1.13).

Tab. 1 - Frequency table for decision making style score

Variable	N	Mean	S.E. Mean	Std Dev	Variance	Kurtosis	S.E. Kurt	Skewness	S.E. Skew	Min	Max
Scope of key business activities	100	1.11	.04	.42	.18	14.50	.48	3.92	.24	1.00	3.00
Scope of Additional Bus. Activities	100	1.54	.14	1.36	1.85	.32	.48	.91	.24	.00	6.00
No. of Revenue Streams	100	2.65	.15	1.51	2.29	.25	.48	.97	.24	1.00	7.00
Scope of off-line channel types	98	1.97	.10	.99	.98	-.69	.48	.65	.24	1.00	4.00
Scope of online sales channels	63	1.13	.05	.38	.14	10.23	.59	3.16	.30	1.00	3.00

Source: researchers' own processing with PSPP

The average number of revenue streams is M = 2.65, with the smallest number of streams from which wineries earn revenue being one and the highest number seven. The average number of Additional Business Activities is M = 1.54 with SD = 1.36 together with Number of Revenue Streams showing the highest dispersion of values from the mean. The highest number of Additional Business activities of wineries is zero, which means no ABA, there are 6 at most. Analyzed wineries indicate the range of Core Business Activities from 1 to 3, on average M = 1.11 with variability SD = 0.42. The average number of Offline Channels Type is M = 1.97, (SD = 0.10). The distribution normality was monitored through kurtosis and skewness. Based on the kurtosis data for Number of Revenue Streams (kurtosis = 0.25), Additional Business Activities (kurtosis = 0.32), Core Business Activities (kurtosis = 14.5), Online Channels (kurtosis = 0.32), we can state that there is a more pointed division and the data is close to the mean. The only data where "Number of Offline Channel Types" has a flatter distribution (kurtosis = 0.69) is where more extreme values were found. The skewness also points to the non-normal distribution in all data sets. Skewed values are greater than zero for all variables, indicating left-sidedness distribution that means lower values.

Using linear regression analysis, functional dependence was identified between the dependent variable in the revenue model (composed of the number of revenue streams) and the independent variables Scope of key business activities, Scope of additional business activities Number of Revenue Streams, Scope of off-line channel types and Scope of online sales channels. The following hypotheses were tested:

H0: Number of key business activities, additional business activities, number of Revenue Streams, number of off-line channel types and number of Online Channels have no statistically significant dependence on the scope of revenue model measured by linear regression analysis.

H1: There is statistically significant dependence between analyzed variables.

In order to determine the relationship between variables, Pearson's correlation coefficient was used (Table 4).

Table 2: Model summary of linear regression analysis

Variables	Scope of Revenue Streams		
	R	R^2	Sig.
Scope of Key Business Activities	.49	.24	.000
Scope of Additional Business Activities	**.96**	**.93**	**.000**
Scope of Off-line Channel's type	.25	.06	.014
Scope of online sales channels	.09	.01	.492

Source: own processing in PSPP

Table 2 „Model summary" shows aggregated results of Pearson's correlation coefficient for variables Scope of Key Business Activities R = .49 (what indicates moderate level of correlation), Scope of Additional Business Activities (R = .96) and Scope of Off-line Channel's type (R = .25) as a positive correlated with Scope of Revenue Streams. The highest correlation is between Scope of Revenue Streams and Scope of Additional Business Activities, which means extremely high correlation. 93% variability of dependent variable „Scope of Revenue Streams" is explained by the independent variable „Scope of Additional Business Activities". Pearson's correlation coefficient for the variable Scope of Online Sales Channels R = 0.09 is a number that is very close to zero. This implies that no dependency is confirmed between Scope of Revenue Streams and Scope of Online Sales Channels.

The following tables (3 to 6) present an ANOVA test evaluating how well our regression model described the data. The regression model for the variables Number of Revenue Streams and *Scope of Key Business Activities* describes well the analyzed data (Table 3). The result of the F test (F = 30.26) is a statistically highly significant p = 0.000.

Table 3 ANOVA for Scope of Key Business Activities

	Sum of Squares	df	Mean Square	F	Sig.
Regression	53.50	1	53.50	30.26	.000
Residual	173.25	98	1.77		
Total	226.75	99			

Source: own processing in PSPP

Since the model describes well the relationship between the analyzed data, the following regression equation can be compiled:

$$Y = 0.73 + 1.73*X$$

By virtue of the regression coefficient b1 = 1.73, it can be asserted that incrementing the value of the independent variable Scope of Key Business Activities by 1 unit raises the Number of Revenue Streams variable by 1.73 units.

The regression model for the variables Number of Revenue Streams and *Scope of Additional Business Activities* also describes very well the analyzed data (Table 4). The result of the F test (F = 1220.22) is a statistically highly significant p = 0.000.

Table 4 ANOVA for Scope of Additional Business Activities

	Sum of Squares	df	Mean Square	F	Sig.
Regression	209.89	1	209.89	1220.22	.000
Residual	16.86	98	.17		
Total	226.75	99			

Source: own processing in PSPP

Since the model describes well the relationship between the analyzed data, the following regression equation can be compiled:

$$Y = 1 + 1.07*X$$

By virtue of the regression coefficient b1 = 1.07, it can be asserted that incrementing the value of the independent variable Scope of Additional Business Activities by 1 unit raises the Number of Revenue Streams variable by 1.07 units.

The regression model for the variables Number of Revenue Streams and *Scope of Off-line Channel's type* also describes very well the analyzed data (Table 5). The result of the F test (F = 6.25) is a statistically highly significant p = 0.014.

Table 5 ANOVA for Scope of Off-line Channel's type

	Sum of Squares	df	Mean Square	F	Sig.
Regression	13.67	1	13.67	6.25	.014
Residual	209.88	96	2.19		
Total	223.55	97			

Source: own processing in PSPP

Since the model describes well the relationship between the analyzed data, the following regression equation can be compiled:

$$Y = 1.93 + 0.38*X$$

By virtue of the regression coefficient b1 = .38, it can be asserted that incrementing the value of the independent variable Scope of Off-line Channel's type by 1 unit raises the Number of Revenue Streams variable by .38 units.

Results in Table 6 for F statistics F = .48 are statistically independent p = .492. On the basis of analyzed data, the regression model for the variables Scope of Revenue Streams and Scope of online sales channels cannot be good enough described.

Table 6 ANOVA for Scope of online sales channels

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.20	1	1.20	.48	.492
Residual	153.66	61	2.52		
Total	154.86	62			

Source: own processing in PSPP

CONCLUSION

The core business model for all the analyzed wineries is the production and sale of wine. Some wineries have expanded the basic model with the sale of additional assortments and provision of supplemental services in the form of events (renting their place or organizing wine-tastings for individuals and businesses) and other services (vineyard care). These business activities, which form the foundation for their key business activities, are parameters for how the business generates value and to whom it is distributed. From the analyzed data, the wine sales model can be said to have multiple streams. Based od analyzed data we can state, that revenue model of wineries can be termed as multi revenue streams model. The results of the linear regression analysis confirmed statistically significant influence of parameters (p value < .05) - "Scope of Additional Business Activities", "Scope of Key Business Activities " and "Scope of Off-line Channels" on the Scope of the Revenue model (in this order). Pearson's R shows a very high dependency between the Scope of Additional Business activities and the Scope of Revenue model, while the model explains up to 93% variability of the dependent variable.

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