Czech University of Life Sciences Prague

Faculty of Economics and Management

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Bachelor Thesis

Economic Analysis of Media Market: A Case Study of a fashion magazine

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BACHELOR THESIS ASSIGNMENT

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Thesis title

Economic Analysis of Media Market: A Case Study of a fashion magazine

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Objectives of thesis

The aim of the thesis is to find out and prove the main social trends and offer possibilities economical success increase of Vogue magazine.

Methodology

Qualitative approach, quantitative approach are the basical approaches in the thesis. As the tool to investigate the popularity of the Vogue magazine on-line anonymous questionnaire was created, to analyse and deeply understand the results deduction, induction, synthesis, extraction techniques are applied as well as econometric methods, such as binomial regression.

The proposed extent of the thesis

40 – 60 pages

Keywords

economic analysis,media market, binomial regression, fashion magazine

Recommended information sources

BABBIE, E R. *The practice of social research.* Belmont, CA: Thomson Wadsworth, 2007. ISBN 978-0-495-18738-7.

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Declaration

I declare that I have worked on my bachelor thesis titled "Economic Analysis of Media Market: A Case Study of a fashion magazine" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 15.03.2017 _____

Ksenia Shapko

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Economic Analysis of Media Market: A Case Study of a fashion magazine

Summary

The bachelor thesis deals with the economic analysis, in particular with marketing research of Vogue magazine. The aim is to define and prove social trends and offer possibilities of economical success increase. The first theoretical part is dedicated to market and marketing theory, questionnaire creation rules, Vogue historical overview and its positioning today. The practical part is devoted to the evaluation of the survey results and data analysis with binomial distribution, logistic regression, correlation application. Results demonstrate how different factors impact on the magazine readers and followers.

Keywords: economic analysis, fashion magazine, binomial regression, media market.

Ekonomická analýza media trhu na přikladě modního časopisu

Abstrakt

Tato bakalářská práce se zaměřuje na ekonomickou analýzu, případně na marketingovou analýzu modního časopisu Vogue. Cílem práce je zjístit a zdůvodnit sociální trendy a nabídnout možné scénáře ekonomického rozvoje. V první časti se jedná o teorie trhu a marketingu, pravidlech tvorby dotazníků, přehledu historie časopisu Vogue a evaluaci jeho skutečného stavu. Praktická čast se zaměřuje na sestavení binominální distribuce, korelace a logistické regrese. Výsledek představuje, jak různé faktory ovlivňují množství followerů a čtenářů.

Klíčová slova: ekonomická analýza, modní časopis, binominální regrese, mediální trh.

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1 Introduction

“Simply the best”

- Vogue corporate motto

There are thousands and millions of companies trying to keep head above the water from year to year on media market. Now at the time of high technologies it is very hard to hold the top position, especially for printed issues. They use similar iconic fonts, muted colors, breath- taking photos, and a general layout that features a large masthead, image as a focal point, and text surrounding the image. Yet, one magazine allocates from the others; Vogue. Being published in 23 countries, it is The Fashion and Art Bible for millions of readers and followers. It is the diamond among all other fashion publications that target stylish and sophisticated women. Why is Vogue the most recognizable and successful in the field all around the world? Beyond the ads and in between the pages of haute couture, Vogue embodies a real meaning of culture through not only paper, but web-sites (vogue.fr, vogue.com), their variety of social media developments (Instagram, Facebook,etc.), fashion guides, and blogs and videos. This astonishing effect is caused with the tight connection of le monde de l'art and social life peculiarities. Who is that mysterious, indendent Vogue women? How one of the most progressive periodicals can seize larger audience?

“Fashion is a language, for sure, but it’s a reflection of society”

- Carine Roitfeld editor-in-chief of French Vogue (2001-2010)

2 Objectives and Methodology

2.1 Objectives

The research explores how and why Vogue has managed to make its way to the peak of the industry. The aim of the investigation is to find out and prove social trends,offer possibilities of economical success increase.

Why is the topic so actual?

Vogue.com: “From its beginnings to today, three central principles have set Vogue apart: a commitment to visual genius, investment in storytelling that puts women at the center of the culture, and a selective, optimistic editorial eye. Vogue’s story is the story of women, of culture, of what is worth knowing and seeing, of originality and grace, and of the steady power of earned influence. For millions of women each month, Vogue is the eye of the culture, inspiring and challenging them to see things differently, in both themselves and the world.” – the magazine’s mission, that’s visibly fulfilling annually, which is empirically clear to ordinary man living a progressive social life.

2.2 Methodology

To fully analyze and deeply understand the roots of the magazine economical growth the mixture of two oppositely different research methodologies - qualitative and quantitative - should be introduced. **Qualitative research** is connected with examination and interpretation of observations for the purpose of discovering underlying unknown meanings and relationships between diverse aspects, without using or involving mathematical models. **Quantitative approach** contains systematic computational and statistical study of some hypotheses.

There are plenty of various techniques that can be practiced such as selection, deduction, induction, synthesis, extraction.

Inductive reasoning begins with observations that form a theory, which can be counted as a conclusion of investigation. The concept that “inductive reasoning is often referred to as a “bottom-up” approach to knowing, in which the researcher uses observations to build an abstraction or to describe a picture of the phenomenon that is being studied” was offered by Lodico and co-writers in 2006.

A **deductive research** is related to “developing a hypothesis (or hypotheses) based on existing theory, and then designing a research strategy to test the hypothesis” (Wilson,2010). As Babbie E. R. claims in his book (2016), the process may start with known, already given thesis “that is tested against observations, whereas induction begins with observation and seeks to find a pattern within them”.

Synthesis is an opposite type of approach method to analysis. While the last tries to divide an object into parts and investigate its characteristics, structure and features, synthesis gathers different traits of the object into common one.

Extraction is a process of retrieving needed information from the source for further storage, analysis, process. This act is very basic and ordinary between researchers, because as the first step it’s necessary to allocate required material in every held study.

The chosen topic of the investigation is obviously connected with trends and preferences of the society. One of the most suitable tools to find out the interests of the public is an anonymous questionnaire, in which the respondent has a possibility of multiple answering. The results of it can be used for revealing the target audience, understanding its opinions about the Vogue content and predict the future popularity of the object of the study. Poisson´s binomial model can be applied for the process of forecasting the ways of fashion magazines progress. “The Poisson’s binomial (PB) is the probability distribution of the number of successes in independent but not necessarily identically distributed binary trials. The independent non-identically distributed case emerges naturally in the field of item response theory, where answers to a set of binary items are conditionally independent given the level of ability, but with different probabilities of success. In many applications, the number of successes represents the score obtained by individuals, and the compound binomial (CB) distribution has been used to obtain score probabilities. It is shown here that the PB and the CB distributions lead to equivalent

probabilities." (Gonzales, 2016). Poisson distribution can be applied to complicated samples, while ordinary binomial is unique. The classic binomial distribution formula looks like:

$$P(X\text{"successes"}) = \frac{n!}{x!\,(n-x)!} p^{x} (1-p)^{(n-x)} \quad \textit{(Formula 1)}$$

where n-number of trials, x-number of successes or events of interest, p-probability of the successful event. There are three assumptions for the binomial distribution usage:

1. Every event can result only two possible outcomes (success or failure)- eagles and tails in coin flipping
2. The probability is always the same, does not depend on the replication number.
3. Trials are independent and results can not influence on each other.

For the cases in the questionnaire analysis when multiple answers are occurring the multinomial distribution should be applied. Multinomial probability distribution is a distribution with a different possible outcomes of the multinomial experiment. The assumptions remain the same. The formula contains n-number of trials, x-numbers of times when a concrete outcome is observed during the trials, p- probabilities of outcomes.

$$f(x_1,\dots,x_k) = \frac{n!}{x_1!\cdot\dots\cdot x_k!} p_1^{x_1}\cdot\dots\cdot p_k^{x_k} \quad \textit{(Formula 2)}$$

Correlation is also an appropriate tool to indicate a degree to which two variables move in dependence to each other. A significant correlation between two random variables is always an evidence of the existence of some statistical relationship in this sample, but this relationship is not necessarily observed for the other samples and have a causal character. It can be:

1. Positive - when both variables grow
2. Negative - one decreases, another increase
3. Non - correlational - one does not change, when another grows

Pearson's correlation coefficient or linear coefficient for the sample of correlation can be calculated with the use of following formula:

$$r_{xy} = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{(n-1)s_x s_y} = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2 \sum_{i=1}^{n}(y_i - \bar{y})^2}},$$

(Formula 3)

where $\bar{x}$-mean, s- standard deviation.

For population:

$$\rho_{X,Y} = \frac{\mathrm{E}[(X - \mu_X)(Y - \mu_Y)]}{\sigma_X \sigma_Y}$$

(Formula 4)

where E- expectation, μ- mean.

It has value -1<r<1, the sign shows if it is a positive or negative relation. If |r|>0.7 the relation is strong, if 0.3<|r|<0.7- medium, |r|<0.3- weak There are some assumptions to be hold to compute the measure, such as linear relation, ratio or interval level, bivariate normal distribution.

If the data does not meet any of the postulates, then Spearman's rank correlation should be applied.

The formula for which is:

$$\rho = 1 - \frac{6\sum d_i^2}{n(n^2-1)}$$

(Formula 5)

where d is a difference between ranked outcomes.

Correlation analysis is closely related to regression analysis, which helps to determine the need to include other variables in a multiple regression equation and evaluate it for compliance with the identified relations (using the coefficient of determination).

Logistic regression is the appropriate regression analysis to conduct when the dependent variable is dichotomous (binary). Like all regression analyses, the logistic regression is a predictive analysis. Logistic regression is used to describe data and to explain the relationship between one dependent binary variable and one or more nominal, ordinal, interval or ratio-level independent variables.

Response variable-dependent, follows a Bernoulli distribution for parameter p (p is the mean probability that an event will occur) when the experiment is repeated once, or a Binomial (n, p) distribution if the experiment is repeated n times (for example the same dose tried on n insects). The probability parameter p is here a linear combination of explanatory variables. In logistic regression Probability or Odds of the response taking a particular value is modeled based on combination of values taken by the predictors.

Logistic regression is applicable, for example, if:

- we want to model the probabilities of a response variable as a function of some explanatory variables, e.g. "success" of admission as a function of gender.
- we want to perform descriptive discriminant analyses such as describing the differences between individuals in separate groups as a function of explanatory variables, e.g. student admitted and rejected as a function of gender
- we want to predict probabilities that individuals fall into two categories of the binary response as a function of some explanatory variables, e.g. what is the probability that a student is admitted given she is a female
- we want to classify individuals into two categories based on explanatory variables, e.g. classify new students into "admitted" or "rejected" group depending on their gender.

Binary logistic regression estimates the probability that a characteristic is present (e.g. estimate probability of "success") given the values of explanatory variables, in this case a single categorical variable ; $\pi = Pr\ (Y = 1|X = x)$. Suppose a physician is interested in estimating the proportion of diabetic persons in a population. Naturally she knows that all sections of the population do not have equal probability of 'success', i.e. being diabetic. Older population, population with hypertension, individuals with diabetes incidence in family are more likely to have diabetes. Consider the predictor variable X to be any of the

risk factor that might contribute to the disease. Probability of success will depend on levels of the risk factor.

Variables:

- Let Y be a binary response variable
- $Y_i = 1$ if the trait is present in observation (person, unit, etc...) i
- $Y_i = 0$ if the trait is NOT present in observation i
- $X = (X_1, X_2, ..., X_k)$ be a set of explanatory variables which can be discrete, continuous, or a combination. x_i is the observed value of the explanatory variables for observation i. In this section of the notes, we focus on a single variable X.

Model:

$\pi_i = Pr(Y_i=1|X_i=x_i) = \exp(\beta_0+\beta_1 x_i) 1+\exp(\beta_0+\beta_1 x_i)$

or,

$\text{logit}(\pi_i) = \log(\pi_i 1-\pi_i) = \beta_0+\beta_1 x_i = \beta_0+\beta_1 x_{i1}+\ldots+\beta_k x_{ik}$

(Formula 6)

Assumptions:

- The data $Y_1, Y_2, ..., Y_n$ are independently distributed, i.e., cases are independent.
- Distribution of Y_i is $Bin(n_i, \pi_i)$, i.e., binary logistic regression model assumes binomial distribution of the response. The dependent variable does NOT need to be normally distributed, but it typically assumes a distribution from an exponential family (e.g. binomial, Poisson, multinomial, normal,...)
- Does NOT assume a linear relationship between the dependent variable and the independent variables, but it does assume linear relationship between the logit of the response and the explanatory variables; $logit(\pi) = \beta_0 + \beta X$.
- Independent (explanatory) variables can be even the power terms or some other nonlinear transformations of the original independent variables.
- The homogeneity of variance does NOT need to be satisfied. In fact, it is not even possible in many cases given the model structure.
- Errors need to be independent but NOT normally distributed.
- It uses maximum likelihood estimation (MLE) rather than ordinary least squares (OLS) to estimate the parameters, and thus relies on large-sample approximations.

- Goodness-of-fit measures rely on sufficiently large samples, where a heuristic rule is that not more than 20% of the expected cells counts are less than 5.

Model Fit:

- Overall goodness-of-fit statistics of the model; we will consider:
    1. Pearson chi-square statistic, X^2
    2. Deviance, G^2 and Likelihood ratio test and statistic, ΔG^2
    3. Hosmer-Lemeshow test and statistic
- Residual analysis: Pearson, deviance, adjusted residuals, etc...
- Overdispersion

Parameter Estimation:

The *maximum likelihood estimator* (MLE) for (β_0, β_1) is obtained by finding ($\beta\hat{}_0$,$\beta\hat{}_1$)

that maximizes:

$$L(\beta_0,\beta_1)=\prod_{i=1N}\pi_{yii}(1-\pi_i)_{ni-yi}=\prod_{i=1N}\exp\{y_i(\beta_0+\beta_1x_i)\}1+\exp(\beta_0+\beta_1x_i)$$

(Formula 7)

In general, there are no closed-form solutions, so the ML estimates are obtained by using iterative algorithms such as *Newton-Raphson* (NR), or *Iteratively re-weighted least squares* (IRWLS).

Interpretation of Parameter Estimates:

- $exp(\beta_0)$ = the odds that the characteristic is present in an observation i when $X_i = 0$, i.e., at baseline.
- $exp(\beta_1)$ = for every unit increase in X_{i1}, the odds that the characteristic is present is multiplied by $exp(\beta_1)$. This is similar to simple linear regression but instead of additive change it is a multiplicative change in rate. This is an estimated *odds ratio*.

$$\exp(\beta_0+\beta_1(x_{i1}+1))\exp(\beta_0+\beta_1x_{i1})=\exp(\beta_1)$$

(Formula 8)

In general, the logistic model stipulates that the effect of a covariate on the chance of "success" is linear on the log-odds scale, or multiplicative on the odds scale.

- If $\beta_j > 0$, then $exp(\beta_j) > 1$, and the odds increase.
- If $\beta_j < 0$,then $exp(\beta_j) < 1$, and the odds decrease.

Then the logistic regression model can be expressed as:

$$\text{logit}(\pi_i)=\log\frac{\pi_i}{1-\pi_i}=\beta_0+\beta_1 X_i$$

(Formula 9)

3 Theoretical part

3.1 Market and Marketing

3.1.1 Market

Basically market is medium that offers suppliers and demanders (buyers and sellers) of a specific good or service to interact between each other in order to contribute an exchange. Markets can be virtual, where participants do not need to meet face-to-face to operate or physical marketplace, where people come together to deal with services or goods in person. There are a lot of variations of markets in the world. They can vary geographically, by types of goods/ services offered, can specialize on different income level customers etc. Every market space should provide regulations and policies. Feasibility of the new player introduction to the stage varies across competences and depends on the position of the specific resolution in the hierarchy of resources and the type of the enforcement system.

Market definition is one of the most principle concepts underpinning actually all rivalry issues, from mergers, through monopolisation to agreements. It provides an analytical scope for the final inquiry of whether a certain behavior or transaction leads to uncompetitive effects. Market power means the ability of the company to keep price above the long-run competitive scale. Market shares of some representative firms can indicate it. But in differentiated product markets the strength of competition and substitution sometimes is much more important factor of market power.

3.1.2 Marketing

Marketing is “the act of purchasing in a market”according to the Webster´s dictionary of 1880, so both the producer and consumer may be marketers. Nowadays the definition of Varey (2002) is mostly suitable:”Marketing is concerned with creating and sustaining mutually satisfying exchanges of value between producers/servers and their customers. It has both managerial orientation and organizational/social function.” This exposes the current era, the consumerism epoch, that concludes for the society existence of institutions and organizational structures, for the person constructs relationships and

identity. "Der Mensch ist, was er ißt. (Man is what he eats)" wrote Ludwig Andreas Feuerbach in 1863. In the 21th century the quote can be converted to “Man is what he consumes”, because the personality forms from the whole environment of the person. The books, news, city sights, people, food… that all influences on our world vision and the character we are. And the chief purpose of each marketer is to completely understand customers wants, needs and desires. Marketing theories arose at the middle of 19th century with the flourishment of psychology. Because to be a professional in the sphere means to perceive human nature.

The most famous psychological theory participating in specialized books in the field is Maslow’s hierarchy of needs. It helps in realizing the target audience and plan a strategy of its conquest.

Figure 1- Maslow’s hierarchy of needs in the marketing research

(Source: Brad Graves for KNG Marketing Partners)

Maslow’s hierarchy can also identify future consumer behavior, that he/she displays during in looking for,buying,using and estimating products and services expected to satisfy needs.

In the modern reality holistic view of marketing is mostly applied. It means developing, designing, implementing marketing programs, processes and activities, recognizing

breadth and interdependencies of today's marketing environment (Chartered Institute of Marketing-CIM).

Four points of holistic marketing:

1. Relationship marketing - building mutually satisfying long-term connections with all market players in order to profit business
2. Integrated marketing - providing the multiple means of creating,communicating and supplying are applied and working in the best way
3. Performance marketing - understanding and interpreting returns to business and society from marketing activities
4. Internal marketing - employing, training and developing employees for better customer care support, ensuring that everyone in the stuff is appropriate to follow the marketing principles.

According to Kotler (2014) modern marketing management has following tasks:

1. Create marketing strategies and plans
2. Evaluate marketing performance
3. Build fare and strong brand image
4. Secure good customer care
5. Shape market offering
6. Deliver communicating value
7. Make a long-term stable growth

3.1.3 Marketing research

Every company entering the market space or implementing a new product always takes time on marketing research to build marketing strategy, occupy a stable niche, investigate possibilities of growth. Generally marketing research is a process or a combination of processes that connects "the consumer, client and public to the marketer through information used to identify and determine marketing opportunities and problems; generate, refine, and evaluate marketing actions; monitor marketing performance; and develop understanding marketing as a process. Marketing research specifies the information required to address these issues, designs the method for collecting information, manages and implements the data collection process, analyzes the results, and communicates the findings and their implications" (American Marketing Association,

2004, online resource). Marketing research methodologically can use following kinds of research designs:

1. Based on questioning (qualitative and quantitative approaches)
2. Based on observation (ethnographic techniques and experimental studies)

There are also two categories of the research according to the object of analysis:

1. Consumer research (understanding attitudes, preferences and behavior of the consumer)
2. B2B marketing research (more complex, large amount consumers)

Marketing mix is also a great tool might be used in analyzing the situation of the company pursuing marketing objectives to its target market:

1. Product - packaging, labeling, assortment, guarantees, services
2. Price - payment terms, discounts, price settling, tactics, strategy
3. Promotion - advertising, PR, direct marketing, sales promotion
4. Place - distribution, transport, location, franchising, assortment.

3.1.4 Marketing research process

All scientific projects have to obey certain rules and patterns. Steps of marketing research are:

1. Define objective´s and company "problem"
2. Set research design
3. Conceive and prepare research tool
4. Sampling and data collection
5. Analyze data
6. Visualize and communicate result

To proper analyze the situation on the market and improve the firm performance all stages should be ultimately elaborated.

3.1.4.1 Step 1. Define business objectives and the problem.

Maybe it is one of the most important parts of the study, because here all perspectives, goals and visions are formed. There is mainly a core business problem to be solved, but there is also a an absence of knowledge to make the decision easily, the task of researcher is to inform the resolution with solid data. The study should be focused and

productive. The researcher should answer such questions, for example, like: ”What is target group and how to increase it?”, “What price is appropriate for them?” or others to identify the problem and then set the objectives, there should be one of these types:

The objective of exploratory research is to gather preliminary information that will help define the problem and suggest hypotheses.

The objective of descriptive research is to describe thing, such a market potential for a good or the population and attitudes of consumers who gain the product. The purpose is to outline the variables.

The objective of causal research tests the cause-and-effect.

There are five main ways to collect data: through observation, behavioral data, experimentals, surveys, focus groups.

Observational research. Data are gathered unostentatiously by observing relevant people during their normal doings.

Ethnographic research is a particular observational, with the use of tools and concepts of anthropology, ethnography and other sciences to provide deep cultural understanding of human life. In this form special observes interact with ordinary customers in their natural environment.

Focus group research gathers a group of 5-10 people chosen by concrete demographic, psychological, or other consideration to discuss all together some topics.

Behavioral research. Consumers leave traces of their buying behavior in shop scanning data, catalog purchases and customer databases.

Experimental research-the most scientifically valid, created to capture cause-and-effect relations by excluding competing information of the observed findings.

3.1.4.2 Step 2. Set research design

After determining objectives it is time to choose the type of approach that should better obtain the needed information. The task of this level is to set time of the research, resources, samples (who should be surveyed; sample size showing or validating the fashion of the objectives; way of choosing the sample). There are also three kinds of the study: descriptive (quantitative, measuring specific topics of interest), exploratory (qualitative, interviews, focus groups), causal (field test, experiments).

3.1.4.3 Step 3. Design and prepare research instrument

If a survey is the most suitable tool, the researcher can create a questionnaire. The advantage of survey research is it is flexibility. Information can be gained by observing people in relevant situations, for example in a restaurant; we can get important information about how people choose their wine or in a book shop, asking about favourite author.

If a focus group is the instrument of choice, questions and materials have to be prepared for the moderator. Hereby plan execution can be started.

Research produces valid information when it measures what it supports to measure; it produces reliable information when its results are accurate and consecutive. We have been surveyed at least once in our lives. Survey questions should be evaluated from three perspectives:

1. Can respondents understand the question?
2. Is the question delicate to answer?
3. Will participants reply to the question?

Questions can vary:

1. Dichotomous.

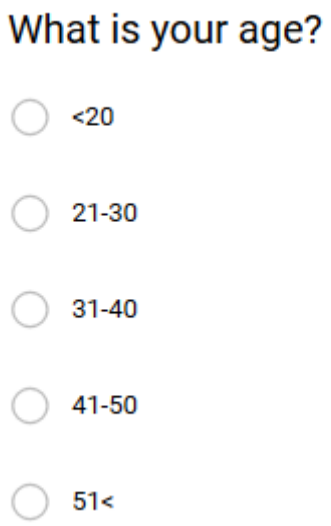
Respondent has two antonymous variants: true/false, yes/no, male /female. Researchers sometimes use such questions to divide the public to two categories to ask then different other questions.

2. Multiple choice. Multiple choice question contains three or more mutually exclusive variants. These questions can ask for for one or multiple answers.
3. Ranking scale. Rank order scaling questions offer a certain set of brands or products to be ranked based on a specific feature. Ties may or may not be allowed. If you allow ties, several options will have the same scores.
4. Rating scale. A rating scale question requires a person to rate a product or brand along a well-defined, evenly spaced continuum. Rating scales are often used to measure the direction and intensity of attitudes. The following is an example of a comparative rating scale question:
5. Demographic questions.

Demographic questions are an integral part of any questionnaire. They are used to identify characteristics such as age, gender, income, race, geographic place of residence,

number of children, and so forth. For example demographic questions will help you to classify the difference between product users and non-users.

Figure 2 -Demographic question



(Source: own survey)

6. Open ended questions.

The open-ended question seeks to explore the qualitative, in-depth aspects of a particular topic or issue.

Every researcher decides before employing the survey:who and how much of people have to be asked, how they are selected.

3.1.4.4 Step 4. Sampling and data collection

The level means administering survey, running focus groups, etc. All gathered information is usually recorded to a spreadsheet and coded. Each nugget of the data can change the conclusion, so has to be carefully gathered.

3.1.4.5 Step 5. Data analysis

It is time to make sure data are structured properly. Once that is all done, the fun begins. Summaries with the tools provided in your software package (typically Excel, SAS, etc.), tables and graphs, result segmentation by groups that make sense (i.e. age, gender, etc.), the major trends in data need to be done.

3.1.4.6 Step 6. Visualizing data and commonicating results

Now is the time to compile the most meaningful take-aways into a digestible report or presentation. A great way to present the data is to start with the research objectives and business problem that were identified. Researcher needs also to restate those business questions, and then present your recommendations based on the data, to address those issues.

3.1.5 Advertising

"Advertising: the poetry of euphemism" (Anthony Trollope)

"Advertising is an institutional model of communication that is deeply rooted in daily interests and has continued to contribute to the reproduction of the social conditions and values of a mode of living and a social system." (Varey, 2002) Today it can be considered that advertising is a mirror of people´s needs and desires as well as a tool of product promotion. Many companies all around the world invest millions into this sphere, because it visibly gives customers a view on a product or even on a company. The reason is advertising is closely connected to the encouraging people to buy the product, even though it is not the desired one; increasing distribution and improving targeting and counteracting with competitors. Five most wanted effects after advertising attempt can be counted as communication objectives:

1. Excite a need with creating a relation between consumer values and product category
2. Contribute to brand awareness
3. Increase sympathy to the brand so that it is prefered over other brands
4. Stimulate people to buy "instinctly"
5. Ease the purchase process replying to the questions like: "How expensive it is?", "Where can I get one?", "How can I pay?"

Ambitious advertisers primary aim is to change customers repertoire with goods they push. And for sure, the objectives of advertising are generally the same for all industries:

1. Increasing profits

2. Encouraging trial and usage of new products, by introducing them with some sales or benefits for potential customers
3. Establishing reminder advertising, follow-ups and good customer service.

There are also many advertising strategies to gain clients. Each should contain such elements like vision of the product, target audience profile, relative advantages of alternative routes whereby people can get know with the good, optimization of the resulting selection given limited capital. To develop the right plan each of the features has to be really deliberate. The positioning statement must reflect the product concept, the framework it fits, values it represent. Target consumer characteristics should take into account peculiarities of potential buyer; person, who would purchase it under circumstances and that,who influence on the potential buyer. Communication media are the tools of good demonstration to the public-print, audio, billboards, internet, direct mail. Across-the-board consistency is highly wanted to implement the campaign.

In directive advertising admen tell people to acquire something because it will give benefits. The person is offered the solution (with the brand) of his/her problem in direct appeal.

In non-directive advertising the advertiser creates a relaxed, friendly atmosphere through which shows the uses of the good with intention to sell. The client sees no threats behind taking new ideas. The type of strategy depends on the firm marketing strategy and the product it introduces.

In the 21th century advertising can be called a new art or even a science. It can totally destroy the company reputation or elevate it to unprecedented heights. Coming through daily life successful slogans and thematic images can become legendary and remember during some generations. For example, Nike´s “Just do it” launched in 1988 is still the core component of firm vision. Almost everyone in the world can associate the phrase with the icon.

3.2 Basics of media market

3.2.1 Media

The term “media” comes from Latin with meaning of tools used to store and share information. The investigation focuses on communicational printed and web media.

Scientific literature has various criteria of its classification, such as multimedia, news media etc. Jirak and Kopplova (2003) divide it into two large historical groups primary and secondary media. Verbal and non-verbal communication stands for primary, i.e. communicational codes people use to exchange information. However, "with the development of human society and civilization growth the need to transmit a data at a greater distance, offer it in the shortest time to the greatest number of people and keep it as long as possible" (Jirak, Kopplova,2003). The tools for keeping and recording information are considered between the secondary media. So writing and painting with the time flow evolved to printing and mechanical recording. The next step was transmission and broadcasting technology that conquered the world in the end of 19th century. Industrial and scientific progress brought the population to the world of internet hi-tech in 20th century. Nowadays media can be divided into two large groups as new - media based on internet usage - online sources and applications for smartphones and traditional (broadcast and print). “A defining characteristic of new media is dialogue. New Media transmit content through connection and conversation. It enables people around the world to share, comment on, and discuss a wide variety of topics. Unlike any of past technologies, New Media is grounded on an interactive community” (Vogt, 2011). Internet contents can be identified as streaming video/music, social networks, podcasts, blogs, RSS feeds, e-mails and different web sites. In the research process mass media and personal media contrast are also noticed. Personal media is any form of media designed for use by a specific person, in contrast to mass media, which is any form of media designed for use by large sets of people. Personal media can also denote person-to-person communications, such as speech, gestures, mail, and telephony.

The earliest forms of personal media, speech and gestures, had the benefit of being easy-to-use and not needing technology. But the downside of not being able to communicate to large audiences led to the development of mass media, such as writing.

3.2.2 Media market

Media market is a territory or region where the population can receive offerings provided in different mass media. They can combine or overlap with one or more metropolitan areas, through regions with few significant population centers can be also defined as markets. Huge enough metropolises can be divided into multiple parts. Market

regions may overlap, meaning that people residing on the edge of one media market may be able to receive content from other nearby markets. They are widely used in compiled in the USA by Nielsen Media Research. Nielsen measures both television and radio audiences since its acquisition of Arbitron, which was completed in September 2013. Markets are identified by the largest city, which are usually located in the center of the market region. However, geography and the fact that some metropolitan areas have large cities separated by some distance can make markets have different forms and result in two, three, or more names being used to identify a single region like for example: California, Chico-Redding.

3.2.3 Mass media

Mass media means technology that is intended to reach a mass public. It's the primary sense of communication used to get the extensive majority of the general audience. The most common platforms for this tool are cell phones, printed issues, radio, films, recordings, television and the Internet resources.Video and computer games may also be envolving into a mass media.Such programs (for example massively multiplayer online role-playing games (MMORPGs) offer a common gaming experience to thousands of users around the world and convey the same messages and ideologies to all their users. Users sometimes share the experience with one another by playing online. Excluding the Internet however, it is questionable whether players of videogames are sharing a common experience when they play the game individually. It is possible to discuss in great detail the events of a video game with a friend one has never played with, because the experience is identical to each. The question, then, is whether this is a form of mass communication. John Thomson (1995) formulates five common characteristics of mass media:

- "Comprises both technical and institutional methods of production and distribution" - This is evident throughout the history of mass media, from print to the Internet, each suitable for commercial utility
- Involves the "commodification of symbolic forms" - as the production of materials relies on its ability to manufacture and sell large quantities of the work; jas radio stations rely on their time sold to advertisements, so too newspapers rely on their space for the same reasons
- "Separates contexts between the production and reception of information"

- It "reaches to those 'far removed' in time and space, in comparison to the producers"
- "Information distribution" - a "one to many" form of communication, whereby products are mass-produced and disseminated to a great quantity of audiences.

Mass media encloses much more than just information impact, so it can be used for different purposes, such as:

- Propaganda, both for business and social concerns. This can include advertising, marketing, political communication, public relations.
- Amusement, obviously through performances of acting, music, sport and Tv shows along with light reading; since the late 20th century also through video and computer games
- Public services, news announcement

The focus of the research is on the Vogue magazine media market, that's issued in printed and online variants. So the terms of these media types should be settled:

Magazine is a periodical publication containing a variety of articles, generally financed by advertising and/or purchase by readers. Magazines are usually published weekly, monthly or quarterly with a date on the cover that is in advance of the date it is actually published. Magazines fall into two broad categories: consumer magazines and business magazines. In practice, magazines are a collections of periodicals, particular from those periodicals produced by scientific, artistic, or special interest publishers which are subscription-only, more expensive, narrowly limited in circulation, and often have little or no advertising. Magazines can be classified by topic as:

- General interest magazines (e.g. Times, Newyorker etc.)
- Special interest magazines (women's, sports, business, cooking etc.)

Insofar as the thesis topic is Vogue magazine, it's clear that this tabloid can be classified as a women's issue about fashion, design, beauty culture and lifestyle.

Talking about this kind of publications Rosalind Ballaster (1991): " The world of magazine is one in which men and women are eternally in opposition, always in struggle, but always in pursuit of each other; relations between them are beset by difficulty, frustration and failure. Yet, possible solutions like dissolution of two exclusive and opposed gender categories,or the separation of women from men, or the dismantling of the

power structures which now legitimate gender difference, have no place in the women's magazine."

Journals can be variously distributed: through e-mail, post, bookshops and groceries, though free press can be in selected pick-up localities. The circulation also can differ:

- Paid. In this model, the magazine is sold to readers for a price, either on a per-issue basis or by subscription, where an annual fee or monthly price is paid and issues are sent by post to readers. Paid circulation allows for defined readership statistics
- Non-paid. This means that there is no cover price and issues are given away, for example in street dispensers, airline board catalogue, or included with other products or publications. Because this model involves giving issues away to unspecific populations, the statistics only entail the number of issues distributed, and not who reads them
- Controlled. This is the model used by many industry-based periodicals distributed only to qualifying readers, often for free and determined by some form of survey. This latter model was widely used before the rise of the Internet and is still employed by some titles. For example, in the United Kingdom, a number of computer-industry magazines use this model, including Computer weekly, and in finance,Waters magazine.

The elder sister of journal is newspaper, that was firstly published in 1605 and now is cheaper, oftener issued analog. Newspaper can have also certain specialization or light up various topics.

4 Fashion magazine phenomenon

Fashion magazine is a periodical containing a collection of articles about fashion trends, interviews with designers, up-to-date reports from fashion shows, popular models' photoshoots, lightening generally all news from the fashion world. Speaking about this type of press names of Vogue, Elle, Harper's bazaar come up to everybody's mind. The target audience of the media are clearly people interested and involved in fashion, the age mainly people between 20 and 50, the largest part of which are women. For example Elle's research reveals that 55.2% of readers are within 18-34 range, and 45.8% within 25-49 range,it has an average reader age of 32.

4.1 History of Vogue magazine

“Vogue has always been more than just a magazine: it’s a history, a way of life, a state of mind. These are the people, the places, the clothes, the ideas that have formed it throughout the century…”

- British Vogue’s art director Robin Derrick

First years

In 1892 Vogue was founded by Arthur Baldwin Turnure and boasted such prestigious backers as Cornelius Vanderbilt. The task of titling the publication was allocated to the magazine’s first editor, Josephine Redding. First, the weekly newspaper consisted of sixteen pages, well printed and nicely decorated. The price of one copy — ten cents — allowed everyone with average income to purchase the magazine and be in the society news. After going through the dictionary for inspiration Redding stumbled upon the following definition of “vogue”: “Mode of fashion prevalent at any particular time; popular reception, repute, generally used in the phrase ‘in vogue’: as, a particular style of dress was then ‘in vogue’; such opinions are now ‘in vogue.’”- Chase and Woolman notice in their book (1954).

Weekly edition presented itself as a real magazine about society, fashion and lifestyle. Generally speaking, with the first issue, it became clear that this is not just another leaflet about women's clothes trends, but restrained and respectable publication about fancy New York. The magazine announced about theatre plays, concerts, exhibitions and about some released books and other art news.

Conde Nast era

New life of Vogue started with the new owner Condé Montrose Nast, the founder of Condé Nast Publications, in 1909. Native New Yorker transformed the edition into women’s journal focused on etiquette, serenity, beauty. After that, the layout generally changed: abandoning the literary pages, dramatically increased its volume, cover once and for all became in a color. For the position of editor-in-chief was appointed Edna Chase, who had no journalism education.

1930s and the World War II

In 1932, Vogue placed color photo first on the cover. From this period it has been collaborating only with the best, world-recognized photographers. Vogue in an amazing way turned into a pioneer in the field of illustrative techniques. First innovations: photos on unfold pages, color cover, no constant page fields. In the early twentieth century Gabrielle "Coco" Chanel emerged as one of the leading experts in women's fashion, and in the 1930s Chanel's fame peaked when she signed a contract with film maker Samuel Godwyn agreeing to exclusively design clothing for the most prominent fashion icons, American film stars. Chanel's celebrity designs gained her infamy in the world of fashion, Vogue was a violin in Chanel's success as her models were, and continue to be, featured in the magazine. During the World War II rapid years Chase showed her loyalty to Vogue, rising to the challenge of preserving the luxury magazine in a collapsed economy. In light of the financial restraints and restrictions on materials such as fabric that resulted from the war, Vogue began to emphasize simplicity and resourcefulness as the new wave in fashion. A 1942 issue proclaimed, "'Dressiness is démodé. It looks wrong to look wealthy. Understatement has a chic denied to overemphasis.'" (Watson, 1999). Expediency became the tone of trends in Vogue during the 1940s, and the magazine underline recycling, repurposing, and reconditioning clothing. Jessica Daves followed the inheritance of Chase after her retirement in 1952.

The Blooming of Femininity

The trend towards simplicity rapidly vanished with the end of the Second World War, and the 1950s ushered in an era during which fashion would return to the Victorian obsession with the shape and form of the female body. The corset reappeared and yet again became a base in the American woman's wardrobe. The journal focused on the importance of the female silhouette, pioneering the female obsession with body consciousness. In 1952 "the silhouette had curves at every turn. Sloped shoulders, cowl neckline and a small hair-concealing hat. Skirts now reached 11 inches from the ground. Designers worked from the inside out, creating corsetry to fill and suppress the seams" (Watson 1999).

Revolution

In the 1960s, with Diana Vreeland editor-in-chief and personality, the magazine started to appeal to the youth of the of the sexual revolution by focusing more on contemporary fashion and editorial features that openly tell about sexuality. Toward this

end, Vogue extended coverage to include East Village boutiques such as Limbo on St. Mark's Place, as well as including features of "downtown" personalities such as Warhol's "Superstar" Jane Holzer's favorite haunts. Vogue also continued making household names out of models, a practice that continued with Suzy Parker, Twiggy, Jean Shrimpton, Lauren Hutton, Veruschka, Marisa Berenson, Penelope Tree, and others.

In 1973, Vogue became a monthly publication. Under editor-in-chief Grace Mirabella, the magazine underwent extensive editorial and stylistic changes to respond to changes in the lifestyles of its target audience, it became closer to ordinary American values.

Wintour forever!

Anna Wintour became editor-in-chief of American Vogue in July 1988. Noted for her trademark bob cut and sunglasses, Wintour sought to revitalize the brand by making it younger and more approachable; she directed the focus towards new and accessible concepts of "fashion" for a wider audience. Wintour's influence allowed the magazine to maintain its high circulation, while staff discovered new tendencies that a broader audience could conceivably afford. As fashion editor, Grace Coddington wrote in her memoirs, the cover "endorsed a democratic new high/low attitude to dressing, added some youthful but sophisticated raciness, and garnished it with a dash of confident energy and drive that implied getting somewhere fast. It was quintessential Anna." Wintour continues to be American Vogue's editor-in-chief to this day.

Wintour also began Teen Vogue (2003) and Men’s Vogue (2005–08) in the United States. In 2003 she and the Council of Fashion Designers of America (CFDA) jointly inaugurated the CFDA/Vogue Fashion Fund, which offered financial support and business mentoring to the “next generation” of American fashion designers.

In 2009 the film documentary The September Issue—which chronicled the production of the magazine’s record-breaking 840-page September 2007 issue—was released to critical acclaim. Later that year Vogue launched Fashion’s Night Out, a joint global initiative encouraging people to patronize international designers and retailers during the financial crisis; the now annual affair marked the largest shopping event in history.

Vogue has enjoyed international success, with both standard and special editions published around the globe. One of the world's most prominent fashion magazines, it has heavily influenced the development of the fashion magazine industry and continues to shape modern fashion trends. In 2009 The New York Times christened Vogue "high fashion bible."

4.2 Vogue magazine today

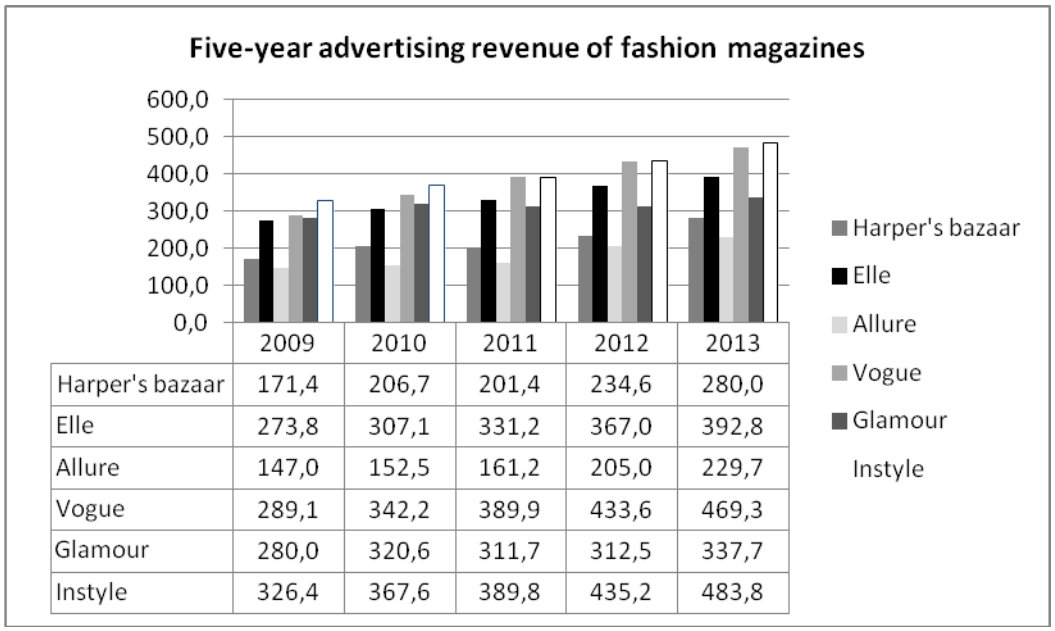
Nowadays Vogue is a monster in mass media sphere, representing the upcoming fashion and beauty industry in one bottle. On the pages of this phenomenal issue readers find out the freshest news from catwalks, celebrities life and the most useful lifehacks for successful and independent.

As Wintour became an American editor-in-chef, the magazine started to be personified. In 2003 her assistant Lauren Weisberger wrote a roman "The Devil Wears Prada", where the inside pages of the fashion barometer are opened. The novel became a bestseller and was adapted in a Academy Award film released in 2006 with starring Anne Hathaway and Meryl Streep. The success of the novel and its screen variant brought a new view from wide global public to the power and glamour of the journal and the industry it continues to lead.

From the 2000' Vogue became iconic formating the special style of living. Many people all around the world aim to look like their cover girls, use cosmetics advertised and looks compilations offered in glance.

Looking at economic situation Vogue is also taking the headliners place:

Figure 3 - Five year advertising revenue of fashion magazines in million dollars

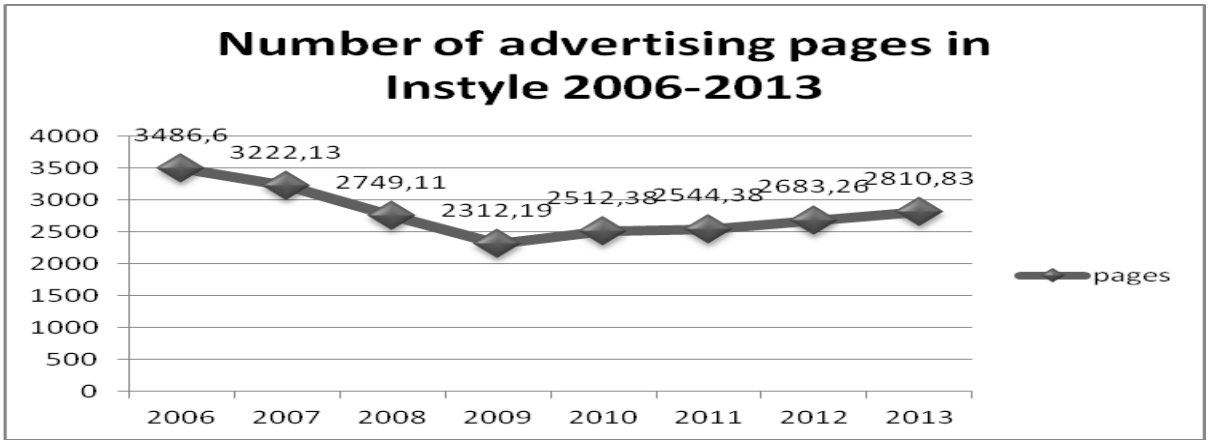


	2009	2010	2011	2012	2013
Harper's bazaar	171,4	206,7	201,4	234,6	280,0
Elle	273,8	307,1	331,2	367,0	392,8
Allure	147,0	152,5	161,2	205,0	229,7
Vogue	289,1	342,2	389,9	433,6	469,3
Glamour	280,0	320,6	311,7	312,5	337,7
Instyle	326,4	367,6	389,8	435,2	483,8

(Source: own elaboration based on Association of Magazine Media data)

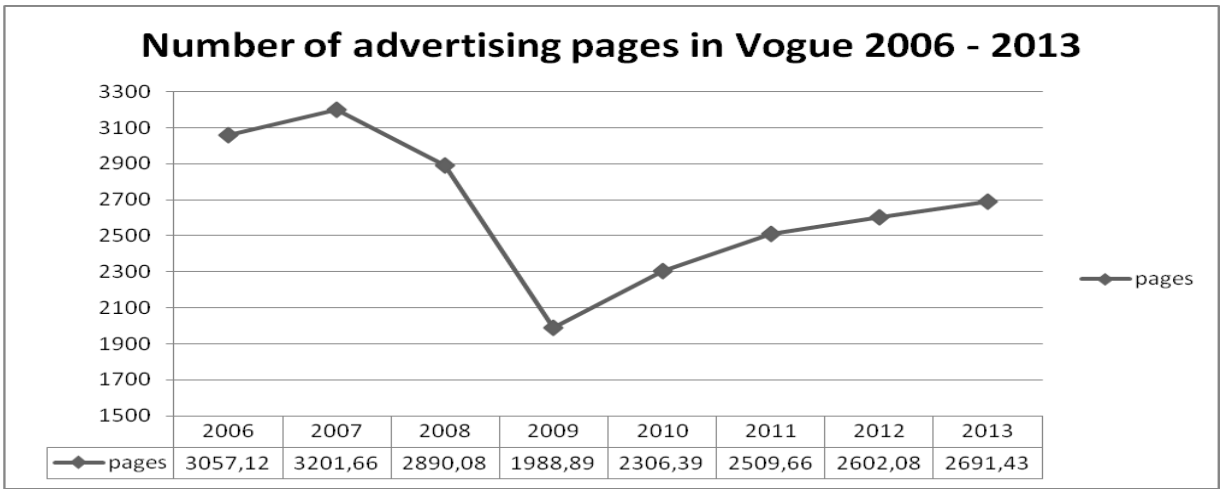
In Style visibly beats Vogue, but based on the ad content comparison, brands advertised in Vogue are more luxurious, as first, and as second average prices for magazines are much different (50$ for Vogue and 8$ for In style). In Style readers are ordinary middle-class working women, who needs magaines to spend time in public transportation.

Figure 4 - Number of advertising pages in Instyle 2006-2013



(Source: own elaboration based on Association of Magazine Media data)

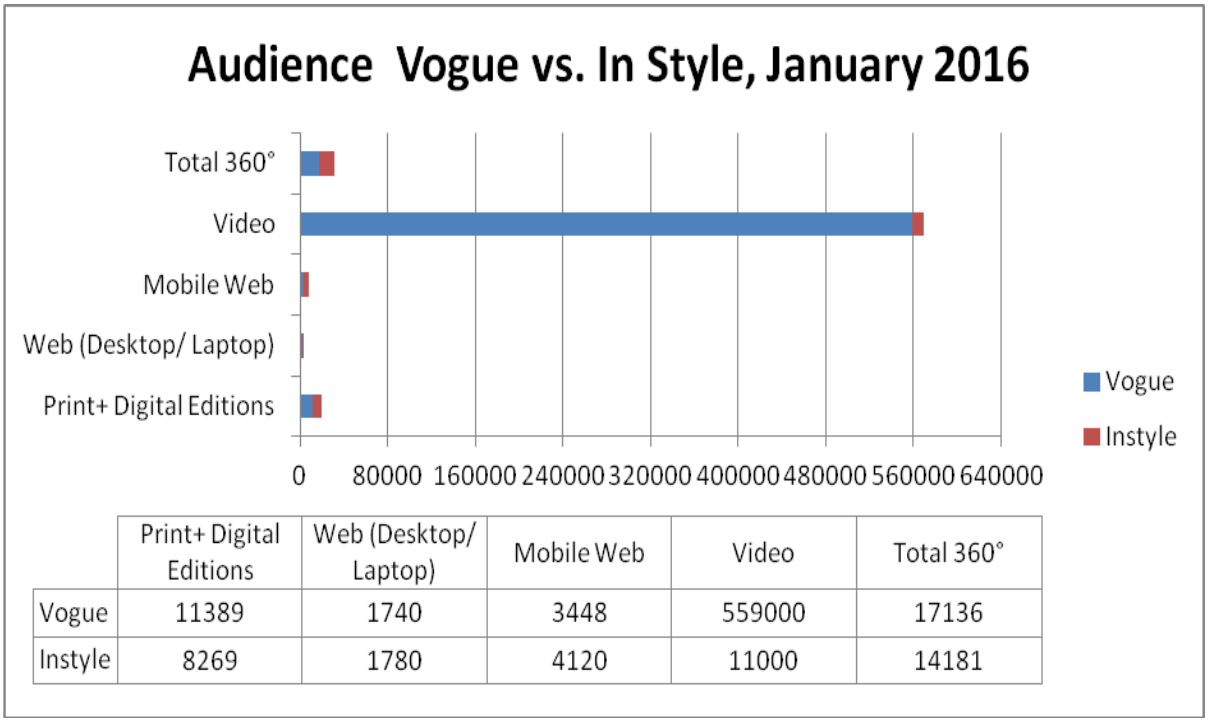
Figure 5 - Number of advertising pages in Vogue 2006 – 2013



(Source: own elaboration based on Association of Magazine Media data)

But actual compitition between Vogue and In Style is won by Vogue in aspect of following. Let's compare even the performance of the periodicals this and last January.

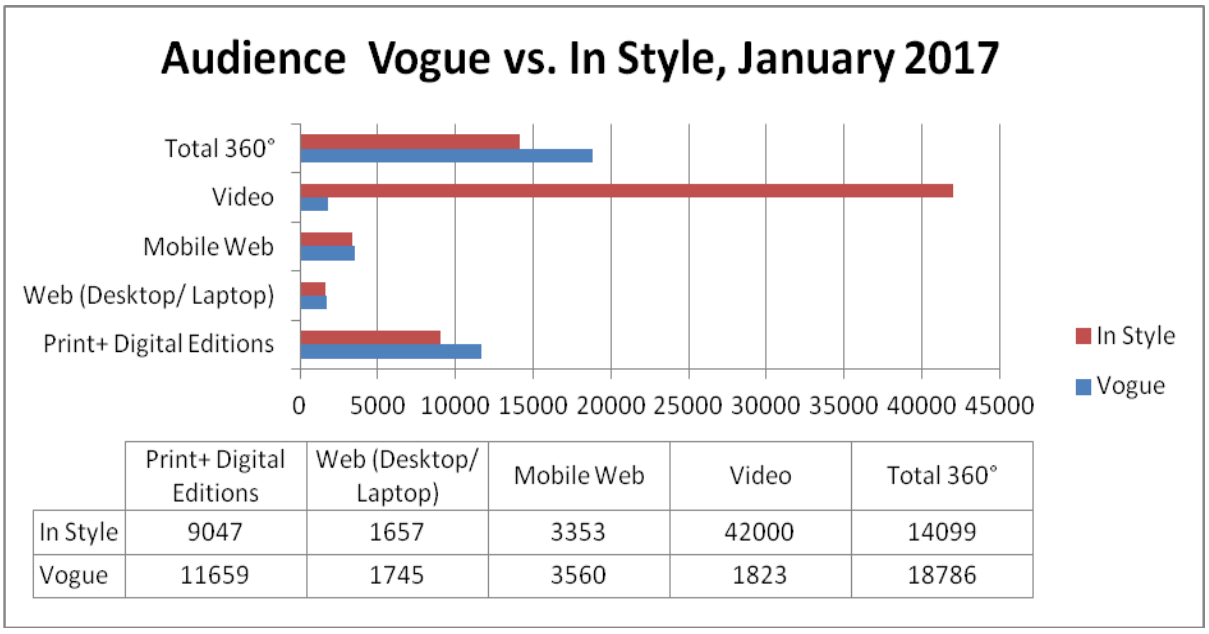
Figure 6 - Audience of Vogue and In Style in January 2016, million people



	Print+ Digital Editions	Web (Desktop/ Laptop)	Mobile Web	Video	Total 360°
Vogue	11389	1740	3448	559000	17136
Instyle	8269	1780	4120	11000	14181

(Source: own elaboration based on The MPA Magazine Media 360° Brand Audience Report)

Figure 7 - Audience of Vogue and In Style in January 2017, million people



	Print+ Digital Editions	Web (Desktop/ Laptop)	Mobile Web	Video	Total 360°
In Style	9047	1657	3353	42000	14099
Vogue	11659	1745	3560	1823	18786

(Source: own elaboration based on The MPA Magazine Media 360° Brand Audience Report)

Table 1 - Table 1 - five year Vogue advertising revenue, million dollars

2007	2008	2009	2010	2011
419037	395775	289138	342217	385236

(Source: own elaboration based on Media Industry Newsletter. 1/2/2012, Vol. 65 Issue 1, p8-9. 2p.data)

Total audience of Vogue now in total is 1190900 with medium age 38.3, as published on Conde Nast sources. Let's see if the questionnaire proves the age, gender ratio 87%/13% (female/male) and 66% of educated (at least college) readers.

5 Practical Part

5.1 Sample size determination

In the beginning of every survey the sample size must be determined.

Sample size is very important trait of any empirical research, which aim is to make inferences about the whole population from a sample. Vogue total population is 11,90900 people, so with the confidence level of 95% and confidence interval of 10 the sample size needed to check the tendencies of the target group is 96. The study is understood to be influenced by the specific factors, such as distribution way, place where it is held, participants. So the results might not absolutely reflect the total populational investigations conducted specially for Vogue customer proper administration by official statistical agencies.

5.2 Statistical analysis of data and its evaluation

The questionnaire was used to the aim of analysis. It was created according to the rules, which are deeply described in the theoretical part. A self-administered questionnaire survey was conducted. Statistical analysis of the responses was carried out via tracing a binomial distribution, correlation coefficient determination. The survey questionnaire consists of 12 questions. Some of questions are closed-end; and some offer a multiple answer, all answers had possibility to answer “Other”.

5.3 Evaluation of survey

In the questionnaire, totally 135 respondents filled in. For collecting the data, a survey questionnaire was distributed through online with the use of Google forms. A “snowball sampling” was adopted for questionnaires distribution. This method of sampling the researcher make initial contact with small group of people who are relevant to the research topic and then uses to establish contact with others. The survey links were sent out to initial contacts that were carried out through emails and social media.

5.4 Structure of respondents and identification

Following graph shows the ratio between males and females (13 to 122) participants of the survey. 23 from 135 do not follow new issues.

Figure 8 - "What is your gender?" responses Figure

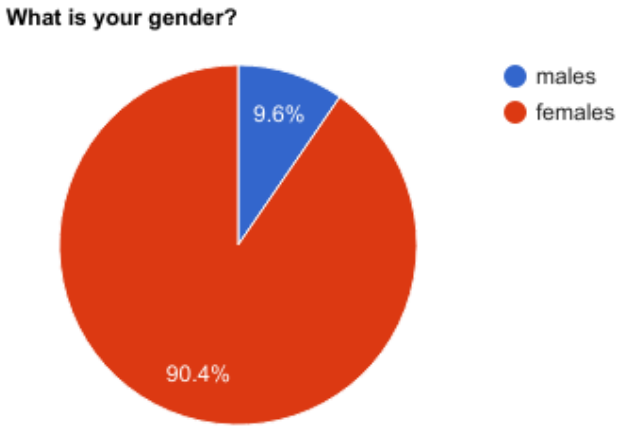
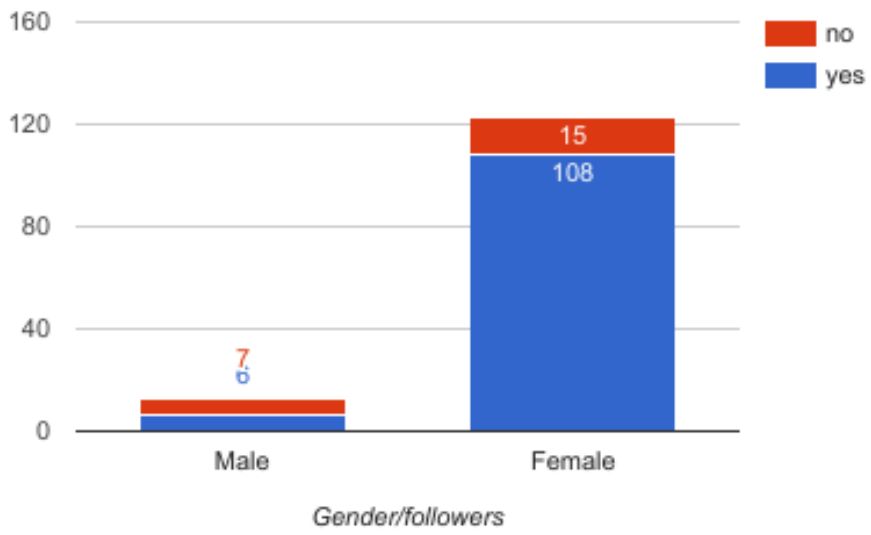


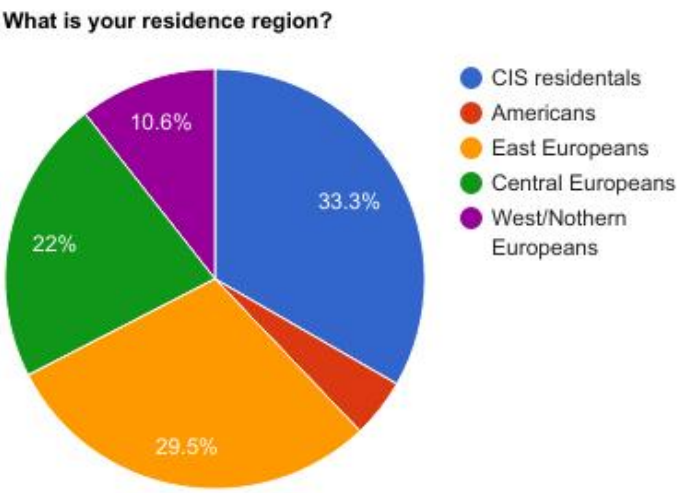
Figure 9 - "Gender/followers" ratio



Here it is visible how many men and women do not follow Vogue.

The second question was about residence of the respondents. They can match CIS countries, East/Central/West-Northern Europe or America. 44 were from CIS countries, 39 from East Europe, 29 from Central Europe, 14 from West-Northern Europe and 6 Americans.

Figure 10 - "What is your residence region?" responses



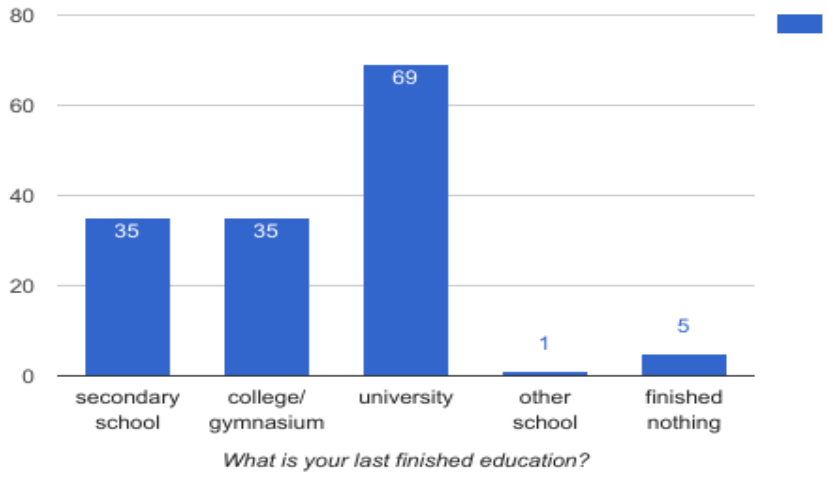
The third question was about age of readers. The results may be caused by the fact that many respondents are followers or friends of the researcher on social sites.

Table 2 - "What is your age?" responses

what is your age?	
<20	54
21-30	70
31-40	7
41-50	3
50<	1

The fourth question was about last finished education.

Figure 11 - “What is your last finished education?” responses



Getting the responses to these questions we can portrait the reader. According to results it is a young woman (21-30 years old), who finished university from Eastern Europe or CIS countries. The origin may be caused by the fact, that it was an online survey offered to friends, who are mainly Russians/CIS and posted in communities about Vogue magazine in vk.com and facebook.com.

5.5 Evaluation of Vogue readers

Some questions easily can show global popularity of Vogue and categorize much deep its buyers. “How did you know about the magazine?”, “How do you follow Vogue issues?”, “What topics of Vogue articles are the most interesting for you?”, “What type of edition do you prefer?”, “Do you think that Vogue magazine is a giant between fashion popular periodicals, that's really hard to struggle with?”. Such questions can identify and clarify social trends and find out importance of the usage of certain marketing strategies in the region.

The results are following.

Figure 12 - "How did you know about Vogue magazine?" responses

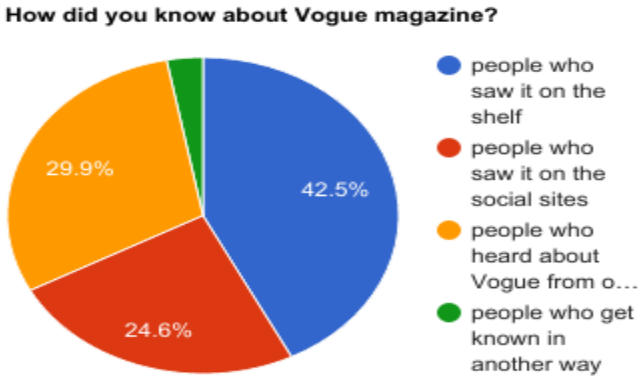


Figure 13 - "How do you follow Vogue issues?" responses

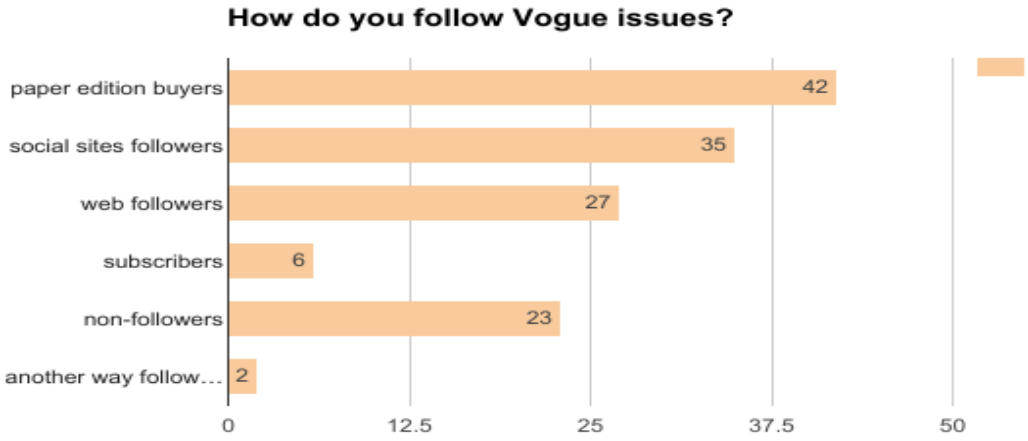
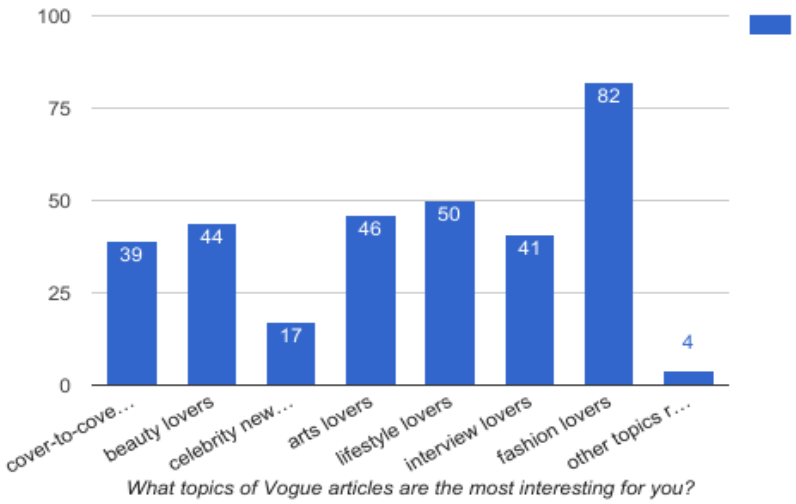


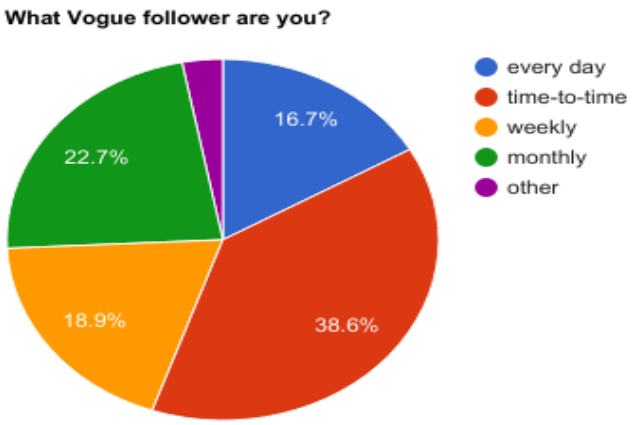
Figure 14 -"What topics of Vogue articles are the most interesting for you?" responses



This question gives to respondent possibility to open wider by choosing not just one variant. Interpreting the results fashion topic, lifestyle and arts are the most popular among Vogue customers.

The next question was about frequency of reading the magazine. 51 people are time-to-time followers, 22 check the new every day, 25 - weekly, 30 - monthly and 4 marked "Other".

Figure 15 - "What Vogue follower are you?" responses



Also the respondents provided information about their hobbies and occupation. They had a possibility to choose more than one reply. The Table 3 shows how many times the option was marked.

Table 3- Occupation and hobbies of respondents

Occupation	Hobbies
Student - 96	Arts - 69
Employee -54	Reading - 82
Freelancer - 13	Spending time with friends - 48
Traveller - 30	Sport - 50
Occupied by something else - 1	Collecting - 14
	Outside activities - 28
	Other - 11

The results of the last question: ”Do you think that Vogue magazine is a giant between fashion popular periodicals, that's really hard to struggle with?” show that 78 people are totally agree, 28 disagree, 27 hesitate and 1 has another opinion.

5.6 Statistical testing

Binomial distribution, the mean and variance were calculated as the first step of estimation. Multinomial distribution is also considered as useful, but it was not significantly needed to apply to analysis. The technique of logistic regression was also implemented to the data. Information gathered from multi-choice replies could not go through logistic regression,that is why it was tested using Chi-test, as logistic regression strictly needs to have the same number of variations. All calculations were provided through Excel and XLStat add-on.

Step 1.

As first the data got from the survey, were coded. The certain number was attached to every variant. The process helped to count the total numbers of them and the possible variations.

Table 4 - Sample of coded data – „Results of "What is your hobby?" question"

Hobby/respondent number	1	2	3	4	5
sport	0	0	0	0	1
outside	0	0	0	1	0
friends	0	1	0	0	0
reading	0	0	1	0	0
collecting	0	0	0	0	0
arts	1	0	0	0	0
other	0	0	0	0	0

Step 2.

All data were correlated. Correlation coefficient r shows the power of relations between variables. It can be in the interval (-1;1) where negativity or positivity really does not matter, as the modulus of the number is estimated. Reflecting results from Appendix 1, there is a high dependence between education and topics of interest (|r|=0,917816862721145), education and opinion about Vogue if it is one of the giants on the media market (|r|= 0,849231934803217), r hobby and frequency of reading (|r|= 0, 996853729729314), occupation and frequency of reading (|r|= 0,9679984082991310), hobby and education (|r|= 0,91896970462086). The lowest correlation is between prefered edition and hobby (|r|= 0,0167324475874809).

Step 3.

Obtaining the results of Step 2. it was really essential to strenthen them with utilizing another deeper analysis. Logistic analysis includes in Goodness of fit analysis, plotting the ROC curve, model equationing, etc. This multi-aspect approach helps to examine variables from different points of view.and find out the variables influencing on the readership. The variables of residence region, age, gender, finished education. But at first some hypotheses, based on the questionnaire trends in responses, should be settled:

1. H_0: There is no effect of CIS countries residence on the readership
   H_1: There is an effect of CIS countries residence on the readership
2. H_0: There is no effect of 21-30 age on the readership
   H_1: There is an effect of 21-30 age on the readership

3. H_0: There is no effect of gender on the readership

   H_1: There is an effect of gender on the readership

4. H_0: There is no effect of university education on the readership

   H_1: There is an effect of university education on the readership

Step 4

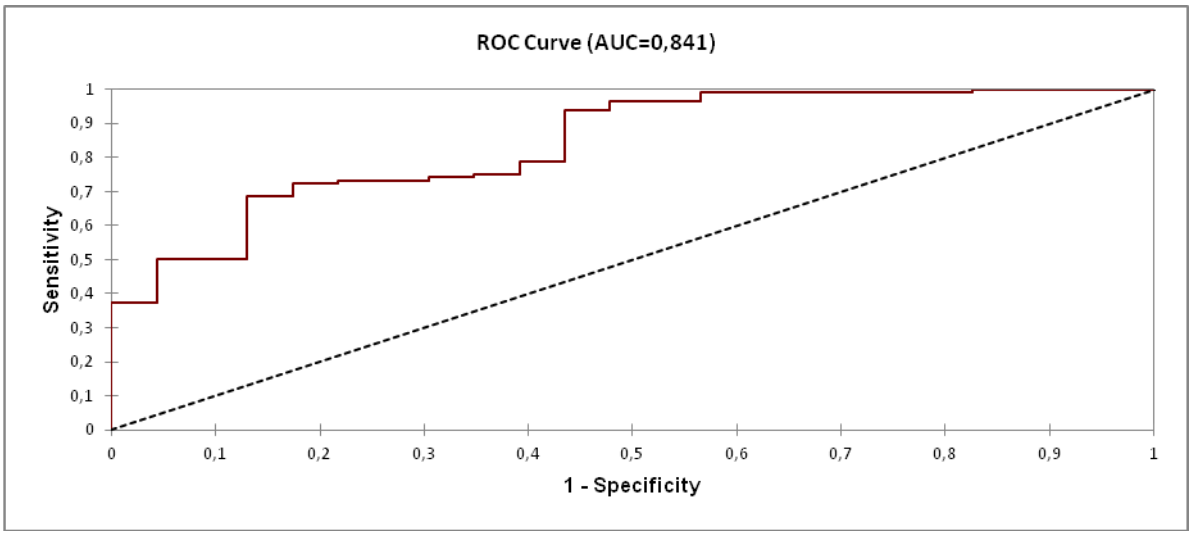
After setting the hypotheses the evaluation of results should applied to the regressional model. The table with results is attached to **The Appendix 2** There are few the most significant parts of logistic regression analysis according to which the conclusion can be made. That are ROC curve, model parameters, Goodness of fit statistics, test of null hypothesis.

Looking at the model parameters, intercept is significant; checking the probability of the Chi-squares the variables most influencing the readership is age between 21 and 30 and female, p=0.017 and p=0.002 accordingly. This easily let us to reject H_0 ($p<\alpha$) and accept H_1 for the third and second hypotheses statements. Considering the first hypotheses statement: p= 0.295, it allows to accept H_0 ($p>\alpha$) and reject H_1, Examining the forth hypotheses statement: p= 0.295, we reject H_1 in favor to H_0 ($p>\alpha$).

The table of Goodness of fit statistics gives several attributes of the quality of the model. The outcomes are the same if the data would be analysed with ANOVA. The significant value to catch up is the probability of Chi-square test on the log ratio, the equivalent to the Fisher's F-test, checking if the variables bring valuable information by comparing the model as it is defined with a sampler model with one restriction. If the probability is less than 0.0001, the variables are important and bring significant information about the variables. And it is statisticaly confirmed that our variables are significant.

ROC curve demonstrates the performance of the model by means of the area under the curve AUC, here it is visible that the means are all above the AUC line. That again verifies the goodness of fit of the model.

Figure 16 – ROC curve



6 Conclusion

The thesis primary purpose was to investigate how the journal got to the top, the up-to-date social trends and offer conceivable way how to improve the economic condition of the periodical. At first the historical back ground was reviewed, that gave the understanding of the Vogue present. Then the common market trends were examined. Comparing information about quantity of following last January and this January about Vogue and In Style, which dominated alao above Allure, Elle, Glamour and Harper's Bazaarfor ad revenue in 2009-2013, it was concluded that Vogue wins in almost all types of publications. The anonymous online questionnaire was the tool of determination the public's characteristics and interests. Responses from 135 participants (122 women and 13 men) were coded and correlation, binomial distribution and logistic regression analysis were applied to the sample. All calculations were made in Excel. The results were influenced by the platform where it was held – Google disc form was posted on Facebook and vk.com in appropriate communities and sent to friends. Possibly that is the reason that the average age of the followers differs from officially introduced 38.3. It is 21-30, 51% finished university, together with college/gymnasiumthat gives 77% to 66% official. Fashion and life-style are among the most interesting topics, 38,6% of the sample population follow the new time-to-time. Logistic regression analysis showed that model can be applied to the population, though university education, and CIS countries residence (the majority of replies – 31%) do not have an impact on the readership or following, when age of 21-30 and gender play a substantial roles. As a recommendation or a economical development program proposal, according to the calculations, new marketing campaign should be concentrated on active educated younger women, who goes in for reading, arts and keen on articles about different cultures, fashion, life-style.

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Appendix 1

8 Table 1 – Binomial distribution and correlation results

probability of gender	**total**	**ratio**	**mean**	**variance**	binomial distribution	correlation r	
total number of respondents	135					residence/edition r	0,22874729
total females	122					residence/opinion r	0,2535081826
total males	13					education/how follow r	0,6102282711
probability of females (1)		0,90	67,50	33,75	1,000000000000	education/interest r	0,9189697046
probability of males (0)		0,10			0,000000000000	hobby/interest in topics r	0,501
probability of the age			27,00	21,60		education/type of edition r	0,447
<20 (1)	54	0,40			0,999999970932	age/frequency r	0,666
21-30 (5)	70	0,52			1,000000000000	interest in topics/age r	0,119
31-40 (2)	7	0,05			0,000000882536	interest in topics/education r	0,918
41-50 (3)	3	0,02			0,000000000567	how follow/interest r	0,203
50< (4)	1	0,01			0,000000000003	type of edition/age r	0,422
probability of residence			27,00	21,60		gender/hobby r	1,000
total number of CIS residentals (3)	42	0,31			0,999224935891	gender/how people know about V	1,000

total number of Americans (2)	6	0,04			0,000000184358	r gender/way of following	1,000
total number of East Europeans (4)	39	0,29			0,995071965711	r gender/interest in topics	1,0000000000
total number of Central Europeans (1)	29	0,21			0,709870048050	r gender/frequency	1,0000000000
total number of West/Nothern Europeans (5)	18	0,13			0,029372607939	r gender/opinion	1,0000000000
other	1	0,01					
probability of finished education			27,00	21,60	0,000000000003	r gender/type of edition	1,0000000000
total number of people finished secondary school(1)	25	0,19			0,380923807727	r age/how follow	0,6860656194
total number of people finished college/gymnasium (2)	35	0,26			0,962955608249	r age/opinion	0,5724664640
total number of people finished university (3)	69	0,51			1,000000000000	r residence/how follow	0,447188983
total number of people finished other school (4)	1	0,01			0,000000000003	r residence/interest	0,7452045757
total number of people finished nothing(5)	5	0,04			0,000000032816	r residence/frequency	0,248450612
probability of interests			43,14	36,98		r education/frequency	0,292893399
total number of people go in for arts	69	0,51			1,000000000000	r education/opinion	0,849231935
total number of people go in for reading	82	0,61			1,000000000000	r hobby/how follow	0,4929148991

total number of spending time with friends	48	0,36			0,999999999915	r hobby/frequency	0,9968537297
total number of sport lovers	50	0,37			0,999999999994	r hobby/edition	0,0167324476
total number of people go in for collecting	14	0,10			0,135844750349	r hobby/opinion	0,4827823514
total number of outside activities lovers	28	0,21			0,988377822436	r occupation/how follow	0,2543375201
total number of people go in for smth other	11	0,08			0,027122402405	r occupation/interest	0,1740234009
probability of occupation			38,80	31,04		r occupation/frequency	0,9679984083
total number of students	96	0,71			1,000000000000	r occupation/edition	0,3486896919
total number of workers	54	0,40			0,999999970932	r occupation/opinion	0,1305494641
total number of freelancers	13	0,10			0,000899223274		
total number of travellers	30	0,22			0,777095225403		
total number of people occupied with smth other	1	0,01			0,000000000003		
probability of how people know about Vogue			33,75	25,31			
total number of people who saw it on the shelf	57	0,42			0,999996036375		

total number of people who saw it on the social sites	33	0,24			0,486817943977
total number of people who heard about Vogue from others	40	0,30			0,908269902083
total number of people who get known in another way	4	0,03			0,000000000002
probability of how people follow new issues			22,50	18,75	
total number of paper edition buyers	42	0,31			0,999999902625
total number of social sites followers	35	0,26			0,999919574084
total number of web followers	27	0,20			0,979669543244
total number of subscribers	6	0,04			0,000273972071
total number of non-followers	23	0,17			0,871665345714
total numbers of another way followers	2	0,01			0,000000377322
probability of interest topics			40,38	35,33	
total number of cover-to-cover readers	39	0,29			0,999999889731
total number of beauty lovers	44	0,33			0,999999999710
total number of celebrity news lovers	17	0,13			0,577031481560
total number of arts lovers	46	0,34			0,999999999979
total number of lifestyle lovers	50	0,37			1,000000000000

total number of interview lovers	41	0,30			0,999999988685
total number of fashion lovers	82	0,61			1,000000000000
total number of other topics lovers	4	0,03			0,000102096958
probability of frequency of following			27,00	21,60	
every day checkers	22	0,16			0,166669676066
time-to-time checkers	51	0,38			0,999999440458
weekly checkers	25	0,19			0,380923807727
monthly checkers	30	0,22			0,777095225403
other	4	0,03			0,000000004839
probability of prefered edition			33,75	25,31	
total number of printed edition lovers	86	0,64			1,000000000000
total number of online lovers	17	0,13			0,000288117484
total number of social sites followers	28	0,21			0,147895071835
total number of other type followers	4	0,03			0,000000000002
probability of people's thought that Vogue is one of the greatest magazines			33,75	25,31	1,000000000000
total number of agreeing people	78	0,58			0,147895071835
total number of disagreed	28	0,21			0,105149760169
total number of hesitating	27	0,20			0,000000000000

total number of having another opinion	1	0,01

Appendix 2

10 Table 1 – Logistic regression

Response type: Binary
Constraints: a1=0
Confidence interval (%): 95
Stop conditions: Iterations = 100 / Convergence = 0,000001

Maximization of the likelihood function using the Newton-Raphson algorithm
Run again:

Summary statistics:

Variable	Categories	Frequencies	%
Do you follow the magazine?	0	23	17,037
	1	112	82,963

Variable	Categories	Frequencies	%
What is your gender?	0	13	9,630
	1	122	90,370
What is your residence region?	0	1	0,741

	1	29	21,481
	2	6	4,444
	3	42	31,111
	4	39	28,889
	5	18	13,333
What is your age?	1	54	40,000
	2	7	5,185
	3	3	2,222
	4	1	0,741
	5	70	51,852
What is your last finished education?	0	1	0,741
	1	25	18,519
	2	35	25,926
	3	69	51,111
	5	5	3,704

Regression of variable Do you follow the magazine?:

An almost complete separation of observations has been detected

Correspondence between the categories of the response variable and the probabilities (Variable Do you follow the magazine?):

Categories	Probabilities

0	0
1	1

Test of the null hypothesis H0: Y=0,830 (Variable Do you follow the magazine?):

Statistic	DF	Chi-square	Pr > Chi2
-2 Log(Likelihood)	14	70,726	< 0,0001
Score	14	44,021	< 0,0001
Wald	14	21,495	0,090

Type II analysis (Variable Do you follow the magazine?):

Source	DF	Chi-square (Wald)	Pr > Wald	Chi-square (LR)
What is your gender?	1	9,772	0,002	48,306
What is your residence region?	5	6,703	0,244	44,451
What is your age?	4	7,393	0,117	42,392
What is your last finished education?	4	8,590	0,072	44,073

Model parameters (Variable Do you follow the magazine?):

Source	Value		Standard error	Wald Chi-Square	Pr > Chi2	Odds ratio	Odds ratio Lower bound (95%)	Odds ratio Upper bound (95%)
Intercept		-2,368	3,578	0,438	0,508			
What is your gender?-0		0,000	0,000					
What is your gender?-1		2,521	0,806	9,772	0,002	12,435	2,561	60,393
What is your residence region?-0		0,000	0,000					
What is your residence region?-1		0,807	2,400	0,113	0,737	2,240	0,020	247,020
What is your residence region?-2		2,328	2,759	0,712	0,399	10,254	0,046	2288,724
What is your residence region?-3		2,578	2,461	1,097	0,295	13,173	0,106	1639,483
What is your residence region?-4		0,718	2,376	0,091	0,763	2,050	0,019	215,982
What is your residence region?-5		0,624	2,413	0,067	0,796	1,866	0,016	211,368
What is your age?-1		0,000	0,000					
What is your age?-2		-1,943	1,433	1,838	0,175	0,143	0,009	2,376
What is your age?-3		-2,940	1,698	2,998	0,083	0,053	0,002	1,474
What is your age?-4		-4,214	2,564	2,700	0,100	0,015	0,000	2,252
What is your age?-5		-1,635	0,683	5,731	0,017	0,195	0,051	0,743
What is your last finished education?-0		0,000	0,000					
What is your last finished education?-1		0,832	2,518	0,109	0,741	2,299	0,017	319,610
What is your last finished education?-2		0,790	2,451	0,104	0,747	2,203	0,018	268,615
What is your last finished education?-3		2,578	2,461	1,097	0,295	13,173	0,106	1639,483
What is your last finished education?-5		0,043	2,733	0,000	0,987	1,044	0,005	221,173

Equation of the model (Variable Do you follow the magazine?):

Pred(Do you follow the magazine?) = 1 / (1 + exp(-(-2,36779731136713+2,52054931973604*What is your gender?-1+0,806532891985771*What is your residence region?-1+2,32765452206464*What is your residence region?-2+2,57819718827446*What is your residence region?-3+0,717929517768086*What is your residence region?-4+0,623768868471905*What is your residence region?-5-1,94270965338428*What is your age?-2-2,93995456848548*What is your age?-3-4,21358275794204*What is your age?-4-1,63538556966753*What is your age?-5+0,832365853878766*What is your last finished education?-1+0,789635767272678*What is your last finished

education?-2+2,57819718827436*What is your last finished education?-3+4,33003868580433E-02*What is your last finished education?-5)))

Predictions and residuals (Variable Do you follow the magazine?):

Observation	Weight	Do you follow the magazine?	Pred(Do you follow the magazine?)	Independent	Std. residual	Std. residual (Independent)	Lower bound 95%	Upper bound 95%
1	1	0	0,870	0,830	-2,588	-2,207	0,649	0,960
2	1	1	0,870	0,830	0,386	0,453	0,649	0,960
3	1	0	0,086	0,830	-0,307	-2,207	0,009	0,492
4	1	0	0,528	0,830	-1,058	-2,207	0,206	0,829
5	1	1	0,306	0,830	1,505	0,453	0,057	0,763

6	1	1	0,645	0,830	0,743	0,453	0,098	0,968
7	1	0	0,083	0,830	-0,300	-2,207	0,010	0,448
8	1	0	0,346	0,830	-0,728	-2,207	0,064	0,804
9	1	1	0,914	0,830	0,306	0,453	0,301	0,996
10	1	0	0,310	0,830	-0,670	-2,207	0,068	0,733
11	1	1	0,870	0,830	0,386	0,453	0,649	0,960
12	1	1	0,958	0,830	0,211	0,453	0,484	0,998
13	1	1	0,837	0,830	0,442	0,453	0,228	0,989
14	1	0	0,483	0,830	-0,966	-2,207	0,192	0,785
15	1	0	0,506	0,830	-1,013	-2,207	0,236	0,773
16	1	1	0,602	0,830	0,813	0,453	0,073	0,967
17	1	0	0,310	0,830	-0,670	-2,207	0,068	0,733
18	1	1	0,967	0,830	0,186	0,453	0,619	0,998
19	1	0	0,846	0,830	-2,343	-2,207	0,557	0,960
20	1	0	0,284	0,830	-0,629	-2,207	0,030	0,834
21	1	0	0,506	0,830	-1,013	-2,207	0,236	0,773
22	1	1	0,975	0,830	0,159	0,453	0,880	0,995
23	1	1	0,860	0,830	0,404	0,453	0,669	0,949
24	1	1	0,870	0,830	0,386	0,453	0,649	0,960
25	1	1	0,870	0,830	0,386	0,453	0,649	0,960
26	1	1	0,975	0,830	0,159	0,453	0,880	0,995
27	1	1	0,941	0,830	0,250	0,453	0,484	0,996
28	1	1	0,975	0,830	0,159	0,453	0,880	0,995
29	1	1	0,840	0,830	0,436	0,453	0,593	0,950
30	1	1	0,868	0,830	0,390	0,453	0,566	0,971
31	1	1	0,860	0,830	0,404	0,453	0,669	0,949
32	1	0	0,852	0,830	-2,398	-2,207	0,542	0,965
33	1	1	0,860	0,830	0,404	0,453	0,669	0,949
34	1	0	0,848	0,830	-2,362	-2,207	0,583	0,957
35	1	1	0,857	0,830	0,408	0,453	0,570	0,965
36	1	1	0,972	0,830	0,168	0,453	0,850	0,995
37	1	1	0,860	0,830	0,404	0,453	0,669	0,949
38	1	1	0,857	0,830	0,408	0,453	0,570	0,965
39	1	1	0,517	0,830	0,967	0,453	0,145	0,871

40	1	1	0,860	0,830	0,404	0,453	0,669	0,949
41	1	1	0,860	0,830	0,404	0,453	0,669	0,949
42	1	1	0,840	0,830	0,436	0,453	0,593	0,950
43	1	1	0,995	0,830	0,070	0,453	0,958	0,999
44	1	1	0,971	0,830	0,172	0,453	0,840	0,995
45	1	1	0,941	0,830	0,250	0,453	0,484	0,996
46	1	1	0,840	0,830	0,436	0,453	0,593	0,950
47	1	1	0,818	0,830	0,471	0,453	0,259	0,983
48	1	1	0,870	0,830	0,386	0,453	0,649	0,960
49	1	1	0,967	0,830	0,186	0,453	0,619	0,998
50	1	1	0,860	0,830	0,404	0,453	0,669	0,949
51	1	1	0,857	0,830	0,408	0,453	0,570	0,965
52	1	1	0,833	0,830	0,447	0,453	0,448	0,969
53	1	1	0,995	0,830	0,070	0,453	0,958	0,999
54	1	1	0,972	0,830	0,168	0,453	0,850	0,995
55	1	1	0,870	0,830	0,386	0,453	0,649	0,960
56	1	1	0,971	0,830	0,172	0,453	0,840	0,995
57	1	1	0,827	0,830	0,457	0,453	0,495	0,959
58	1	1	0,972	0,830	0,168	0,453	0,850	0,995
59	1	1	0,860	0,830	0,404	0,453	0,669	0,949
60	1	1	0,965	0,830	0,191	0,453	0,551	0,998
61	1	1	0,975	0,830	0,159	0,453	0,880	0,995
62	1	1	0,846	0,830	0,427	0,453	0,557	0,960
63	1	1	0,975	0,830	0,159	0,453	0,880	0,995
64	1	1	0,860	0,830	0,404	0,453	0,669	0,949
65	1	1	0,749	0,830	0,578	0,453	0,031	0,996
66	1	1	0,840	0,830	0,436	0,453	0,593	0,950
67	1	1	0,868	0,830	0,390	0,453	0,566	0,971
68	1	1	0,717	0,830	0,629	0,453	0,244	0,952
69	1	1	0,870	0,830	0,386	0,453	0,649	0,960
70	1	1	0,760	0,830	0,562	0,453	0,317	0,956
71	1	1	0,963	0,830	0,195	0,453	0,571	0,998
72	1	1	0,966	0,830	0,187	0,453	0,807	0,995
73	1	1	0,975	0,830	0,159	0,453	0,880	0,995

74	1	1	0,972	0,830	0,168	0,453	0,850	0,995
75	1	1	0,848	0,830	0,423	0,453	0,583	0,957
76	1	1	0,971	0,830	0,172	0,453	0,840	0,995
77	1	1	0,860	0,830	0,404	0,453	0,669	0,949
78	1	1	0,749	0,830	0,578	0,453	0,031	0,996
79	1	1	0,860	0,830	0,404	0,453	0,669	0,949
80	1	1	0,972	0,830	0,171	0,453	0,854	0,995
81	1	1	0,972	0,830	0,171	0,453	0,854	0,995
82	1	1	0,483	0,830	1,035	0,453	0,192	0,785
83	1	0	0,840	0,830	-2,294	-2,207	0,593	0,950
84	1	1	0,873	0,830	0,381	0,453	0,489	0,980
85	1	1	0,860	0,830	0,404	0,453	0,669	0,949
86	1	1	0,975	0,830	0,159	0,453	0,880	0,995
87	1	1	0,975	0,830	0,159	0,453	0,880	0,995
88	1	1	0,848	0,830	0,423	0,453	0,583	0,957
89	1	1	0,739	0,830	0,594	0,453	0,275	0,955
90	1	1	0,969	0,830	0,178	0,453	0,864	0,994
91	1	1	0,972	0,830	0,171	0,453	0,854	0,995
92	1	1	0,868	0,830	0,390	0,453	0,566	0,971
93	1	1	0,857	0,830	0,408	0,453	0,570	0,965
94	1	1	0,860	0,830	0,404	0,453	0,669	0,949
95	1	1	0,972	0,830	0,168	0,453	0,850	0,995
96	1	1	0,972	0,830	0,168	0,453	0,850	0,995
97	1	1	0,848	0,830	0,423	0,453	0,583	0,957
98	1	1	0,857	0,830	0,408	0,453	0,570	0,965
99	1	0	0,846	0,830	-2,343	-2,207	0,557	0,960
100	1	1	0,975	0,830	0,159	0,453	0,880	0,995
101	1	1	0,827	0,830	0,457	0,453	0,495	0,959
102	1	1	0,975	0,830	0,159	0,453	0,880	0,995
103	1	1	0,860	0,830	0,404	0,453	0,669	0,949
104	1	1	0,840	0,830	0,436	0,453	0,593	0,950
105	1	1	0,840	0,830	0,436	0,453	0,593	0,950
106	1	1	0,506	0,830	0,988	0,453	0,236	0,773
107	1	1	0,971	0,830	0,172	0,453	0,840	0,995

108	1	1	0,506	0,830	0,988	0,453	0,236	0,773
109	1	1	0,975	0,830	0,159	0,453	0,880	0,995
110	1	1	0,972	0,830	0,171	0,453	0,854	0,995
111	1	0	0,848	0,830	-2,362	-2,207	0,583	0,957
112	1	1	0,528	0,830	0,945	0,453	0,206	0,829
113	1	1	0,857	0,830	0,408	0,453	0,570	0,965
114	1	1	0,694	0,830	0,664	0,453	0,128	0,972
115	1	1	0,840	0,830	0,436	0,453	0,593	0,950
116	1	1	0,840	0,830	0,436	0,453	0,593	0,950
117	1	1	0,975	0,830	0,159	0,453	0,880	0,995
118	1	1	0,852	0,830	0,417	0,453	0,542	0,965
119	1	1	0,969	0,830	0,178	0,453	0,864	0,994
120	1	1	0,975	0,830	0,159	0,453	0,880	0,995
121	1	1	0,857	0,830	0,408	0,453	0,570	0,965
122	1	0	0,327	0,830	-0,697	-2,207	0,028	0,891
123	1	0	0,873	0,830	-2,622	-2,207	0,489	0,980
124	1	1	0,870	0,830	0,386	0,453	0,649	0,960
125	1	1	0,483	0,830	1,035	0,453	0,192	0,785
126	1	1	0,749	0,830	0,578	0,453	0,031	0,996
127	1	1	0,972	0,830	0,168	0,453	0,850	0,995
128	1	1	0,941	0,830	0,250	0,453	0,484	0,996
129	1	1	0,483	0,830	1,035	0,453	0,192	0,785
130	1	0	0,840	0,830	-2,294	-2,207	0,593	0,950
131	1	1	0,870	0,830	0,386	0,453	0,649	0,960
132	1	1	0,870	0,830	0,386	0,453	0,649	0,960
133	1	0	0,860	0,830	-2,476	-2,207	0,669	0,949
134	1	0	0,248	0,830	-0,574	-2,207	0,027	0,797
135	1	0	0,401	0,830	-0,818	-2,207	0,028	0,939

Classification table for the training sample (Variable Do you follow the magazine?):

from \ to	0	1	Total	% correct
0	10	13	23	43,48%
1	4	108	112	96,43%
Total	14	121	135	87,41%
		0,836		

Comparison of the categories of the qualitative variables (Variable Do you follow the magazine?):

Contrast	DF	Chi-square	Pr > Chi2
What is your gender?-0 vs What is your gender?-1	1	9,772	0,002
What is your residence region?-0 vs What is your residence region?-1	1	0,113	0,737
What is your residence region?-0 vs What is your residence region?-2	1	0,712	0,399
What is your residence region?-0 vs What is your residence region?-3	1	1,097	0,295
What is your residence region?-0 vs What is your residence region?-4	1	0,091	0,763
What is your residence region?-0 vs What is your residence region?-5	1	0,067	0,796
What is your residence region?-1 vs What is your residence region?-2	1	1,006	0,316

What is your residence region?-1 vs What is your residence region?-3	1	3,742	0,053
What is your residence region?-1 vs What is your residence region?-4	1	0,016	0,900
What is your residence region?-1 vs What is your residence region?-5	1	0,049	0,825
What is your residence region?-2 vs What is your residence region?-3	1	0,027	0,870
What is your residence region?-2 vs What is your residence region?-4	1	1,184	0,277
What is your residence region?-2 vs What is your residence region?-5	1	1,368	0,242
What is your residence region?-3 vs What is your residence region?-4	1	4,845	0,028
What is your residence region?-3 vs What is your residence region?-5	1	4,582	0,032
What is your residence region?-4 vs What is your residence region?-5	1	0,017	0,897
What is your age?-1 vs What is your age?-2	1	1,838	0,175
What is your age?-1 vs What is your age?-3	1	2,998	0,083
What is your age?-1 vs What is your age?-4	1	2,700	0,100
What is your age?-1 vs What is your age?-5	1	5,731	0,017
What is your age?-2 vs What is your age?-3	1	0,321	0,571
What is your age?-2 vs	1	0,689	0,407

What is your age?-4 What is your age?-2 vs What is your age?-5	1	0,057	0,812
What is your age?-3 vs What is your age?-4	1	0,203	0,653
What is your age?-3 vs What is your age?-5	1	0,700	0,403
What is your age?-4 vs What is your age?-5	1	1,097	0,295
What is your last finished education?-0 vs What is your last finished education?-1	1	0,109	0,741
What is your last finished education?-0 vs What is your last finished education?-2	1	0,104	0,747
What is your last finished education?-0 vs What is your last finished education?-3	1	1,097	0,295
What is your last finished education?-0 vs What is your last finished education?-5	1	0,000	0,987
What is your last finished education?-1 vs What is your last finished education?-2	1	0,003	0,959
What is your last finished education?-1 vs What is your last finished education?-3	1	3,598	0,058
What is your last finished education?-1 vs What is your last finished education?-5	1	0,286	0,593

What is your last finished education?-2 vs What is your last finished education?-3	1	7,098	0,008
What is your last finished education?-2 vs What is your last finished education?-5	1	0,289	0,591
What is your last finished education?-3 vs What is your last finished education?-5	1	3,041	0,081