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Online Shopping**

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# **THE IMPACT OF WEB PAGE DESIGN ON CONSUMER BEHAVIOUR IN ONLINE SHOPPING**

## **ABSTRACT**

The life of a modern person cannot be imagined without the Internet; this is an obvious fact and an integral part of communication. A modern user of the global network has a wide range of possibilities. The Internet is not only a source of relevant information. The creation of an online store is one of the most popular schemes for doing business on the Internet. More recently, people did not have any confidence in the sale of goods via the Internet, but now almost every user has ordered goods on the Internet at least once.

In online shopping environments, a website interface serves as the "online storefront" for customers to interact with the online retailer, and to experience and evaluate the quality of service manifested by the website design [23]. Previous studies have found that the website design interface plays an important role in online purchasing during customers' initial experiences with an online retailer, as the website design elements and the interaction experience influence customers' initial beliefs and subsequent behavioural intentions [22] and customers are more likely to visit and buy from better-designed websites [16]. However, previous studies have not provided consistent information about the features a website should provide.

The aim of the study is to analyse how consumers evaluate website design when shopping online and how website design affects purchasing power. The study analysed the value that consumers place on website design when shopping online and how website design affects purchasing power. The survey method, one of the quantitative research methods, was used as a research method.

**Keywords:** design features, consumer behaviour, attitude to the site, inspection of intentions, system capabilities.

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## **INTRODUCTION**

### **Explanation of the title**

Today, trading on the Internet is developing at an accelerated pace, the reason for which is not so much the increase in the number of online stores as the increased interest of users and participants in the traditional trade market for a new type of business.

Retailing over the Internet now allows customers to feel that they are in control. Today, the Internet buyer influences marketing more than ever before – he rationally selects products, seeks to find the best product with the best price, carefully listens to the recommendations and reviews of other people.

Consumer behaviour is a special social phenomenon that is characterised by such features as the variability of the offered goods and services, the ability to choose among various forms of leisure activities, personality design through consumer practices, orientation toward prestigious consumption, interaction based on market exchange. The study of the impact of web page design on consumer behaviour in online shopping is relevant. The relevance of this problem is associated with the ever-expanding sphere of Internet commerce and the need to increase the effectiveness of the impact of the graphic elements of the Web site design on the emotional sphere of potential buyers.

### **Aims and objectives**

- analysis the site design specification
- determination of purchasing motives
- hypotheses are proposed to determine the impact of web page design on consumer behaviour.
- analysis by selecting a research model based on hypotheses
- determining the factors that most influence consumer behaviour in website design.

### **Limitations of the study**

The study analysed the value that consumers place on website design when shopping online and how website design affects purchasing power. However, it is limited because of its scope. One of the limitations of this dissertation is that we did not analyse the moderating role of consumer experience. Another limitation is that this thesis analyses the main influence of web

page design on consumer behaviour, although there is an indirect influence on consumer behaviour.

### **Value of the study**

This thesis work is assumed to be a reliable and valuable resource for the readers.

This study aims to empirically test web design factors to predict and explain the behavioural intent of website users. This work will be very useful to researchers who study various studies on both the functions of websites and the interests of consumers from different points of view.

### **Structure of the thesis**

The thesis work is composed of three chapters with its subchapters, an introduction, a conclusion, a recommendation for further research, and bibliography.

The first chapter of it deals with theoretical study studying conceptual foundations of the impact of web page design on consumer behaviour. This section also analyses the motives of buyers when making purchases and website security issues.

The second chapter deals with the practice of these theories, analysis of consumer behaviour in online shopping and the effectiveness of website design for their satisfaction.

In the third part of the thesis results of the study will be discussed. The impact of website design on consumer behaviour in online trading was determined. In the research process, 8 main hypotheses were put forward and based on these hypotheses, a research model was selected and analysed.

**In the fourth chapter** the results of correlation analysis are presented.

In the bibliography part of the work different articles, books and internet resources are mentioned that were used in the writing process of the study as a resource.

### **Background to the study**

The increase in the use of the internet with the development of technology has changed both the lifestyle of people and their shopping habits [1]. These important and positive developments cause businesses to communicate with their target customers through digital media and similar new ways. The use of digital marketing has increased as the consumers responded positively to these developments and this marketing field has become important for

businesses. There is now a “digital consumer” in the global market. It is important for businesses to understand the wishes, attitudes and behaviours of this new generation of consumers. However, it can be said that this is a difficult process [4].

Thanks to digital platforms and digital channels, businesses are able to reach larger customer audiences with less costs and better promote the products and services they produce, and provide after-sales service opportunities, allowing their consumers to recycle quickly and easily [18].

The 21st century, called the digital age, also has a significant impact on the concept of marketing and takes it out of the traditional dimensions. In this process, the phenomenon of marketing is experiencing many changes and developments, both spatially, process and method. This understanding brought about by this era has revealed the concept of digital marketing.

Today, digital marketing offers unique approaches to its customers and creates new experiences. Most people have at least one or several social media memberships. In addition, the time people spend on social media is not low enough to be underestimated. Considering that social media is a platform that draws the attention of millions and keeps them together, it is not possible for the business world to ignore this situation.

That's why businesses use social media and online shopping to gain new customers and to sell. On the other hand, there are many predictions that large and medium level companies will fall behind their competitors when they do not budget for digital marketing and do not care about this issue. Therefore, companies are now trying to promote themselves and increase their sales potential in a digital environment.

Customers' interest in digital marketing has increased, and those who are the most important element of digital marketing, prefer traditional marketing. Customers can choose to shop in a digital environment, due to their time, affordability and ease of access to the products, which they are looking for [11].

As can be seen, the time spent shopping for consumers today is seen as an important problem. Shopping centres spread over a wide area, transportation, parking problems that occur with it create a very complicated and problematic shopping environment. Consumers, who have little free time as a result of their busy working life, go shopping and use this limited time efficiently. This increases the consumers' interest in online shopping. In the online shopping phase, the features of the website used directly affect the preferences and behaviour of the consumer. Sometimes a single complaint issue may cause the consumer to leave the site. In

this sense, determining the quality of the website and its effects on the level of interest in online shopping is an important issue that should be emphasised.

In addition to direct information research, consumers can access information that will contribute to the information seeking process by participating in discussion environments or as a member of groups. Compared to traditional market structures, these methods are both more effortless and faster. Virtual groups and communities cater to consumers of all ages. These groups and communities provide participants or members with a large amount of information on very different topics and create social interaction opportunities [9].

### **Theoretical and practical significance**

Consumers are increasingly choosing the Internet for being the most interactive media and getting the opinions of many people using the same product. The Internet is becoming a more active tool, with the development of online communities, it provides significant benefits to consumers in the process of obtaining information. Moreover, while researching the requested information, detailed technical information can be accessed from the first degree by connecting directly to the website of the international business, if necessary.

In addition to the great advantages it offers to the consumer, especially security and privacy problems related to online shopping increase the perception of the consumer's risk, thus affecting the consumer's interest in online shopping. Another factor affecting consumer interest in online shopping is the features and terms of use of the shopping site used. Thus, according to [21] consumer behaviour consists of five dimensions. These are:

- Importance / Interest: The personal interest of the individual in a product category, the personal meaning or importance of the product,
- Hedonic value: The product's ability to provide pleasure and happiness,
- Symbolic value: The ability of the product to express the individual,
- Risk importance: Perceived importance of negative results of wrong product selection,
- Risk probability: It is the perceived probability of making a wrong choice.

With the spread of the internet, the importance of corporate websites is increasing day by day. A website that is suitable and usable for the corporate identity is the purpose of every institution. Businesses' ability to influence consumer purchasing behaviour through websites, depends on [3]:

- understanding how the website is perceived by users,
- determining the features of the website that will increase the perception of quality,



- and using this information while designing/renewing websites.

The main purpose in the creation of websites is to convey the content owned to the targeted audience in the most effective way. However, the most important factor to be considered in presenting the content to the user is that there is a user interface where the users can access the information in a short time and easily.

In general, users easily abandon websites with complex interfaces and prefer a different website with similar content, which negatively affects the usability of some websites [10]. In academic studies, various qualifications have been made taking into account the features that a quality website should have in various aspects. When these researches are studied, a classification based on the quality elements of the website is defined in Table 1.

Although there are various studies in the literature that deal with both website features and consumer interest from various angles, this topic remains up to date in line with the changing demands of consumers. It makes this research important. It is generally thought that examining the consumer behaviour in the online shopping dimension, as well as investigating the effect of the website features will make a great contribution to the literature. In this research, a general classification was made by making use of the previous classifications. First, security of the website (correct information, confidentiality, protection

**Table 1. The main quality elements of the website**

|                        |  |
|------------------------|--|
| Hasan and Abuelrub     | content, design, organisation and user friendliness  |
| Kim and Stoel          | appearance, entertainment, providing information, processing ability, trust  |
| Lin                    | system quality, information quality and service quality  |
| Su and Huang           | ease of use, usefulness, entertainment, complementary relationships, customer service                                    |
| Moustakis and others   | content, orientation, structure and design, appearance and originality   |
| Parasuraman and others | effectiveness, availability, fulfilment, confidentiality, responsiveness, compensation and communication                 |
| Robins and Holmes      | content quality, technical quality, design and usability   |
| Tan and Wei            | content, reliability, critical thinking, copyright, quote, continuity, censorship, connection, comparability and context |
| Kircova                | ease of use, aesthetic design, speed and safety  |

|   |   |
|---|---|
| Dikener   | aesthetics, ease of use, appearance, rich content and reputation                |
| <a href="https://worldbestwebsites.com/">https://worldbestwebsites.com/</a> | functionality, design, content, originality and professionalism / effectiveness |

of credit card and payment information, keeping promises, protection of personal information) and its effect on consumer behaviour were investigated.

Then, the approach of Azerbaijani consumers was examined by taking into consideration the design of the website (general appearance, attractiveness, colours, ease of listing, clarity of text, images and graphics, transition links to other sites, etc.). Finally, the effects of the comments of other users on the website on consumer confidence were examined.

**The thesis is an attempt to answer following research questions:**

- Is there a significant association between the age variables of the participants and the increase in online shopping?
- Is there a significant relationship between the marital status variables of the participants and the level of online purchases?
- Is there a significant relationship between participants' gender variables and online shopping rates?
- Is there a significant relationship between the variable educational levels of the participants and the level of online shopping?
- What are the website factors that have a major impact on the behavioural intentions of website users?

## **CHAPTER I. LITERATURE REVIEW: CONCEPTUAL FOUNDATIONS OF THE IMPACT OF WEB PAGE DESIGN ON CONSUMER BEHAVIOUR**

### **1.1. Design specification of websites**

Website design is the formalisation of content, the complex of all the graphic elements on a web page. Previously, web design was understood exclusively as visual design, but now user convenience has come to the fore, so analytics and competent structuring of information on the site have been added to the tasks of a web designer.

The main task of design is to introduce the page to the user. It facilitates the user's interaction with the web page, which means it has a positive effect on conversion and behavioural factors. Thoughtful design creates the desired impression about the company.

A site is a marketing tool and a representative office of a company on the Internet. A client who lands on the page should find the necessary information easily and quickly, otherwise he will simply refer to the competitors.

At first glance, everything is simple – design content and basic elements and blocks on the site. However, a lot depends on the type of site, the amount of content and tasks of the client. For example, a page for selling bicycles will be very different from a large online store with thousands of products, a personal account, a catalogue and other elements [19].

To create a good design, the site owner must definitely talk with the client. When starting to create layouts, the site owner should clearly understand what structure the site should have, what content will be posted and what the client wants to see as a result.

One of the ways to ensure the website is working is the competent work of a web designer. A specialist in this field should always clearly understand the essence of a future project. It is important to adhere to the given parameters, rely on clear project documentation or a guide to the style of web design.

The style guide will be especially useful when you are just starting to work out the future idea of the site – it will help you adhere to the general concept when creating separate pages and services. In addition, a single style of development will become a kind of guarantee for you in the future – further ideas, projects, as well as third-party production will be carried out according to a certain general design template of your brand, which will allow you to perceive everything as part of a common concept for your authorship.

Website design specification is unthinkable without a style guide! It is a set of pre-designed elements, graphics, and rules. The developer must ensure that the individual parts of the site are consistent with each other and ultimately create a favourable overall impression.

A style guide is of great importance to a designer who works on a single large website or web application. The manual will help to avoid too many interpretations, and will not allow you to change or adjust the style, starting from personal preferences and ideas about the final design of the project. In the process, after creating certain elements of the website, the developer will be able to easily reuse them.

To make life easier for a developer, he must connect a maximum of useful services, such as hover, clicks, visits, as well as other configurations for buttons, headers, links, etc.

The concept of the site is the first step in creating web design. At this stage, we determine what the site will be, how it will differ from competitors, and what its purpose is.

Beginners often skip this stage, but you need to clearly understand how the ideal site should look in the niche of the client, who is the target audience and what tasks the site faces. If you do not think about it, there is a risk that the site will be liked neither by clients nor by customers.

The website designs can be responsive and mobile. Responsive web design ensures that web pages display correctly on most devices. The user can view the page from the screen of a computer, tablet or phone, regardless of their resolution.

Responsive design has pros and cons, the main of which are slow page loading and the inability to switch to the full version of the site.

The mobile version is a separate version that completely or partially duplicates the information of the main version of the site, but is intended for viewing from mobile devices. It has a separate address, as a rule, this is an attachment to the main domain m. or mobile.

Most often, the mobile version includes those functions that smartphone users need. Thanks to this approach, mobile versions load quickly and do not cause negative emotions in the user. From the mobile version, you can go to the main version of the site.

To create a beautiful design that will appeal to all users is impossible. The site design should appeal to the target audience. As a rule, marketers select the target audience for a company.

## **1.2. Purchase motives**

The key objective of marketing activities is the formation of consumer purchasing decisions [7]. To do this, a positive image of the brand should be built and its recognition should be increased, as well as measures should be taken to promote sales and improve product characteristics. However, any actions are ineffective without knowing the needs of customers and their motives.

The advantage of using customers' functional needs in marketing is that they are fundamental and peculiar to every consumer. The downside is their versatility and repeatability, which impede differentiation, that is, the search for a unique advantage that allows them to stand out from competitors. Relying solely on functional (biological) needs will not allow you to build a long-term relationship with the customer and strengthen his/her loyalty.

Giving a sense of security and attractiveness, confidence and success, goods and services that satisfy the emotional needs of the buyer begin to associate with him/her and take a solid place in the list of attachments. This gives rise to preference for a particular brand or product (not Zanussi, but Samsung, not hamburgers, but low-calorie bread).

On the foundation of the same need, customers form different expectations that affect the emergence of motives. This statement can be illustrated by imagining that one person needs a sandwich to satisfy hunger, and the other will never agree to anything less than a healthy meal.

The next link from needs to motives are incentives that embody the desired benefits for the buyer. In order for a clear conscious motive to acquire a product or service to arise, an equally clear and attractive incentive is needed that can "catch" the buyer and convince him of the possibility of maximum satisfaction of the need.

After the need, expectation and incentive have developed in the mind of the buyer, the motive comes into play. Understanding its features among representatives of different target groups, the specialist builds a competent and effective product promotion strategy.

There are eight reasons for purchasing, eight problems and eight demands that make people buy a particular product or service [24].

1. **Comfort.** This motive is typical when buying comfortable clothes, shoes, furniture, an apartment, a home theatre, a fireplace, etc. The desire for comfort is characteristic to many people.

2. **Confidence in quality (reliability, safety).** The importance of this motive is manifested when buying, for example, steel doors, locks, communications, power supplies, computers, copy machines, children's toys, etc. The desire for confidence and security is very important to many buyers.

3. **Prestige is a very important motive.** Gold jewellery, recognized trademarks (watches, cars, clothes, shoes, etc.), country cottages, "executive class" cars, "smart" mobile phones, tourist trips, etc. Sometimes "prestige" is called the king of motives. These are goods for the

elite and people who are not indifferent to the opinions of others. People spend a lot of money, in accordance with this motive.

4. **Communication.** A bouquet of flowers and gifts, tickets to theatres and concert halls, expenses for restaurants and nightclubs, tourist trips and seminars - all this is influenced by the desire to communicate, find friends, lovers, etc.

5. **Curiosity.** A very characteristic motive when buying newspapers and magazines. The same motive is valid when buying tourist permits, movie tickets, videos. Sometimes it "works" when buying new types of beer, chocolate, cosmetics, etc.

6. **Benefit.** This is the main motive of the wholesale buyer. "Profitably bought - profitably sold." The same motive is characteristic when buying some banking services or securities.

7. **The authority of another buyer, or the authority of the manufacturer.** This is a characteristic of people who are insecure, preferring to rely on the point of view of more experienced colleagues, neighbours, relatives.

8. **Health.** It is clear that this motive is important for many visitors of pharmacies and clinics. The same motive can be important when buying clothes ("natural cotton") or shoes ("natural leather"). This motive is typical when buying spa holidays, services of gyms, etc.

### **1.3. Trust on the online store**

Trust is hard to describe because it is a combination of many things that together give consumers a sense of confidence and allow them to enter their credit card information or other payment information. Here are some of the key points that can build (or destroy) trust in an online store:

**Customer Service** – Does the company care about you as a consumer before and after the purchase? If you write a letter, do they respond quickly? If you are calling, can a product specialist answer your questions?

Eventually, moments arise in the customer service of each online store, in which the crucial role is played by the professionalism of the contact centre operator, which is necessary to ensure a positive consumer experience even when solving atypical and complex calls. Such appeals are often associated with the quality of the purchased goods, warranty conditions, delivery times, consumer properties of the purchase, etc.

A successful dialogue with the client, regardless of the purpose of contacting the contact centre, is the result of systematic work on the analysis and typing of topics of calls (each

dialogue is built in accordance with a well-defined algorithm). Each algorithm is aimed at achieving specific goals: customer loyalty, selling or pre-selling the company's products and services. In addition, the effectiveness of communications directly depends on the level of competence of the operator. Only thorough training of consultants on special training and development technologies gives an expanded arsenal of knowledge and skills for effective dialogue with each client in any situation.

Moreover, given that modern consumers value the positive experience of real interaction with the company obtained in solving complex and even problematic issues much more than the purchase process as such, it is the integrated approach to customer service that provides the best result.

**Security** – How good is password security on a site? Is the site the newest and best technology for protecting customer information?

The safety of customers of an online store – first, it is the security of personal data and payments of customers. You must immediately make a reservation that the range of solutions used in online stores is directly proportional to the size of the store itself. Typically, small and medium-sized stores themselves prefer not to work with customer payments, transferring this data to outsourcing. Or else they completely refuse to pay via the Internet; in this case, payment for delivery is made in cash to the store courier. At the same time, such stores do not have to bear responsibility for maintaining the confidential data of their customers.

**Return of goods** – Despite the fact that this aspect is important for ease of use, the category of trust / return of goods nevertheless refers more to the policy of the store. Does the store's policy allow the buyer to return defective goods simply and quickly, or, on the contrary, complicates this process?

According to the Law "On Protection of Consumer Rights", the website of an online store is obliged to provide the client with the following information:

- ✓ product name, description of its consumer properties and characteristics
- ✓ data on the manufacturer, service life, possible defects;
- ✓ appearance of the product - photographs;
- ✓ price, terms of delivery and payment, if any - discounts;
- ✓ term of conclusion of the contract;
- ✓ order and terms of return.

The site should also contain information about the seller: full name of the company, legal address, bank details.

**Confidentiality (privacy policy)** - Does the site try to sell information about you to third parties, or protect your information? Is the security policy transparent and easy to read and understand?

The online store's privacy policy is by nature a public contract. Digital commerce requires digital documents to work with users and potential buyers.

Adequate and secure administration of any site with registration, feedback or user support forms is not possible without public contracts in electronic form. The preparation and placement of such legal documents often raises many questions from entrepreneurs, owners and administrators of online stores.

The online store's privacy policy allows for a wider range of operations with the personal data of customers than in the case of a simple notification about the goals and methods of processing customer data with a mark of consent. For example, the privacy policy allows you to create the prerequisites for the sale of the collected customer database and at the same time minimise the possible legal consequences.

**Spam** – Does the site write letters to me constantly, or only if necessary. If the site has a newsletter, can I easily subscribe to it or unsubscribe from it?

Online stores are doing their best to get the user's email address, offering various discounts and bonuses for subscribing. In addition, here the long-awaited addresses replenish the subscriber base, but suddenly some customers start marking your letters as spam. Why users who once happily subscribed to the newsletter change their minds, and what needs to be done today to avoid this, we will explain in real examples.

We start with the main reasons why subscribers send newsletters about brands and online stores to spam. According to a Litmus research, the main reasons that users consider e-mailing lists as spam are:

1. There is no option for unsubscribing from the newsletter (50%).
2. The subscriber receives too many messages from the company (57%).
3. The consumer subscribed to the newsletter without knowing (51%).
4. The brand is not interesting to customer any more (53%).
5. The company's customer service has caused a negative impression (45%).
6. The design of the newsletter is not responsive (43%).

**Advertisements** – Do sites try to throw you with ads you are not interested in trying to make money, instead of helping you find the items you are looking for?



Advertising on the Internet is no longer a trend, although some entrepreneurs continue to perceive it in this form. Now this is a necessity. Advertising can be effectively used for not only selling goods and getting customers for services; it is also an excellent channel for disseminating information about your brand and increasing its recognition.

The main advantage of advertising on the Internet is the ability to quickly deliver information about a product or service to a target audience without geographical boundaries. In addition, the ability to clearly orientate oneself in advertising and measure results can optimise marketing budgets and build an optimal sales process.

Therefore, your advertisements should have a certain target audience and you should avoid advertisements that can irritate your customers.

***Terms of delivery of goods*** – How quickly do your goods reach you? Do you get exactly what you ordered, and just when you were told that you would receive it?

Each online store itself chooses the methods of delivery of goods convenient for it, since there is no single option for everyone. The first thing the buyer pays attention to is whether the goods are delivered to his/her city or not.

To understand how a page with a description of delivery to different regions should be properly framed, it is necessary to highlight several main problems.

Firstly, it is very important not to overwhelm the information on the page on the terms and conditions of delivery, in which the visitor can very easily get lost and, as a result, refuse to buy.

The section with the terms of delivery should be clearly visible on the site and clearly named - “Delivery”, “Delivery and payment” or “Delivery and pick-up”, etc. It is required to focus on a step-by-step description of the delivery process. For instance:

1. After registration on the website of the online store, the order is sent to the courier service the next day.
2. The courier service agrees with the customer on the delivery period and time using SMS messages or a phone call.
3. On the day of delivery, a repeated notification is made with the name and phone of the courier.
4. The courier contacts the customer to determine the delivery time.

Secondly, it is necessary to display which courier services the online store is working with (name, contact details, link to the company’s website for tracking on-line orders).

It is necessary to allocate delivery in different directions (delivery in Moscow, London, delivery to other cities).

Thirdly, to link possible payment methods to deliveries in different directions. Information about payment should not be posted on a separate page, as these two processes are closely interrelated, and information about them is well understood together.

Another useful tool in the design of the delivery page is a user geo-targeting information. The system determines the country or city from which it enters the site by the visitor's IP address. Based on this, certain information is offered – delivery times and cost, phone number in the region, automatic affixing of the city when placing an order.

**Tricks** – Are there any tricks on the site, for example, an obsessive offer of goods (Do you want to buy a set of filters for this camera?), Or something similar that makes you feel uncomfortable?

Each client wants to have access to unique content designed for him/her. Here you can distinguish several approaches to the formation of proposals:

- ✓ similar additional products based on customer preferences;
- ✓ geographic preferences;
- ✓ market trends, the most sought after goods;
- ✓ demographic nuances;
- ✓ user preferences based on past purchases;
- ✓ shopping habits, etc.

Thus, if we carefully listen and study our client, engage in interaction, taking into account the personal approach to each consumer, then we can optimise our communication by offering the right product with the right segmentation by customer type and when creating, for example, thematic email newsletters in the right way and at the right time. That is called predictive analysis in action.

Since distrust is one of the main obstacles to a long and mutually beneficial cooperation between a buyer and an online store, this threshold can and should be lowered. It is important there:

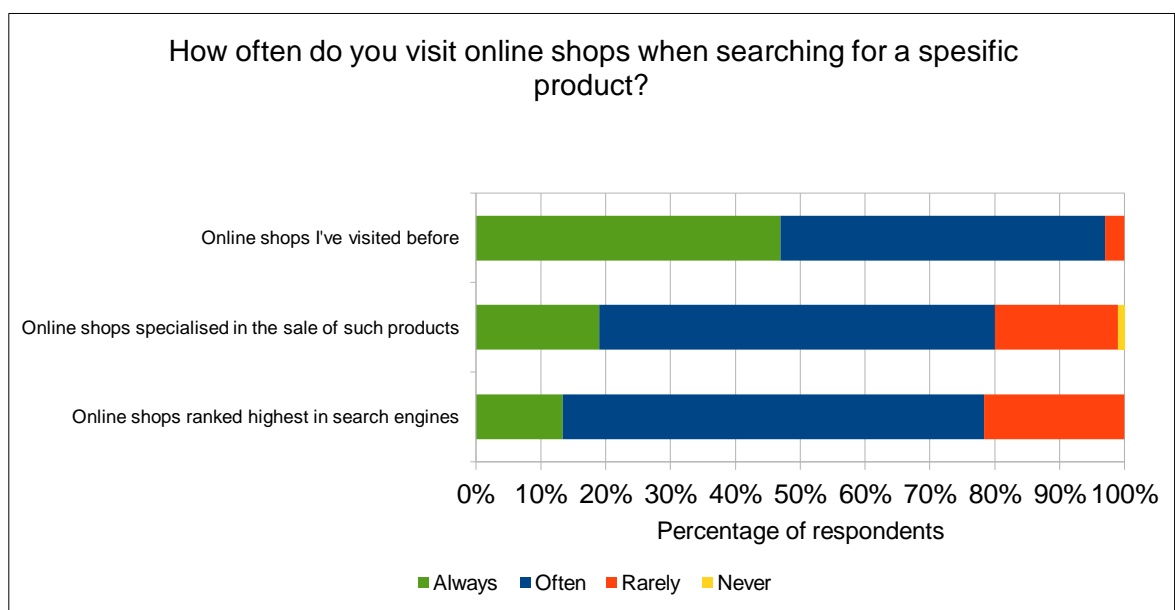
- ✓ To provide more information about the company and products with pictures, reviews and comments, a detailed description of the products and characteristics.
- ✓ Regularly update the information on the site.
- ✓ Participate in pre-qualification database aggregators that compile data for millions of products.

Gamification is a very attractive technique that has become popular thanks to mobile gadgets and online games. A good example of the use of game mechanics is the L’Oreal Paris case, in which the brand developed five diagnostic tools in the following areas: skin care, face and eye cosmetics, hair protection, and hair colouring. The mechanics allows smartphone users to select various shadows for make-up, scan hair colour, etc. The company not only allows customers to play, but also collects a massive amount of data during each session, allowing you to further personalise your offers and discount programs [25].

In 2016, Canadian Stokes retailer prepared in advance for seasonal sales and launched a pre-sales campaign in late October, inviting users to create a wish list that they could win. Therefore, the seller collected the best ideas on demand and was able to significantly increase sales during Cyber November.

Amazon e-commerce reference company launched a countdown to Black Friday on November 1, 2016, offering attractive promotions with a time limit on the number of promotional items and specific groups (for example, special offers to Prime subscribers) (<https://www.shopolog.ru>).

At the end of August 2019, Trusted Shops, together with Statista, conducted a survey of 1,000 British consumers to better understand their online shopping habits. The questionnaire focused mainly on the topic of unfamiliar online stores, on how they are detected and how they can gain the trust of these new customers (Chart 1).



**Chart 1. Survey: How often do you visit online shops when searching for a specific product?**

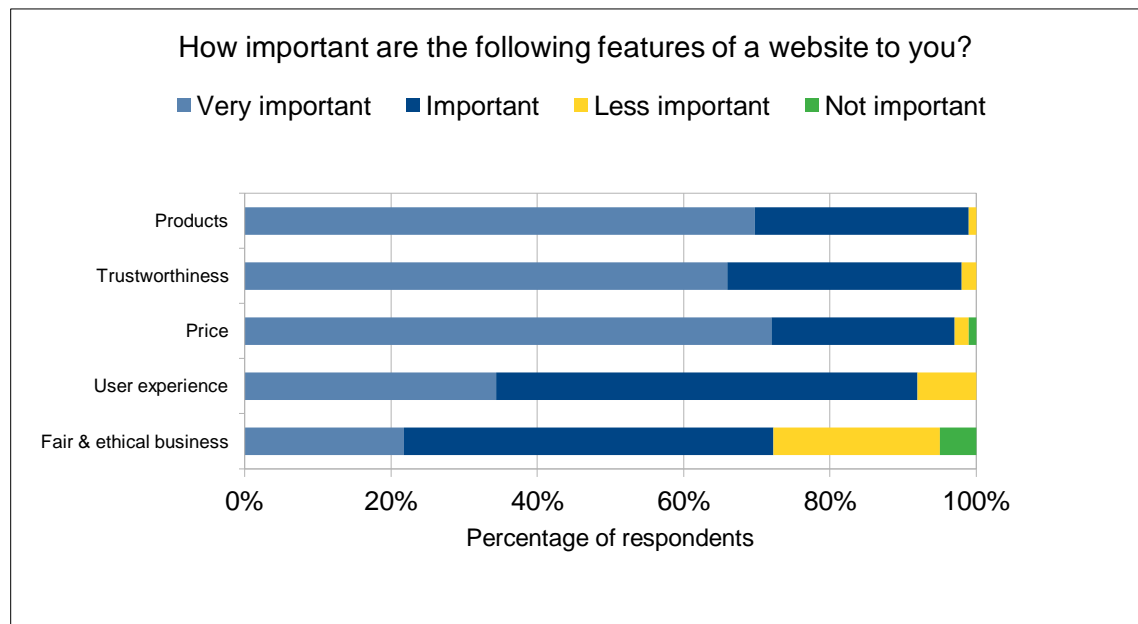
When consumers were asked which elements of the online store inspire confidence, the first three answers included a tight race: reliable customer service (72%), data security (71%) and customer reviews (70%).

In addition, for all three categories, the influence was stronger for women than for men:

Reliable customer service: 76% vs 69%

Data Security: 74% vs 69%

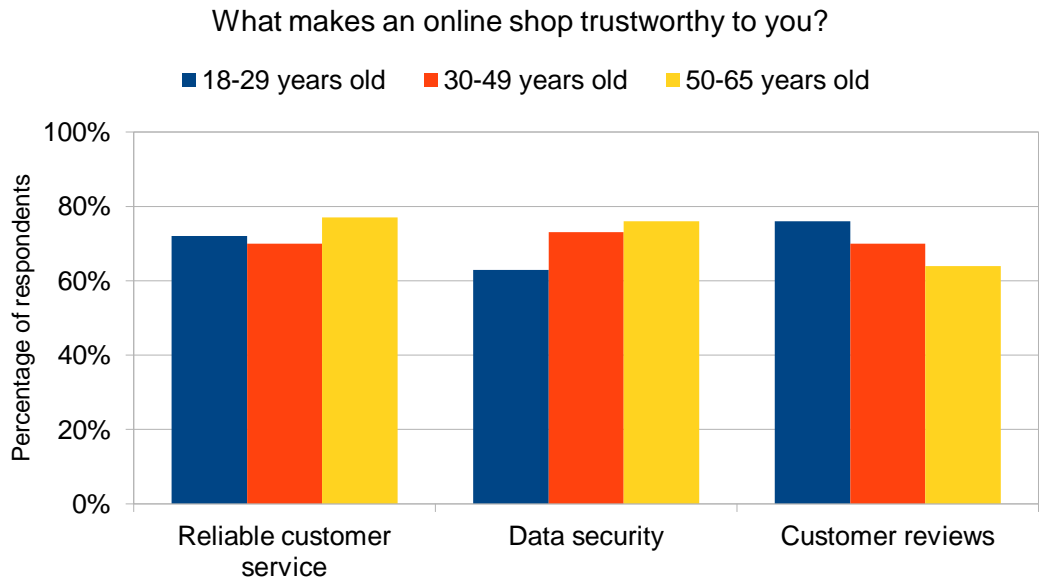
Customer reviews: 74% vs 65% (Chart 2).



**Chart 2. Survey: What makes an online shop trustworthy to you?**

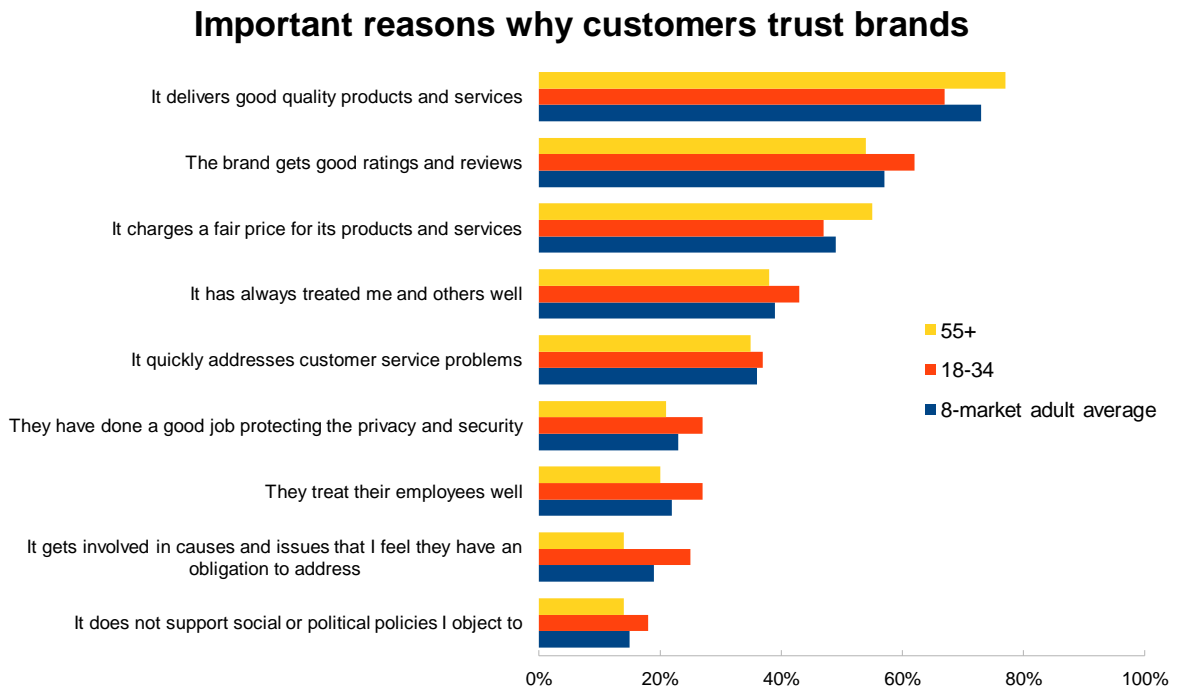
As you can see from the chart, 97% of respondents answered “always” (47%) and “often” (50%) for online shop visits.

They also asked the survey participants the question “What features of an online shop are generally most important to you?” The answers are below (Chart 3).



**Chart 3. Survey: How important are the following features of an online shop to you?**

It was also noted in some research that the majority of consumers trust brands while doing online shopping. Internet marketing site [www.marketingcharts.com](http://www.marketingcharts.com) conducted an online survey of 16,000 adults from Brazil, China, France, Germany, India, Japan, the UK and the



US. The survey was conducted and published in July, 2019 (Chart 4).

**Chart 4. Survey: Important Reasons Why Consumers Trust Brands**

#### **1.4. The concept of flow**

A site is like a book that contains information about one or more topics, while a site page is a page of a book that focuses on a specific topic.

While proceeding with the development of a page of a site, or a site as a whole, it is necessary using web development tools and technologies known as Web Design. Website development is an art that also includes science capable of attracting interested public to your website.

In general terms, web design is the art of making presentations in the form of a web page or website, which is displayed on a computer screen, or by any other means of information access to the Internet. Website development is the organisation and development of content (text, images, graphics, animation, audio, video or any other multimedia tools), which in turn affects all users, from the first to the last (computer user). The site consists of two plans – front and back. The term front end is displayed on the computer screen as visible content, such as page layout, colour scheme, user interface, graphics, text, audio, and video.

"Back-end" means the interweaving of source code, invisible scripting functions and server-side components.

A web developer develops a site using technologies such as designing Markup languages, Styles, Client scripts, scripts on the Server side, Databases, Multimedia technologies and many others – developing an attractive and convenient website, through work on components – front-end and back-end.

The site consists of many pages that present information on any topic, and interconnected hyperlinks, which is an integral part of the site.

Applied technologies in web development are:

- 1) Markup Languages: Standardised Markup Language (SGML) - used to describe the logical structure of a computer document; Hypertext Markup Language (HTML) - used to structure text and multimedia documents and create hypertext links between documents, widely used on the World Wide Web, XML – a meta-language written in SGML, used to define these elements on the Web -page and "business-to-business documents in the World Wide Web, EXtensibleHyperText Markup Language (XHTML) - Web page markup language includes combines HTML and XML data in a single format.
- 2) Stylesheet Languages: A computer language used to describe the presentation of structured documents. One of the most popular and modern styles of languages CSS - used for

the design of documents written in HTML, XHTML, SVG and XUL and other markup languages.

3) Scenarios: On the Client Side: A class of web-based computer programs that run on the client side in the user's web browser. This includes JavaScript – A popular scripting language that adds interactive features to allow HTML pages to turn out to be dynamic web pages and Visual Basic Script (VBScript) - Microsoft's scripting language is widely used on the Web for both the client and the data processing in the Web page and server-side data processing in Active Server Pages (ASP).

4) Scripts On the Server Side: Web server technology used to create dynamic web pages by running a script directly on the web server. PHP – Scripting language used to create dynamic Web pages on the server, embedded in HTML with syntax from C, Java and Perl; Active Server Pages (ASP) - On the server side, the script engine from Microsoft, which is used to generate dynamic web pages, are some of the popular Scripts on the Server side.

5) Database Technologies: Technologies used to store and manage a database of web applications such as MySQL and Microsoft SQL Server.

An excellent website design is important for attracting surf lovers and visitors in that it allows you to learn more and easier to find everything you need on your site. But for this it is necessary to observe the following rules:

✓ The site should have a good balance in terms of text, images and links. The content and information on the site should be relevant and purposeful.

✓ The site should be designed in a very user-friendly form, which helps everyone to easily use the site. Navigation should be simple and reliable.

✓ The appearance of the site should be very attractive, graphics and text should be made in a single style that permeates the entire site. The style of the site should be professional, attractive and relevant.

✓ The site should include rich content and keywords, which will make it easy to find the site through all the major search engines and advertising in the media.

### **1.5. Usability testing**

Usability testing is testing the usability of the product interface by end users. Usability testing shows how the product meets the expectations of users, identifies problem areas in the interface, and makes it possible to look at the product through the eyes of users. In the process

of usability testing, the user performs typical tasks with the product in the presence of leading testing.

Usability testing helps to increase the conversion of a site or an online store, find hidden intentions and user wishes, and make a decision on the development of additional functionality. This is not the only method of researching the site. Make a decision on the choice of method, based on the tasks. If you need to find flaws in the interface or check the convenience of user scripts, test the usability of the site. When you need to compare the conversion of two landing options, it's best to do an A / B test.

Usability testing can be carried out at different stages of product development. However, we recommend that you begin to conduct it already at the initial stages of interface development, even before they are implemented in program code. This will allow you to immediately make the necessary adjustments and make the interface convenient. The sooner you make changes to the interface, the easier, faster, and therefore cheaper it will be.

The goals of testing for each company are different: someone is testing a prototype or concept, someone is testing hypotheses, someone is exploring user scenarios, so the methods and metrics are different. But the rules of the conduct, the stages of preparation and the set of accompanying documentation are similar.

**Goals and objectives.** Set the main goal of testing, which will determine the further direction: tasks, assignments, methods and choice of respondents. Based on the goal, formulate the problem or task. This can be a check of a developed product or a search for defects after a redesign. For example, the company changed the design of the order form, after which the conversion decreased. Through testing, researchers will understand why this happened and what to do.

**Hypothesis.** Make a hypothesis that the study will confirm or deny. For example, when booking a hotel, users book a transfer from the airport by a separate message, without using a special order form. In this case, the hypothesis may be as follows: "users do not understand that this is a form for ordering a transfer, or consider it cumbersome to fill out."

**Scenarios.** Test user behaviour scenarios separately - how people interact with the site. Each page has its own script. To compile it, answer four questions:

- 1) Where did the user come from?
- 2) What should he/she see on this page?
- 3) What is the purpose of his/her visit to the page?
- 4) How should his/her visit end?



The user script does not have to be long and complicated. Sometimes the shorter the interaction, the better the conversion. For example, for the business of delivering cartridges, chargers, lenses, speed is important, so it is advisable that the user immediately understand that the delivery service is right for him/her.

When different groups of visitors come to the site, develop your own behaviour scenarios for each group. Suppose a site selling goods wholesale and retail has three groups of customers: large wholesalers, small wholesalers and retail customers. Create separate sections for each group and make scenarios based on answers to typical questions.

Quantitative research is always specific and focused, aimed at obtaining numerical indicators. This may be the time taken to complete the actions on the site. This can also be the percentage of respondents who completed the task. Yes / No results can also be represented as numbers. For example, bring them to the binary system: yes – 1 point, no – 0 points.

Often in testing, the Jacob Nielsen method is used, which translates the results into a percentage and considers the percentage of success. It is recommended simplifying the rating scale and operating with three options:

- Completed independently – 100%;
- Performed using a moderator – 50%;
- Not performed – 0%.

To determine how often users' encounter problems, calculate their frequency. To do this, count the number of respondents who could not complete the task due to the same problem. Give the test participants the same tasks, then the frequency indicator will be reliable.

Qualitative research is chosen to get a lot of different comments, to understand the thinking of users, to find hidden problems. Testing is based on open and flexible questions. To do this, an interview is conducted that shows the degree of satisfaction of the respondents. There are many methods and questionnaires for conducting quality research.

The Kano model, which was developed by a Japanese scientist, can be an example. With its help, find out not only satisfaction with the current version of the site, but also user expectations. All respondents' answers are translated into points and ranked on a scale of expectations from "I like" and "I expect this" to "I don't like and I can't accept it." As a result, the researchers build a graph that shows what exactly the audience believes:

- for granted;
- competitive advantage of the site;
- features that delight them;

- unimportant.

Based on the results of qualitative research, it is necessary to correctly interpret the results. Perhaps the respondents will give many interesting suggestions, but evaluate them in terms of technical implementation and the costs of their development. In any case, try to understand what kind of need their proposal closes. This is to find a way to improve the usability of the site, suitable for your company.

### **Methods:**

**Observation** is the simplest method: the respondent works as usual, the moderator watches and analyses his actions. At the end, the respondent fills out a questionnaire and shares his/her impressions of the site. The method is good in that the user interacts with the site naturally, environmental circumstances do not press on him/her.

However, there is a drawback: the respondent fills out the questionnaire after testing is completed, therefore, he/she may not remember exactly why he/she did it anyway. Then this will lead to a misinterpretation of the respondent's actions.

**Thinking out loud.** This popular method was proposed by Jacob Nielsen. Its essence lies in the fact that the user speaks all his actions out loud. However, with such behaviour, respondents begin to take a more thoughtful approach to completing tasks and some of the naturalness is lost.

**Dialogue with the moderator.** The method is most suitable for conducting qualitative research of prototypes and concepts. During testing, respondents actively communicate with the moderator, ask him questions and immediately give feedback.

**Shadow method.** Three participants work at the same time: respondent, moderator and expert. The respondent freely and independently performs tasks, the moderator fixes, the expert comments on the respondent's actions.

**Retrospective.** This is a method that combines observation and "thinking out loud." First, the respondent performs tasks, then – watches a video of his actions and comments on them. The main disadvantage is a significant increase in testing time.

### **What to prepare for the testing?**

**Make a list of tasks.** It depends on the tasks. Think about what data you want to receive after they are completed, what type of research: quantitative or qualitative – will be conducted. Prepare detailed instructions for their implementation, check that the text is understandable and interpreted unambiguously.

***Focused tasks*** are always simple and accurate. The moderator says what needs to be done, the respondents are doing. For example, fill out the feedback form. For such tasks, mechanical execution is characteristic. Respondents are not involved in the process. If they need to choose a product or service, they often stop at the first option that suits the requirements, although they act differently in real life.

***Tasks with context are*** built around a fictional story. They can be formulated as follows: “Imagine that your neighbour is selling a great car at a low price, because he urgently needs money. Pick up a car loan for yourself to buy it.” Try to make the respondent really “try on” the situation and act as close as possible to his usual behaviour.

***Tasks based on experience*** are based on the fact that users have already interacted with the site or product. Therefore, select respondents from among users of the site or customers of competing companies. When recruiting, check if users have performed actions similar to the tasks assigned. If the respondent has never placed an ad in a commodity aggregator, then the researcher will not receive an insight, which is currently not enough on the site.

***Tasks without specifics*** give room for respondents. Their goal is to see how the user’s interaction with the site begins. Give respondents free choice; do not answer their questions, so as not to violate the naturalness of the reactions. Best if the respondent is alone. Such tasks are suitable for new products and content sites. The moderator sees that he is attracting attention, how they use navigation, whether they read orientation materials or instructions.

***Pick up respondents.*** Determine the target audience of the site and make a portrait of a typical visitor to select the most relevant participants. Establish requirements in advance on eight factors: knowledge of the product or topic, level of computer skills, gender, age, language, education, geography, and cultural characteristics. Look at the specifics of the project: if the site is intended for legal entities, do not invite gardeners into the focus group. If the resource works for ordinary consumers, exclude marketing, advertising, and design experts from the test participants.

***Determine the number of respondents to participate.*** We recommend inviting 5 people for qualitative research, 20 for quantitative research, and 40 for eye-tracking. The more respondents participate in the study, the more accurate the results will be. If you need a large number of participants, break them into small groups - up to 10 people and conduct testing in several rounds.

An increase in the number of people will lead to a decrease in the spread of results. Typically, 85% of the problems are detected by the first five respondents. Therefore, to optimise the cost of testing, alternate tests and improvements. Test first, and then refine the product based on the problems found. Test again and refine.

Three approaches will be enough.

### **How to conduct testing?**

***Personal contact.*** Let the moderator establish a friendly contact with the respondents. Tell us about testing and its goals, pay attention to the participant that his answers will help the company to make the product better. Conduct a brief briefing in which explain the essence of the tasks, voice the test schedule.

***Documentation.*** Sign the necessary documents with the respondent: an agreement on the processing of personal data and an agreement on non-disclosure of test results, if necessary. When children participate in testing, sign a consent agreement with the parents to participate in the study.

***Trial testing*** is necessary when the product is complex or tasks can cause difficulties for the respondents. Therefore, they get to know the site and understand the requirements. When a large-scale and long study is ahead, do trial testing before the main. Therefore, you will find flaws in the preparation and eliminate them.

***Test Report.*** As a result, a summary report is prepared with the results. It begins with an introduction that outlines goals, objectives, and testable hypotheses. In the report, indicate the methods used and the measured metrics. All obtained results and conclusions should be interpreted, recommendations are given in the conclusion. As applications, add the results of each respondent.

## **1.6. Content design**

Content design is the creation of certain formats of site content, such as illustrations, collages, infographics, presentations, electronic brochures, etc.

Content is the king of the internet. Thanks to the content, sites receive more than 50% of all visits. At the same time, visitors attracted by content are free visitors, many of whom become buyers. No wonder content marketing today is considered one of the most powerful tools for promoting the network.

Content is the content of the site, the information that is posted on the pages of the site, that is, text and images. Text articles can have a different origin and purpose. The following main types of site content exist:

**Copyright** – these are copyright articles that do not have complete analogues on the Internet in terms of meaning, style and structure. In terms of quality, they distinguish between regular copyright and SEO-copyright.

Regular copyright is a useful, up-to-date article written for visitors. For example, some interesting news or analytics. Articles that are published in newspapers and magazines are regular copyright.

SEO copyright is a unique article written for search engines. They do not carry any useful semantic load, and as a rule, they describe some kind of banality. Their purpose is to be in the index of search engines and contain a SEO link, which is placed for money to promote another site, by wrapping the link.

Search engines cannot analyse the meaning of articles, so both types of copyright are the same for them. Search engines determine the usefulness of an article for visitors by the site of its placement (trust websites almost never use SEO copyright) and by the number of natural links to this article.

The usual good copyright is expensive and is used to fill SDL (sites for people).

SEO copyright is inexpensive and is used to fill satellites and paid blogging.

**Note:** SEO copyright can also mean a custom article with a customer-specified number of occurrences of key phrases and words. In this case, the article can be either meaningless or with a useful semantic load – depending on the agreement of the copywriter with the customer.

**Rewrite** is a redone article taken from another site. If you change the paragraphs in the article, rearrange the words, replace part of the words with synonyms, change the endings of the words and do some more manipulations of this kind, the search engines will perceive it as unique.

Sometimes it can be difficult to draw a clear line between SEO copyright and rewriting. It is believed that if you rewrite someone else's article and add some of your thoughts to it, it will already be SEO copyright, not rewriting.

Rewriting is usually cheaper than SEO-copyright and is used to fill satellites, as well as dilution content for SDLs.

**Copy paste** is articles copied from other sites. That is, this is not unique content. In small quantities, it can be used as dilution content for SDL or for satellites.

The main thing is to observe the proportions of the ratio of unique and non-unique content that are known only to developers of search engine algorithms. If the search engine considers that there is non-unique content on the site, then it will apply certain sanctions.

The advantages of copy-paste include the fact that it is free.

**Synonymize** – these are articles obtained by reproduction in a special program – synonymizer. Synonymized content is essentially the same rewrite, only repeatedly performed.

Depending on the quality of execution, articles can turn out to be both meaningful and meaningless, both unique and not unique. Such content is commonly used to fill satellites.

It is worth synonymizing cheaper than rewriting, but with its use you can play out. If the search engine recognizes synonymization, which they have been doing quite successfully lately, then the attitude to such content will be worse than to copy-paste.

**Scan.** A scan is some kind of scanned book. Now it is difficult to find a unique scan, since most books have already been scanned and their contents are posted on the Internet.

The scan is normally suitable for filling satellites.

**Translation.** Articles translated from other languages. The scope of this type of content can be any, depending on the quality of the translation.

Automatic translation from languages of a similar language group (for example, Russian -> Ukrainian and vice versa) give a good result.

Such content is quite suitable for filling satellites, but sometimes search engines recognize it and filter pages received by machine translation.

After manual refinement, it can be used to fill SDL. You can also use high-quality manual translation to fill the SDL.

In order for the site page to be displayed in the search results, it must be indexed by the search engine. In order for the page to remain constant in the index, its content must be unique from the point of view of search engines. That is, not copied from the pages of other indexed sites.

Non-unique pages, especially when there are a lot of them on the site, are very likely to drop out of the index very quickly, or they will never get there at all and, accordingly, will not bring you any traffic from search engines.

If the amount of non-unique content on a site reaches a certain limit (differently for each search engine), then sanctions are possible for the site as a whole. In this case, the site can be

banned and fly out of the index completely, even despite a certain amount of unique content in its content. Therefore, copying information from other people's sites should not be used.

In a small amount, non-unique pages can be constantly indexed, especially on trust sites, but you should not seriously count on this when creating a new project.

Therefore, many webmasters now use rewrite to fill their sites – that is, modified text taken from another site. If you change the text strongly enough (replace some words with synonyms, swap paragraphs, sentences, words in sentences, endings with words), then search engines swallow it, but the methods of checking for uniqueness are constantly being improved. To rewrite over time is becoming more difficult.

The most ideal option is of course to use your own copyrighted articles (copyright) or custom ones as content. Nevertheless, here it is not so simple. If someone copies your content before it is indexed by search engines, and it gets into the index already on another site, then it is unlikely to prove the rights to it. For search engines, it will be non-unique.

Therefore, you should not particularly advertise a young site with unique content earlier than it will be in the index of search engines. Especially in this regard, Yandex is insidious, which for a long time may not index a new site.

There are many services and programs for checking content for uniqueness. It is also quite simple to check the text for uniqueness by simply copying a sufficiently large phrase from the site and entering it into the Yandex search form. In this case, the query must be entered in quotation marks so that the system searches only for complete matches of the text.

Check periodically the content of your site for uniqueness and, if you find duplicates on the Internet, write to the owners of the respective sites' letters asking them to delete the copy-paste or put links to the source.

By default, Yandex and Google consider the site that first hit the index to be the primary source. In addition, if the content from your site is copied to a site with significantly more serious indicators TIC (for Yandex) and Pr (for Google), then this site can be identified as the source, with all the ensuing consequences. Based on this, you should take care of the TIC and Pr indicators for more reliable site positions.

The page content should be saturated with keywords in accordance with the target request, under which the page code is optimised. Phrases containing keywords should preferably be placed closer to the top of the page.

Previously, the density of keywords on a page played a significant impact on its position in the search results for relevant queries. Now this influence is much weaker. You should not

create clumsy texts in pursuit of a high density of keywords, search engines are unlikely to appreciate it anyway, rather, on the contrary, they will consider it spam and react negatively. It's enough that the keywords in the content of the page are simply, well, preferably higher to the top of the page. The optimal density of keywords in the text on the page is considered equal to 3 – 5%. Exceeding this indicator is not recommended. The optimal amount of text per page is approximately 2000 to 4000 characters. Search engines do not like pages with the text that are not very informative or too large in volume.

The site design is also of great importance for the promotion of the site, although this is not so obvious at first glance.

Good design is one of the important factors that allow you to create a permanent audience of the site. A site with a tasteless design may not be accepted, for example, into a trust catalogue or simply not put a link to a more or less serious resource just because of poor design. Even if the content on the site is unique and interesting. Therefore, design should also be taken seriously if you want to simplify your task of website promotion.

### 1.7. Colour in web design

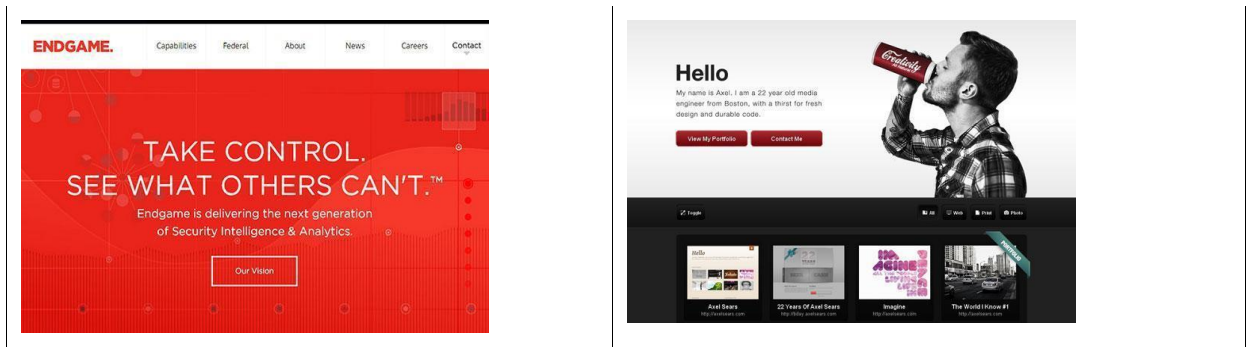
Colour is one of the most important elements of web design, which will help to attract the attention of users. Choosing the right colour is a little trick, honest manipulation, which will help keep the user on your site and even be able to direct him to some actions. We have compiled a list of the most popular and necessary colours for web design, determined their correct combination, positive and negative sides with real examples.

**Red** is a strong, dynamic and hottest colour that is often used in stocks. Choose red to emphasise your web design. It is combined with white, grey, light blue or silver colours.

**Table 2. Red colour usage in website**

| Pros:  | Cons:  |
|--|--|
| <ul style="list-style-type: none"> <li>✓ creates a sense of urgency</li> <li>✓ associated with love</li> <li>✓ may cause a feeling of excitement or encouragement</li> </ul> | <ul style="list-style-type: none"> <li>✓ do not forget that this colour bears in itself an association with the word “stop”, “danger”</li> <li>✓ its excess may discourage the desire to stay on your site.</li> </ul> |
| <b>Not recommended!</b>  | <b>Recommended!</b>  |





## Blue / cyan

In psychology, blue is considered the colour of purposeful and self-confident people. Moreover, your visitors the right shade of blue can bring a pleasant calm. The dark blue colour is considered to be business, professional and authoritative – it is not for nothing that businessmen love it so much.

**Table 3. Blue colour usage in website**



|   |   |
|---|---|
| Pros:   | Cons:   |
| <ul style="list-style-type: none"> <li>✓ it is a soothing colour</li> <li>✓ promotes physical relaxation</li> <li>✓ creates an atmosphere of security and trust</li> <li>✓ blue is considered the colour of creativity</li> </ul> | <ul style="list-style-type: none"> <li>✓ is cold, which distracts attention from him, in contrast to the warm reds and yellows that instantly attract everyone's eyes.</li> </ul> |
| <b>Not Recommended!</b>   | <b>Recommended!</b>   |
|   |   |

## Green

This is the colour of harmony and an inner sense of happiness. By the way, the popularity of colour is not limited only to its use in modelling clothes for catwalks and campaigns at

fashion parties; designers boldly use it to design websites. It goes well with white, light green, brown, orange, black and grey tones.

**Table 4. Green colour usage in website**

|   |   |
|---|---|
| Pros:   | Cons:   |
| <ul style="list-style-type: none"> <li>✓ Refreshes and relaxes, leaving people with a sense of inspiration</li> <li>✓ represents balance and harmony in design, as in nature</li> </ul> | <ul style="list-style-type: none"> <li>✓ Kandinsky rightly notes: “Absolute green is the calmest colour of the existing ones. He does not move anywhere and does not have the sound of joy, sadness, or passion. He does not demand anything, does not call anywhere. It’s a motionless, smug, space-limited element”.</li> </ul> |
| <b>Not Recommended!</b>   | <b>Recommended!</b>   |
|   |    |

## Violet

Violet is used in beautiful and trendy bedding models because violet soothes more than any other colour. It is considered more feminine and romantic than male colour. Just like red, people find the violet colour too strong and bright, it makes them feel compelled to do something.

**Table 5. Violet colour usage in website**

|  |   |
|--|---|
| Pros:  | Cons:   |
| <ul style="list-style-type: none"> <li>✓ most often associated with concepts such as imagination, creativity, dignity, nobility</li> <li>✓ bright shades of purple are mostly associated with spring and romance, while its darker tones are associated with luxury and wealth.</li> </ul> | <ul style="list-style-type: none"> <li>✓ when looking at things, pictures and objects of purple colour, it seems clearly artificial, this is because this colour is very rare in nature.</li> </ul> |

**Not Recommended!**



**Recommended!**



**Orange**

Filled with energy, this bright colour invokes, rather than forces, people to act. Orange is only sometimes perceived as intense – it calls for actions such as buy, subscribe, sell. It is recommended to use the orange colour if after visiting your site you want to leave the guest with a sense of motivation, joy and enthusiasm. It is combined with blue, cyan, lilac and violet.

**Table 6. Orange colour usage in website**

|  |  |
|--|--|
| <p>Pros:</p>   | <p>Cons:</p>   |
| <ul style="list-style-type: none"> <li>✓ the brightest shades of orange are associated with sociability, fun, energy</li> <li>✓ speed, precise rhythm, fiery emotions</li> <li>✓ excellent antidepressant</li> </ul> | <ul style="list-style-type: none"> <li>✓ warning signal</li> <li>✓ deliberate</li> </ul> |
| <p><b>Not Recommended!</b></p>   | <p><b>Recommended!</b></p>   |
|  |  |

Of course, the colours should be in harmony with each other and consistent with the structure and content of the site. The colour scheme is its atmosphere, it should be safe: not intrusive, moderately bright.

Please kindly note that if you work for an international audience, the perception of colour may vary from country to country. Here is a note of the meaning of the colours in different parts of the world:

### **Red**

- China: luck, triumph
- India: cleanliness
- South Africa: Mourning Colour
- East: joy (combined with white)
- West: arousal, love, passion
- USA: Christmas (with green), Valentine's Day (with white)
- Japan: life

### **Blue**

- Europe: reassurance
- Iran: mourning, the colour of the sky and spirituality
- China: Immortality
- Middle East: protection
- In The World: colour security
- West: sadness, depression

### **Orange**

- Europe: autumn, harvest, creativity
- USA: Halloween (with black), cheap items

### **Green**

- Japan: life
- Europe / USA: spring, new birth, St. Patrick's Day, Christmas (with red)
- USA: money

### **Violet**

- Thailand: Mourning (Widows)

## **CHAPTER II. ANALYSIS OF CONSUMER BEHAVIOUR IN ONLINE SHOPPING AND THE EFFECTIVENESS OF WEBSITE DESIGN FOR THEIR SATISFACTION**

### **2.1 The methodology Applied to Conduct the Research**

#### **2.1.1 Context**

The study analysed the value that consumers place on website design when shopping online and how website design affects purchasing power. We performed preliminary research on related literature before formally starting this study,. Results were used as the basis for the implementation of this study. We then asked subjects participating in the survey to answer the questions in the questionnaire about their perceptions of the characteristics of the website they used and their behavioural intentions.

#### **2.1.2 Data collection procedure**

The survey method, one of the quantitative research methods, was used as a research method. Respondents were randomly selected from the districts and the city of Baku. 8 main hypotheses were put forward in the research work and based on these hypotheses, a research model was selected and analysed

### **2.2. Surveys**

Marketing research is the process of searching, collecting, processing a certain kind of primary data and preparing information for making operational and strategic decisions in the company's commercial activities.

When conducting marketing research on the Internet, significant differences from traditional research have data sources and information collection methods.

Surveys (Internet surveys) are a popular and widely used method of researching the opinions of large groups of people, this is essentially a questionnaire. In this case, the questionnaire is a set of special questions that survey participants must answer, i.e. persons involved as respondents. Due to the fact that this tool is very flexible and versatile, it is the most common means of collecting primary data for further analysis.

In general, a web survey consists of the following components:

- heading;
- a brief description (purpose, objectives, etc.);
- questions;

- possible answers to each question;
- final text.

In addition, the shape of the survey image is determined on the web page or in the email.

The functional part of the survey is a combination of questions and possible answers to them with the accumulation of statistics in accordance with specific answers of the respondents. Answers can be selected from a limited list or recorded in free form. In web-based polling systems, the state of polling readiness for use is tracked. Web survey preparation tools allow you to create new questions, duplicate them, delete and edit the selected question, and also edit possible answers. It is also possible to change the sequence in which questions are displayed in a web survey.

The choice of the duplication object is carried out in two stages (determination of the initial web-based survey and the selection of a specific question from it).

We will consider the possible types of answers and their presentation.

The online survey form defines both the appearance of each survey and its responses, as well as possible response options:

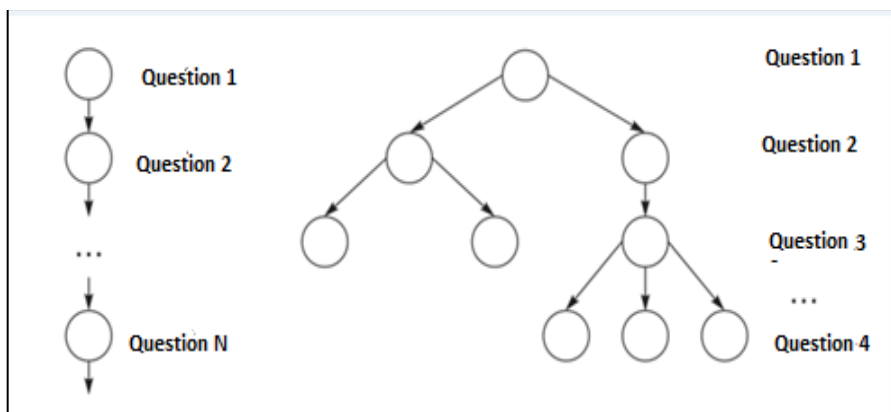
1. The choice of one answer from the proposed list of possibilities.
2. The choice of several answer options from the proposed fixed list of answers.
3. Writing an answer in the form of free text. The text can be limited in length or arbitrary text of any length is allowed.
4. The choice of one of two possible answers - "Yes" or "No". This type can be considered as a special case of choosing one answer option, where the list of possible answers consists of only two options (mark or not mark the answer).

From the point of view of displaying on the form, possible answers can be located vertically or horizontally. The items to display are called:

1. List of answers (List box) with single or multiple choice. The user is shown the entire list or its limited part with the possibility of vertical scrolling.
2. Drop-down menu (Combo box). Only one of the possibilities is shown. When you open the Combo box, the entire list of answer options is displayed.
3. The sequence of radio buttons (Radio button List), located horizontally or vertically (options 4 and 9). The entire list of possible answers is shown. Used to select one of the valid answer options.

4. A sequence of checkboxes (Checkbox List), located horizontally or vertically. Both single and multiple choices are allowed, unlike the previous version. The entire list of possible answers should be displayed.
5. Checkbox (Radio button) (option 7), show agreement or disagreement with the question. The answer is “yes” or “no”.
6. A text box (Textbox) is used to organise the input of a response option in the form of arbitrary text. The text box can be single-line or multi-line. When using a multi-line display, the user sees all or part of the typed text, depending on the vertical size of the window and the size of the typed text.

An online survey can be either single-page or multi-page. Sometimes an option is used with displaying only one question on the page and after answering it the transition to the next page is carried out. According to the logic of the questions asked, an online survey can be a linear list or a tree (Figure 1).



**Figure 1. Options for an online survey structure (prepared by the author).**

An online survey in the form of a list means that all respondents receive the same questions in the same sequence, regardless of the answers they choose.

In the case of a tree, the questions asked to the interviewee depend on the answers chosen, i.e. the next question depends on the chosen answer to the previous one. Moreover, at some stage there may be a branching.

If the online survey is open, then after answering the last question, the respondent receives summary results of the survey, usually in the form of a histogram.

An online survey may consist of one or more questions. The preparation of the survey is as follows:

- 1) writing the text preceding the online survey (survey title);

- 2) typing of questions and answer options with a definition of the type to display the answers;
- 3) determining the relationship of questions and answer options, if necessary;
- 4) writing the text displayed after the completion of the online survey (for example, “Thank you for participating in the survey”, “Thank you for participating”, etc.).

If Internet surveys are conducted periodically on the same topic, then questions and possible answers are partially copied from previous surveys.

### **2.3. Tools of measuring the quality of the user experience**

We make decisions based on the actions of others and orient ourselves in the world with the help of behavioural data. Likes and comments on publications on social networks, lists of best-selling books, music charts and off-screen laughter in the series - information about other people's actions and reactions surrounds us.

One of the analysts says, "When my son Sean was 14 years old, he built a computer for games. When everything was found, from the monitor to the mouse pad, the son stopped at the choice between two models of the motherboard. They had the same characteristics, and the price did not differ much. However, the user rating of the first was one point lower than the second".

If we did not understand the first rule of the science of behaviour, we would simply choose the motherboard with the highest rating. Five points are better than four, right? However, at 14, Sean was smart enough to take a look at how many reviews formed a product rating.

A motherboard with a rating of five points has only five reviews, while a model with a lower rating has 250 reviews. Statisticians call this the sample size of the data collected. The larger the number, the better. This is the first rule of behavioural analysis. Here are the other five:

- ✓ Analyse statistics for a period of time, and not for a single moment.
- ✓ Monitor the relevance of the data.
- ✓ Observe instead of self-reporting.
- ✓ Use information only about existing and potential customers. Do not invent the perfect buyer.
- ✓ Make predictions based on quantitative rather than qualitative data.

Good A / B tests comply with all six rules. As a result of long-term observation, we obtain relevant data on a statistically significant sample of clients. This information is quantifiable. Therefore, specialists can predict the course of marketing campaigns and improve their effectiveness.



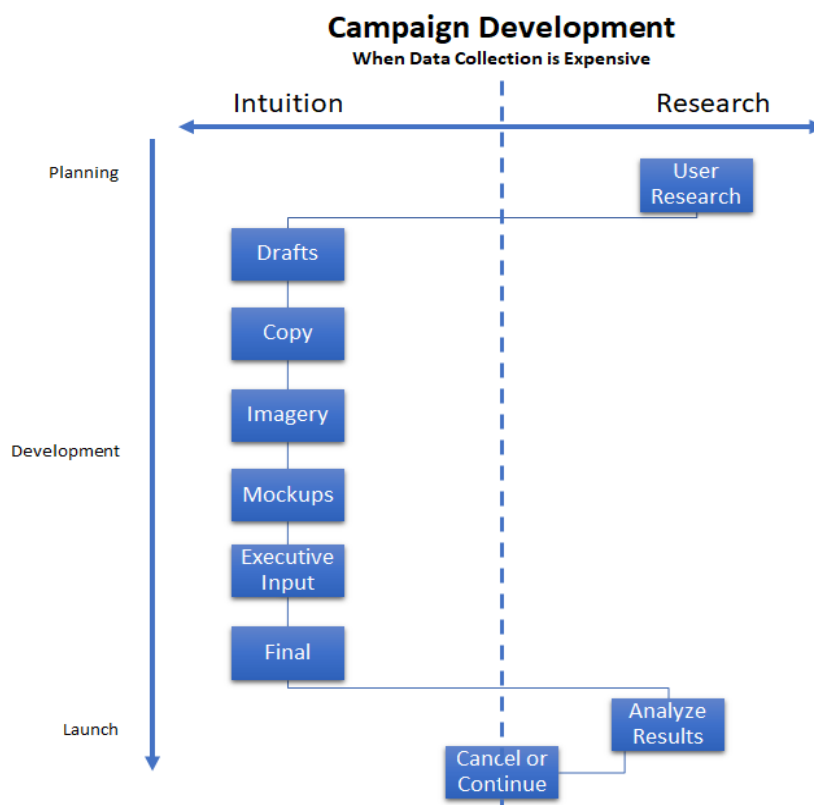
In 2014, Marks & Spencer redesigned its website. The company is valued at £ 10 billion and owns grocery and clothing stores in the UK and Europe. In 2013, about £ 1.5 billion (13% of its total sales) accounted for online orders. The redesign cost the company £ 150 million. The UX community and company designers found the changes positive.

However, users did not agree with the assessment of analysts. Immediately after the launch, sales decreased by 8%. Losses amounted to \$ 10 million per month. The trust in the brand has also weakened. When planning a redesign, the company had to examine website visitors.

In business, there is a struggle between intuition and analytics. Both are necessary. Intuition is the ability to apply existing experience in unusual situations. We admire those who can recognize the importance without any research.

When user behaviour analysis was an expensive service, planning and improving marketing campaigns was based only on intuition. Research was carried out only at the very beginning: it was the collection of high-quality data using opinion polls and focus groups.

Designers and developers then used this information as an aid, but for the most part relied on their own intuition (Figure 2).



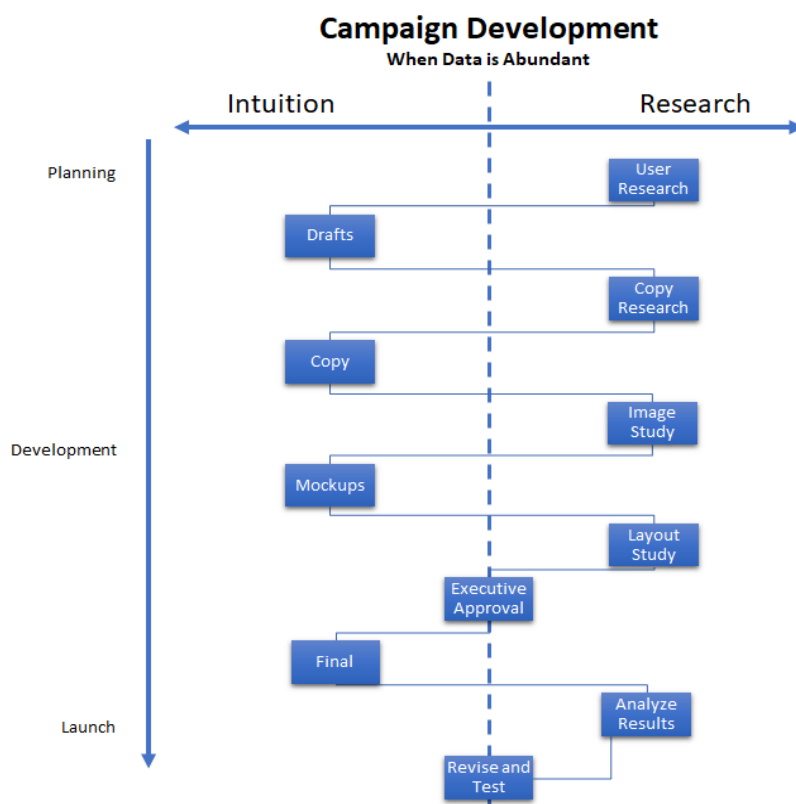
Source: <https://vc.ru/marketing>

**Figure 2. Campaign Development (when data collection is expensive)**

User behaviour data reflects campaign results. It is reproducible if the results satisfy the customer. If not, you have to start again. This is a classic approach – run and see what happens.

By 2017, getting user behaviour information was cheaper and easier. Most companies have not changed their approach, but marketing leaders now work differently.

Access to cheap quality data allows you to improve the product even before launch. Intuition remains important, but balanced by an analysis of intermediate indicators. You must always be able to stop and evaluate statistics. If it is out of date – collect a new one. This can take from several hours to several months (Figure 3).



Source: <https://vc.ru/marketing>

**Figure 3. Campaign Development (when data is abundant)**

You need to search for data about the user reaction to the offer on the placement sites (Google, Bing or others). When comparing ads, pay attention to the responses and conversion rates to see which one is more likely to appeal to potential buyers.

One of our customer’s ads on Google Adwords was examined. It turned out that the most popular banners offered a discount of either 20% or \$ 100 .

20% Off Window Treatments  
 We Bring the Showroom to You.  
 Free Local Design & Measure!  
[www.decorview.com](http://www.decorview.com)

\$100 off Power Shades  
 Sale on Automated Fashions.  
 Free Local Design & Measure!  
[www.decorview.com](http://www.decorview.com)

Figure 4. Advert on Google Adwords

The audience of such offers is “transactional” potential buyers. They are afraid to spend an extra dollar. However, on the landing page for this advertisement, discounts are not in the first place.

**HunterDouglas** Decorview  
Call us toll free 877-373-4700

**Unbelievable Savings and FREE Installation**  
 Take the stress out of shopping for large window fashions

- ✔ **Unbelievable Savings**  
Save 20% or more on select products.\* Plus save up to an additional \$100 off our most popular automation products during our Fashion in Motion Savings Event. See your designer for details.
- ✔ **Control Your Blinds from Anywhere**  
Enjoy the ultimate in control and convenience with the smart technology of the Hunter Douglas Platinum App. Raise and lower your shades automatically or with a quick slide of a finger from your phone or tablet.
- ✔ **Perfect Fit, Without The Hassle**  
No need to stress about measuring - our professional installers will make sure your window coverings fit perfectly - guaranteed.
- ✔ **100% Satisfaction, Guaranteed**  
Your purchase is covered by our 100% Satisfaction Guarantee and the Hunter Douglas® Lifetime Warranty.

[Start Saving](#)

Figure 5. Advert on Google Adwords

We focused on the \$ 100 discount – this was part of the initial offer. Small changes on the page increased the number of leads by 40%.

**HunterDouglas** Decorview  
Call us toll free 877-373-4700

**In Home Manufacturer Discounts**  
 Our Certified Designers can offer you \$100 off each unit you purchase.

Our Certified Designers will give you a quote on the perfect window treatments for your home.

- ✔ **Combine Discounts**  
You already qualify for 20% or more off of select products.\* Now, our certified designers are authorized to offer you up to an additional \$100 off our most popular automation products.
- ✔ **Limited time only**  
These discounts are only authorized during our Fashion in Motion Savings Event. **Request your FREE consultation before the event ends.**
- ✔ **Get your in-home quote.**  
Our designers will help you select the perfect window treatments and give you a quote based on your exact measurements.
- ✔ **100% Satisfaction, Guaranteed**  
Your purchase is covered by our 100% Satisfaction Guarantee and the Hunter Douglas® Lifetime Warranty.

You must request a consultation before the event ends.

[Lock in Your Savings](#)

Figure 6. Advert on Google Adwords

Information about user behaviour is also contained in the mailing list. The data on the number of clicks in your letters is stored in any email service. Put the sample in the table and evaluate what offers were interesting to future buyers.

One day, the compilers of the newsletters and the employees of the advertising department will want to find out which version of the landing page provides the greatest conversion. They can also conduct behavioural tests on your landing pages.

Benefits of Behavioural Data are:

- ✓ The result of observation instead of self-reports.
- ✓ Knowledge of the experience of your customers.
- ✓ Large amount of information: a selection of thousands of impressions or recipients, hundreds of clicks.
- ✓ Relevance in the long run. If your business depends on the season, you can evaluate the performance during the launch of the landing page.
- ✓ Additional benefits of already purchased advertising and created mailing lists.

What can be added to the page so that it influences the perception of visitors and convinces them that we can be trusted? The guys at Stack Overflow asked about this with a Usability Hub question test. They wanted to know what would inspire confidence in their page: recommendation or customer logos.

They created three versions of their homepage: without social proof, with recommendations and with logos of famous customers. It turned out that the third option is the most effective (Figure 7).

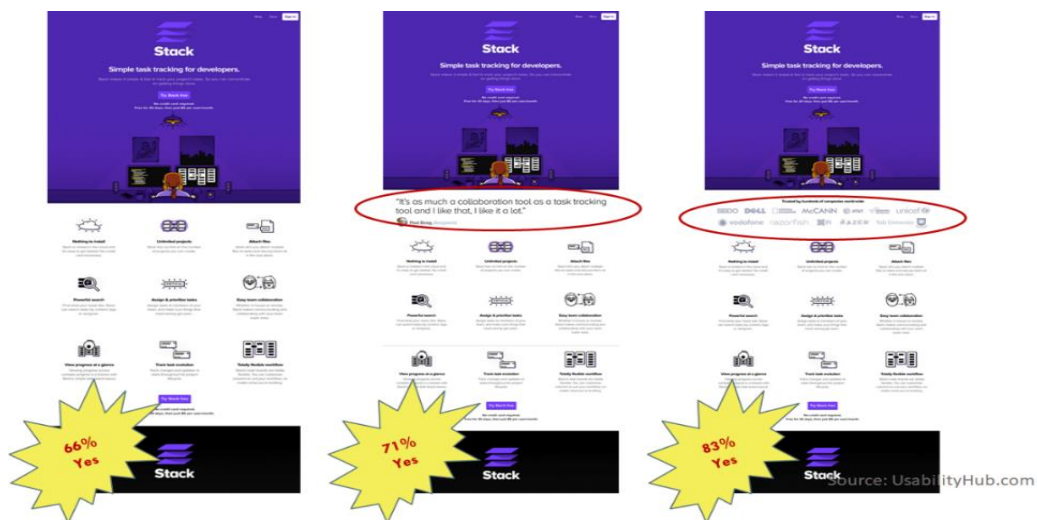


Figure 7. Changes on the page

This information indicates the direction, but narrows the range of options that can be used in more serious A / B testing.

This is a great example of using user opinions. Designers are not limited in creativity, because they can weed out the excess. This approach applies to many elements on the page:

- ✓ The amount of text.
- ✓ Page Structure.
- ✓ Navigation.
- ✓ Select an image, its size and place on the page.
- ✓ Symbols of trust.
- ✓ Confirmation achievements.
- ✓ Headings.

We expect the page to start converting visitors from the moment it launches. Its effectiveness is confirmed by research and enhanced by intuitive solutions.

A sufficient amount of traffic allows for A / B testing (split test). In 2016, Google released a free tool for conducting such research.

A / B testing tools make it possible to change the site without the help of developers, without affecting the hardware and software of the site. They evenly distribute traffic between your page variations and track which one generates the most leads or sales. They themselves perform statistical calculations, so you always know when the sample of subjects becomes large enough.

The results of this study fully comply with the six rules of behavioural analysis. However, A / B testing does not allow a deep study of quality indicators. To do this, we use the feedback form or review on the site. One of our favourite studies is the question that pops up on the feedback or order payment page. It usually sounds like "What kept you from buying today?" or "What kept you from registering today?" The answer can be provided in free form.

The results of such a survey can shed light on many things and push for new ideas for tests. This is a very creative process.

#### **2.4. Efficiency of inspection techniques**

An effective site becomes after it pays off the financial costs of its development and becomes a stable source of income. Evaluating the effectiveness of the site is periodically necessary for any project, because the technologies of search engines are constantly developing, due to which ranking algorithms and other indicators can affect the traffic and other indicators of the

quality of the site. Today, to get statistics on user activity on a site, it is enough to use services such as Liveinternet or Google Analytics. However, the information obtained in this way is not enough to make a full assessment of the effectiveness of the web site.

Evaluation of the effectiveness of the site is based on the goals.

Trying to figure out how productive the site is, you should use the following options:

- site traffic;
- the number of applications left through feedback forms;
- the number of incoming calls to the phone number presented on the site;
- the holding of special events, implying the placement of information exclusively on the site, which will make it possible to determine the number of its visitors by counting the number of users who participated in the event;
- A traffic source showing where people came from
- determining the time spent on the site;
- the definition of the pages from which the visit to the site began and ended, if the resource leaves before the product cards are viewed and the target action is performed, it is worth determining the page with the most frequent exit and working on its quality;
- identifying guide pages, which most often play the main and main pages of each section;
- statistics of failure indicators;
- definition of key phrases by which users went to the site;
- socio-demographic factors;
- calculating the percentage of new visitors;
- the number of purchases made from the site.

Particular attention is paid to creating incentive pages designed to encourage users to take any action: purchase, subscription, etc. In addition, specialists develop confirmation pages where a potential consumer needs to approve an order, subscription, etc. The success of the site depends on the quality of each page.

Evaluation of the effectiveness of a web site involves the collection of information on the above indicators. Moreover, in the future, if the site owner aims to jump over this data and reach a higher level of productivity, this audit makes it possible to monitor the change of parameters at any stage of work. If the resource has just begun its work, assessing the effectiveness of the site is based on competitors' indicators.

Conclusions about the productivity of the site may look like this:

- 23 new users came to the site this month - it is gaining popularity;
- total time for visiting pages increased by 1 minute 12 seconds - the site has become more interesting and informative;
- the failure rate decreased by 15% - the target audience came to the site.

However, these data do not yet indicate the achievement of the desired result. Evaluating site performance can be performed in various ways. For example, increasing the number of incoming calls, actively filling out questionnaires and order forms. For different sites, indicators of increased productivity can differ, for example, for an online store this will be the number of repeated requests for placing an order, for a social network it will increase the number of subscribers, for young sites it will have a certain number of regular visitors for a specific time period and a decrease in the percentage of failures, which is the arrival of the target audience on the site. No need to grab at the same time for all possible indicators of page performance. It is worth highlighting several basic parameters and analysing the site, based on their data. For any selling company, the best indicator of the productivity of a web page will be the increase in conversion.

You also need to remember that evaluating the effectiveness of a site depends not only on the number of sales sold to date, but also on:

- an increase in the percentage of customers who re-visited the site;
- increasing the frequency of page downloads offering additional or complementary goods and services;
- increase the number of completed forms for placing an order.

Thus, one of the main indicators of the good work of the site is considered to be its repeated visits and placing additional orders and new purchases by the same users.

If we are talking about a large site, divided into several sections, then each of them may have its own parameter for evaluating work efficiency. Having created the “For Partners” section, its performance is monitored, taking into account the number of visits to the page with the price list and its downloads, the number of completed forms with which the companies offer the site cooperation, and the number of incoming calls received to the phone number specified in this section.

Sometimes the goods offered by the site are sold out with some delay. The reason for this phenomenon is the “marketing funnel”.

The essence of the concept is that before the direct action of acquiring products, the buyer needs to go through the stages:

- familiarisation;
- interest;
- intentions.

Not all buyers who initially visited the site will reach the final stage - buying a product or ordering a service. Only a small percentage of potential consumers are able to purchase a product instantly, even if it suits them in all respects. Thus, marketers concluded that there is no single tool capable of turning a site visitor into a real buyer with one hundred percent probability. Each of the marketing tools is applicable at a certain stage of the “funnel”. For example, at the first stage, banner ads give good results to attract the attention of potential consumers due to their bright design, catchy design and enticing slogan. To make a choice in favour of specific products helps public relations campaigns. At the stage when the site visitor intends to take an action, but is still not completely sure of his decision, it is worth using contextual advertising.

The KPI indicator is applicable for evaluating the effectiveness of any site, provided that it is correctly understood and used. Website owners are mistaken in believing that every visit should be followed by immediate action and thinking that when this does not happen, the resource is ineffective. A “marketing funnel” is normal if:

- the proposed product involves a long decision-making in connection with its high cost, it can be real estate, personal transport, etc.;
- there is a high level of market competition, that is, a large number of companies offer similar products at similar cost;
- the product is unusual for purchase over the Internet;
- products have recently appeared on the market;
- users have no online shopping experience.

In Russia, all five factors influence the emergence of a "marketing funnel", its existence must be taken into account when evaluating the effectiveness of a site.

This means that the lack of regular orders placed by each site visitor is not yet an indicator of its unproductiveness. When an assessment of the effectiveness of a site is carried out and the results do not completely satisfy its owner, you should work not only on the resource itself, but also on the advertising campaign of a particular product.



## **2.5. Retailer visibility and its impact**

Now traders are turning to the very tool that forced them to take a defensive position in order to stimulate innovation, operational efficiency and growth. According to the Zebra's 2017 Global Retail Vision Study, sellers are betting on the Internet of Things (IoT), a growing network of web-accessible physical facilities, to digitally expand stores and keep consumers coming offline in the era of online stores.

They also turn to IoT to upgrade back office functions, simplifying and optimising their supply chain operations.

Retailers are focusing on a series of "smart" IoT devices equipped with sensors and network connections that collect and exchange data to get "Phygital", if I may say so.

Retailers from department stores, specialty chains, supermarkets, and small stores digitise their experience to improve customer service using amenities such as automatic inventory and personalised offers for customers.

For example, surveyed sellers implement various platforms, for example, sensors that track the track for consumers throughout the store and beacons that trigger offers in the store and set them as the main goal of their technology budget.

Moreover, they use these IoT technologies to achieve their main personalization goals: knowing when shoppers will be in the store; knowing where the customers are; knowing the settings for their shopping.

However, personalising customer experience doesn't mean much if pain points that have been interfering with shopping for a long time still exist: for example, inventory tracking.

To this end, retailers are investing heavily in deploying in-store IoT solutions, such as shelf sensors, automatic inventory counting, and cameras and video analytics. The goal is to provide a real-time snapshot of the actual stock in the store - whether on a shelf or in the back room, to combat stock outs as a key source of customer dissatisfaction, the study said.

Retailers are also adopting RFID technology to improve inventory management accuracy in a multi-channel retail landscape, where consumer purchases are increasingly spanning physical, online and mobile spaces.

RFID technology, called the next-generation barcode, allows you to track the product in real time throughout the supply chain. Studies have shown that technology has the potential to increase inventory accuracy to 95%.

In addition to expanding shopping opportunities and optimising retail operations, IoT technologies from RFID tags to beacons provide a real treasure trove of data on consumer preferences and shopping structure. Moreover, retailers are diving into it: they use IoT platforms to transform real-time data, manage visibility throughout the supply chain, and travel remotely to upgrade their operations to drive growth.

Sixty-seven percent of retailers surveyed have already implemented IoT, while another 26% plan to deploy it within a year.

## **2.6. Online Consumer Behaviour: Impact on Online Shopping Decisions**

The consumer behaviour of a modern online consumer shows that he/she is an experienced, well-informed person, who selects and buys high demands on the goods and services he/she wants to receive. He hopes to have a wider choice and will not allow him/her to foist himself/herself on unnecessary goods or manipulate himself/herself. Consumers are becoming more mobile and striving to get valuable service for them at the right time.

To analyse consumer behaviour, to find out what, where and how online shoppers buy, what motivates them to purchase goods on the Internet, sociological and marketing research are being conducted [6].

In December 2018, a study was conducted on the topic of elucidating the factors affecting the purchase of various goods in the online store.

The object of a quantitative strategy is the potential and real consumers of goods purchased in online stores. Initially, it was decided that people would be divided by age, gender and type of place of residence. So, the control quota characteristics were determined: men and women young (up to 18, 18-25 years old), middle-aged (26-35, 36-45 years old) and older (46-55, over 55) living in different types of populated area points: metropolis, large, medium, small towns, rural settlements). Thus, the study intends to use non-random quota sampling.

The subject of this study is the main factors affecting the choice of online stores and the purchase of goods in them. According to the results of the survey, the sample size was 168 people. The proportion of women in the sample was 62.5%, and men 37.5%. This difference in proportions with the general population may be due to the fact that women rather than men most often express a desire to take part in voluntary surveys.

In order to understand the consumer behaviour of online shoppers and highlight the main factors that determine the orientation and attitude towards the purchase of goods in an online store, the study presented hypotheses.

There is an opinion that the bulk of buyers are working people at a young active age, for whom an online store is a shopping place that allows them to access a wide range of products and at the same time to save time.

Today's online shoppers are more flexible, relatively young people who more easily and positively perceive technological and other innovations. However, the number of active buyers in older age categories is increasing. The results of the author's survey showed that there is no direct correlation between the frequency of visits to sites of online stores on age. The fact that the number of older users as well as the younger generation actively uses online stores is confirmed by the hypothesis [5].

In April 2018, the Russian Internet company InSales presented its research results on the topic "Gender Myths about Online Shopping". Thus dispelling the myths that women make more purchases on the Internet than men [14].

Thus, gender and age are not factors affecting the activity of making purchases in online stores.

What is bought most in online stores? According to the results of the research, the three most purchased categories of goods: tickets, clothes and shoes, accessories.

In July 2018, Yandex Market and GfK conducted a survey "Development of online retail in Russia". 5470 people aged 16 to 55 living in Russian cities took part in it. In this study, the product categories that are most often acquired by an online buyer were also identified. These categories turned out to be: clothing, shoes for adults, personal hygiene products, decorative cosmetics and perfume.

Also in this study, the results of leading product categories were compared with Western ones. As a result, the leading product categories in the West in Internet stores are: home textiles, interior products, pet supplies and pet products, goods for summer cottages, gardens, kitchen gardens. These three categories of goods, according to the results of the study, are in last place in the frequency of acquisition by Russian users.

The decision-making process is very similar to whether the consumer is offline or online. According to the traditional consumer decision-making model, the decision to buy a consumer usually begins with an awareness of the need, then searching for information, alternative assessments, making a purchasing decision and, finally, after-sunset behaviour. The search process is an important component of online customer behaviour.

Having found an interesting product in the online store, what motivates the user to purchase it? In the study, respondents were asked what factors they identify for themselves that affect

the choice and purchase of goods in the online store? According to the results of the survey, it was found that the three most motivating to make purchases in the online store were positive reviews about the product (23.5%), its quality (17.0%) and the availability of free delivery (15.3%).

When customers have enough information, they will need to compare these options for products or services. At the search stage, they can search for product reviews or customer comments. They will find out which brand or company offers them the best fit for their expectations. At this stage, a well-organised website structure and attractive design are important things to convince consumers to become interested in buying goods and services [13].

Why do people buy online? The main motive that leads people to online shopping is the desire to save. More than half of the respondents said they buy online because of the lower cost of goods than in ordinary stores. People are also attracted by the ability to compare prices, look for great deals and make purchases anytime, anywhere [15].

Such results were obtained by the company in a survey. The study showed that the main motive of the respondents is a large range of products, and more favourable prices are the second position in the ranking of motives.

At the procurement stage, the product mix, sales services, and information quality are likely to be the most important moment to help consumers decide which product they should choose, or what the seller should buy. Post-industrial behaviour will become more important after buying online. Consumers sometimes have problems with the product, or they may want to change or return the product they bought. Thus, return and exchange services become more important at this stage.

Next, we move on to what barriers exist when buying in online stores. Respondents were asked why, in their opinion, other people prefer not to shop at an online store. The respondents identified three top reasons, among which: 1. A sense of risk of being cheated (26.6%), 2. Lack of online shopping experience (20.2%), 3. Unusual service (17.7%).

According to the results of the query about what factors can affect them when they refuse to buy from the online store, the main barriers for respondents are: 1. Unknown store (30.2%), 2. Uncertainty in the quality of goods (19.8%), 3. High probability of cases of fraud (18.7%).

Yandex also obtained data on barriers to online shopping. The most significant, among which were highlighted: such barriers as: 1. You can't touch and try on 2. The product may be of poor quality 3. It is not clear who to contact in case of problems.

Thus, the main reason for not making a purchase at the Internet stores in the studies was highlighted – the feeling of risk of being cheated about the quality of the goods, the suspense about the store, because buyers do not get feedback from the store, and lack of the responsibility of the store.

Buying in an online store is a purely individual matter. Each for himself/herself sees and determines the leading factor, the main motive that will lead him/her to make purchases on the Internet. The higher the satisfaction from the last purchase on the Internet, the higher the likelihood that a person will make an online purchase again. This hypothesis put forward has been confirmed.

The vast majority of respondents as a result of our study speak of positive forecasts for the development of Internet marketing. At the same time, we tested and confirmed the hypothesis that it is women who give a more positive forecast for the development of the Internet than men do.

## **CHAPTER III. RESEARCH RESULTS AND DATA ANALYSES: ASSESSING THE IMPACT OF WEBSITE DESIGN ON CONSUMER BEHAVIOUR IN ONLINE SHOPPING**

### **3.1. The measurement metrics**

“If you cannot measure, you cannot control,” the classic quote from renowned management theorist Peter Drucker has become one of the key rules in Internet marketing.

Every self-respecting marketing specialist, at least, knows the main list of site indicators that need to be tracked. In reality, not all metrics are used in everyday work. Therefore, the knowledge gleaned from articles in the style of “20 most needed metrics of the online store”, “40 indicators that must be monitored”, and others cannot always be applied in practice.

The fact is that each of the indicators matters at a certain stage in the development of the project. What is mandatory for the marketer of a large online store may not matter to beginners. On the other hand, what is important for new and small ones will certainly be significant for marketers of large online stores.

Therefore, it is best to immediately segment all indicators by levels and implement them as the project develops. It is important to maintain a balance between the constant calculation of all indicators and the planning of further activities [8].

The following three metrics are important on online marketing:

1. Basic.
2. Important
3. Extended.

### **3.2. Basic metrics**

Basic can be considered all those that begin to be used at an early stage and tracked throughout the life of the online store. These metrics are used to predict and analyse the effectiveness of campaigns.

#### ***Total Visits / Total Visitors***

The total number of visits to the site and the number of users. These are the two simplest, however, the most "eloquent" indicators. If no one comes to the online store or there are few visitors, then other indicators will lose their meaning. As traffic (visits) grows, an understanding will appear why all the other metrics are needed.

### ***BR (Bounce Rate)***

The bounce rate is the percentage of visitors who visited the page of the site and, without performing any action, left it. A high percentage of BR does not always mean that something is wrong on the page. It is possible that the user found the necessary information (phone number, mailbox) and performed an action outside the site.

### ***ER (Engagement Rate)***

It is the level of visitor engagement. It is used to measure visitor reactions to content. The term is known for its social networks, but also applies to pages of online stores. It is calculated as the ratio of the actions on the page to the number of views. This can be any action within a separate page: clicks, filling out a form, scrolling to a specific place or a rating. The level of involvement shows the visitor's interest in the content (on the blog pages - interest in texts and comments, on product cards - interest in reviews, reviews and extended descriptions). This indicator is best monitored using click-map services: this is how you can see user behaviour on each page.

### ***CTR (Click Through Rate)***

It is ad click through rate. It is calculated by the formula:

$$CTR = \text{Quantity of Clicks} / \text{Quantity of shows} * 100\%$$

Most commonly used to measure ad performance. Whether it's promotion on social networks or contextual advertising, banners or video ads, a click leading a user to a site is a key action. By CTR, you can judge how much the ad (text, photo or video) is interested in the audience. A high CTR indicates that the advertising specialist successfully selected the message, form and method of conveying information to its target audience. A low CTR can have various reasons, for example, an improperly selected audience or an irrelevant offer.

CTR is a basic indicator of ad performance, but this metric does not provide direct sales information.

### ***CR (Conversion Rate)***

It is a conversion rate indicator. One of the most important metrics for the success of an online store. It is calculated as follows:

$$CR = \text{Quantity of orders} / \text{Quantity of sessions} * 100\%$$

The conversion rate is inextricably linked to the sales funnel and a deeper understanding of online store analytics. You can also take into account the number of users who viewed the goods, put them in the basket, or even took several steps to place an order. Such a calculation will help with a greater probability to understand at what stage and why users leave the site.

To some extent, CR is affected by the quality of the site. If the web resource is not optimised for mobile devices, the pages load for a long time, and the content is difficult to perceive, then the conversion rate will be very low.

Increasing CR is a whole range of activities that never ends, since the emergence of new products, the conduct of special activities, and the improvement of site usability are aimed, ultimately, at increasing the conversion rate.

### ***CPC (Cost Per Click)***

It is a cost per click metric. It is calculated by the formula:

$$CPC = Ad\ placement\ cost / Quantity\ of\ clicks\ on\ ad * 100\%$$

Small online retailers use CPC (like CPA) to plan campaigns. The results are taken as a baseline for comparison with the next campaign.

The CPC metric depends on several factors:

- ✓ competition in subjects, including taking into account geo-targeting;
- ✓ frequency of search queries;
- ✓ adservingtime.

### ***CPA (Cost Per Action)***

The cost of one action is usually targeted. This is one of the most requested metrics. It is calculated by a simple formula:

$$CPA = Cost\ of\ advertisement\ company / Quantity\ of\ orders$$

In general, Cost Per Action refers to the cost of a user performing a targeted action.

For an online store, sales are primarily important. Therefore, initially the CPA is calculated based on the number of real orders. At the next levels of online store development, CPA is becoming more difficult. Firstly, it can not be based on the cost of the entire campaign, but divided into channels, which allows us to evaluate their effectiveness and optimise. Secondly, the key action may also be not only the purchase. Marketers of medium and large online stores consider CPA, in which signing up for newsletters, registering, ordering a call back, etc. can also be a key action.

There may be a situation where the CPC indicator is gradually decreasing (a good advertisement attracts more and more visitors to the site), but the CPA indicator remains high – this indicates that the site has certain problems due to which users do not commit action.

For example, we have an advertising budget of \$ 100. A day of advertising goes 50 times. So  $CPC = \$ 100/50 = \$ 2$ . At the same time, only 10 site visitors perform the target action (for



example, put the product in the basket), we get the following indicator  $CPA = \$ 100/10 = \$ 10$ . The difference of \$ 8 is a conditional “fee” for a low conversion rate.

Accordingly, more experienced marketers strive to improve conversion, focusing on the obtained indicators of CPC and CPA. The smaller the difference between these metrics, the better. This indicates that the target audience that came to the site performs the targeted actions, and the advertisement justifies itself.

Moreover, if the online store uses various channels, you can compare their performance and see which one is more effective.

### ***ROMI (Return on marketing investment)***

$$ROMI = \text{Gross profit} - \text{Marketing costs} / \text{Marketing costs} * 100\%$$

This ratio shows how much the investment in marketing pays off. In fact, ROMI matters when certain marketing activities are profitable.

How to understand a successful investment in marketing? It is best to demonstrate by example: if the investment (costly part) in marketing was \$ 100, and the profit was \$ 200, then the payback ratio = 100%. In other words, every dollar invested earned another dollar.

If the payback ratio is less than 100%, then the project does not pay off. This situation is acceptable for those cases when it comes to a new business or experiment.

### **3.3. Important Metrics**

Important metrics appear in the arsenal of a marketing specialist, when you have to consider not only the volume of products sold or the resources spent on this, but also additional factors that lead the buyer to the sales funnel.

#### ***Returning Visitors***

If the percentage of such users is high, then the marketing activities were planned correctly, and the site, its products or services are interesting to the target audience.

From returning users, you can form a loyal audience. In particular, to conduct surveys, the results of which determine what can improve indicators.

#### ***Cart Abandonment Rate***

The metric is calculated by the formula:

$$\text{Cart Abandonment Rate} = \text{Quantity of orders in the cart} - \text{Quantity of paid orders} / \text{Quantity of orders in the cart} * 100\%$$

Even with excellent CPA, CPC and CTR, the online store is not safe from the fact that visitors will not leave their shopping carts filled with goods without payment. According to research by the Baymard Institute, there are 10 main reasons:

- ✓ too high additional costs (for example, delivery) - 61%;
- ✓ the need to create an account – 35%;
- ✓ too long process of filling in the fields and verification – 27%;
- ✓ did not see or could not calculate the total cost of the order – 24%;
- ✓ errors on the site – 22%;
- ✓ refusal to fill out your credit card information on the site – 18%;
- ✓ too long delivery period – 16%;
- ✓ return conditions did not fit – 10%;
- ✓ did not find the preferred payment method – 8%;
- ✓ credit card was declined – 5%.

### ***Churn Rate***

In other words, this is the percentage of customers who have made only one purchase and will no longer return to the site.

*Churn Rate = Users at the beginning of a month – Users at the end of a month / Users at the beginning of a month \*100%*

There may be several reasons for the churn, but most of them relate to issues of the quality of purchased products, the level of online store service, decrease in brand loyalty or the appearance of more attractive offers from competitors.

Sometimes the churn may be associated with a change in the social or material status of the client.

Obviously, the lower the Churn, the better for the business. To improve the metric, you need to pay more attention to all the reasons why customers are no longer returning.

### **3.4. Extended Metrics**

These include all those indicators that are unlikely to be evaluated by the owner of a small online store. The marketer of mid-level projects uses them from case to case (for example, for calculations in presentations or in strategic planning). At the same time, for large trading floors, advanced metrics allow you to navigate the more complex world of numbers on which business success depends.

***LTV (Customer Lifetime Value)***

*LTV = Average check \* Average quantity of sales in a month \* Average time of customer hold (in months)*

LTV allows you to determine what kind of profit, on average, gives the client for the entire time of shopping in the online store. Obviously, the value indicator of the customer's life cycle should be higher than the cost of attracting the customer.

In fact, this formula has an error. If the average check and the number of sales can be calculated, then with the time of customer retention, difficulties can arise.

### ***CPM (Cost Per Millennium)***

Cost per thousand shows. The metric formula is as follows (measured in monetary units):

*CPM = Cost of ad placement / Quantity of shows \* 100 shows*

CPM is one of the earliest ways to evaluate advertising campaigns.

This metric is often used to measure the effectiveness of display advertising. It can be used by small online stores, but nevertheless, it is more often used to evaluate image advertising. This is due to the fact that small stores are more likely to pay for visitor click through advertising (CPC) than just display a banner. For large players in the market, this approach allows you to remind yourself and talk about new products.

CPM is considered in cases where the fact of impressions is important (for example, the dissemination of information about the brand).

### ***LCR (Lead-close rate)***

Lead closing indicator. LCR is formed by the formula:

*LCR = Quantity of customers for reporting period / Total sum of leads \* 100%*

Since leads are potential buyers who have shown a certain interest in the product (left their personal data, subscribed to the free version of the service, subscribed to the newsletter, etc.), work with them should be carried out systematically.

LCR allows you to see how many percent of leads become customers (or make repeat orders). Accordingly, based on the indicators, further tactics of the marketing work with potential buyers are formed.

### ***RPC (Revenue Per Click) or EPC (Earn Per Click)***

One click revenue. It is calculated as follows:

*RPC = Total revenue / Quantity of clicks \* 100%*

Usually the resulting number is compared with CPC (cost per click). Ideally, the RPC should be an order of magnitude larger than the CPC, otherwise it can be concluded that the advertising campaign is poor.

### ***RPR (Repeat Purchase Rate)***

Repeat rate RPR Formula is:

$$RPR = \text{Quantity of customers doing more than one purchase} / \text{total customers} * 100\%$$

When calculating RPR, it is important to remember that here we are talking about a certain fixed period of time, for example, one month or six months.

The repeat purchase rate allows you to plan and develop customer loyalty programs.

### ***AOV (Average Order Value)***

The size of the average check, measured in monetary units. AOV calculation formula is:

$$AOV = \text{Total sum of profit} / \text{Quantity of orders}$$

With seeming simplicity, the metric can be used for analysis in many situations and give an objective idea of how profitably an online store works. Moreover, dividing the audience into several price segments (by average check level) will allow you to plan individual campaigns for each of them. Or vice versa, focus only on working with one segment.

### ***CPO (Cost per Order)***

The cost of one order. For the calculation of CPO there is a formula:

$$CPO = \text{Cost of ad placement} / \text{Quantity of orders}$$

CPO makes it clear how much it costs an online store to receive one order (excluding its cost). Unlike CPA, where any target action can be evaluated, CPO only considers sales. It is most often used together with AOV, which makes it possible to evaluate the effectiveness of an ongoing advertising campaign, including for evaluating an individual channel.

### ***CRR (Cost Revenue Ratio)***

Performance indicator, sometimes this metric is called – efficiency ratio:

$$CRR = \text{Total cost of advertisement campaign} / \text{Total revenue from advertisement campaign} * 100\%$$

The result gives a clear idea of how effective the selected advertising campaign was.

### ***CAC (Customer Acquisition Cost)***

The cost of attracting a new customer.

$$CAC = \text{Total expenses on the whole campaign for attracting new customers} / \text{Quantity of attracted customers}$$

This metric is similar to CPA and CPO, but it is still different from them. It provides information on the cost of attracting directly new customers (those who do not include returnees).

Thus, a lot of metrics are used to assess the state of the online store and choose the directions for its further development. Some of them are informative in themselves, some in combination with others. However, they all represent a mathematical, unbiased look at the situation and therefore should be actively used in the evaluation and planning of advertising campaigns. As the project grows and becomes more complex, individual metrics may also appear that are developed by marketers for specific purposes.

### **3.5. Research method and development of hypotheses**

The survey method, which is one of the quantitative research methods, was used as a research method, and the results of the research were presented. Respondents were randomly selected in Baku.

During this process, the necessary explanations were made about the purpose of this study and how to fill out a questionnaire. As a result of the necessary explanations, 160 people took part in the study. Answers to the questionnaires were received, 90 (56,3%) of which were men, and 70 (43,7%) were women. All data collected during research and surveys were analysed using a regression model. Of these, 21-30 years old – 54.2%, 31-40 years old – 28.4%, 41-50 years old – 13.7%, over 50 years old – 3.7%. Most of the respondents were engaged in business (54.8%); 15.4% worked in the service sector; 6.6% of civil servants; 5.3% in agriculture; 4% at university, 5% self-employed; 8.9% worked in other industries.

In the research process, 8 main hypotheses were put forward and based on these hypotheses, a research model was selected and analysed [26].

Literature analysis showed that human factor and computer factor are the main features of website design [17]. They are related to the experience of users of the website and, in turn, significantly affect the intermediate results of the relationship to the site. As a result, determine the behavioral intentions of users. Therefore, for analysis, we propose the following hypothesis:

**H1:** a) Computer factors and b) human factors have a noticeable effect on perceived usefulness.

The Internet is mainly used to obtain information or find entertainment. The human factor and computer factors have a great influence on information content and entertainment. For this reason, we propose the following hypotheses:

**H2:** 1) computer factors and 2) human factors have a positive effect on informativeness.

**H3:** The human factor has a positive effect on perceived entertainment.

Literature analysis has shown that poor website quality leads to a decrease in advertising value and consumer incentives, causing negative comments. Poorly designed websites restrict consumers from navigating through websites and ultimately purchasing products.

Therefore, we propose the following hypothesis:

**H4:** 1) computer factors and 2) human factors negatively affect perceived irritation.

Research results have shown that an informative, interesting, and well-designed site has a positive impact on the attitude towards the site. Users' perceived annoyance has a negative impact on their attitude towards the site [2]. Therefore, we propose the following hypothesis:

**H5:** The attitude to the site is very affected by 1) Usability, 2) Informativeness, 3) Entertainment, but negatively affected by 4) Irritability.

Prior research has demonstrated that website interactivity has an impact on online consumers' behavioural responses: online flow, the website users' complete immersion in an online activity, which in turn leads to more browsing, shopping, and, ultimately, repeat purchase[20]. Attractive, entertaining, informative, or useful to bring consumers into a flow situation. Therefore, we propose the following hypothesis:

**H6:** Perceived Online flow is negatively affected by 1) Irritating, but positively affected by 2) Usefulness, 3) Informative, 4) Entertainment.

Attitude is a key factor in behaviour or behavioural intentions in the context of online shopping. A number of studies have shown that site attitude has a positive effect on behavioural intentions. Usefulness has a positive effect on the attitude towards the site and the intention to use the site. Purchases of information and intentions to purchase goods have a positive and significant impact on attitudes towards purchases. Therefore, we propose the following hypothesis:

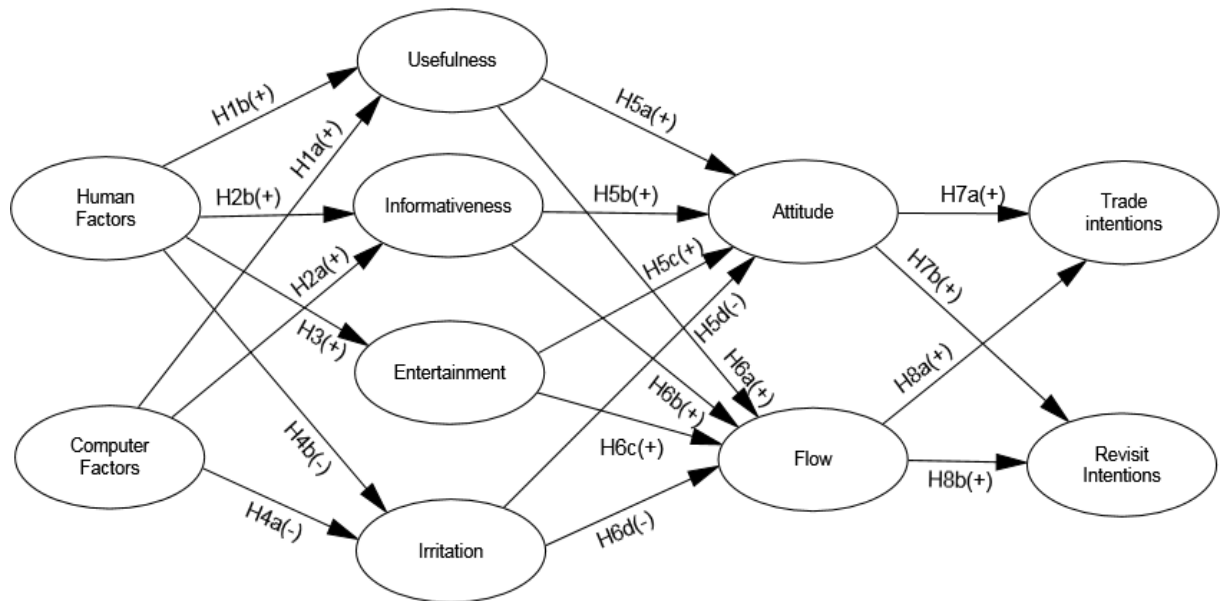
**H7:** Website attitude is positively influenced by a) the intention to trade with the website and b) the intention to revisit the website.

Purchase intent and intent to return to a website are positively and significantly influenced by the online flow. Therefore, we propose the following hypothesis:

**H8:** Perceived online flow positively influences a) Intention to trade from a website and b) Intention to revisit a website.

The model shown in Figure 8 is suggested in the study. The abstract model indicates that website design factors drive Internet behavioural intentions, judged by customers' experiences in using the site and their attitude toward the site and online flow [12].

The outcome of analyzing the proposed hypotheses were displayed in Table 9.



**Figure 8. Research Model**

During the survey, participants' answers were collected and the results were summarized in the form of a table. The final results of the survey are given in Table 7.

**Table 7. Answers to survey blanks-Final**

| <b>H1. US=Usefulness</b>   |     |
|--|-----|
| <i>a) The physical size, unique power, and configuration of your computer affect how well you use a website.</i>   |     |
| • Has a good effect  | 117 |
| • Moderate effect  | 27  |
| • Does not affect.   | 16  |
| <i>b) To what extent do the current conditions and type of employment in the organization you work for affect the advantageously use of the website?</i> |     |
| • Has a good effect  | 108 |
| • Moderate effect  | 43  |
| • Does not affect  | 9   |

|   |     |
|---|-----|
| <b>H2. IN=Informativeness</b>   |     |
| <i>a) How does the informativeness of the website affect your obtaining information about the sales and prices of these products when they are purchased?</i>   |     |
| • Has a good effect   | 127 |
| • Moderate effect   | 11  |
| • The information content of the website does not affect my purchasing intentions   | 22  |
| <i>b) How does the power of your computer and installation configuration affect your access to complete and comprehensive information when purchasing a product on the website?</i>   |     |
| • Has a good effect   | 133 |
| • Moderate effect   | 8   |
| • The computer factor does not affect my purchasing intentions  | 19  |
| <b>H3. EN=Entertainment</b>   |     |
| <i>How does website entertainment, site design, and color configuration affect your online purchases?</i>   |     |
| • Has a positive effect.  | 123 |
| • Does not affect   | 32  |
| • Has a negative effect.  | 5   |
| <b>H4. IR=Irritation</b>  |     |
| <i>a) Do you care if the website is poorly designed, has low advertising value and consumer motivation?</i>   |     |
| • It is annoying  | 130 |
| • Has little effect   | 27  |
| • It doesn't bother   | 3   |
| <i>b) How does your workload in the organization you work for, the heavy work environment, the poor quality of displays and controls, and the risk factor of buying a product on a site affect the purchase of a product on a site?</i> |     |
| • Has a negative effect.  | 134 |
| • Has little effect   | 22  |
| • Does not affect   | 4   |
| <b>H5. AT=Attitude</b>  |     |
| <i>a) How does the fact that the prices of goods purchased through the site are reasonable, that you can easily receive the goods, and also spend less time ordering and searching for goods affect your attitude towards the site?</i> |     |
| • Good  | 139 |
| • It doesn't matter to me   | 8   |
| • These goods are better to buy in stores   | 13  |



|   |     |
|---|-----|
| <i>b) How does information content of the website affects your online shopping?</i>   |     |
| <ul style="list-style-type: none"> <li>• When a website is more informative, I use that information to get more products.</li> </ul>  | 77  |
| <ul style="list-style-type: none"> <li>• The information on the website sometimes has a positive effect on my purchasing intentions.</li> </ul>   | 55  |
| <ul style="list-style-type: none"> <li>• The information on the website does not affect my intent to purchase.</li> </ul>   | 28  |
| <i>b) If the design of a website (i.e. colors, areas, menus, navigation, etc. are not harmonious) annoys you, how does this affect your relationship with the website?</i>                                |     |
| <ul style="list-style-type: none"> <li>• Negative</li> </ul>  | 147 |
| <ul style="list-style-type: none"> <li>• It doesn't matter to me</li> </ul>   | 13  |
| <ul style="list-style-type: none"> <li>• Positive</li> </ul>  | 0   |
| <b>H6. FL=Flow</b>  |     |
| <i>a) How does the usefulness of a website affect your online activity?</i>   |     |
| <ul style="list-style-type: none"> <li>• I will become more active in the network when the site is useful.</li> </ul>   | 69  |
| <ul style="list-style-type: none"> <li>• It has little effect on my online activity when the site is useful.</li> </ul>   | 43  |
| <ul style="list-style-type: none"> <li>• The usefulness of the website does not affect my online activity.</li> </ul>   | 48  |
| <i>b) If the website is informative, how does it affect your online activity?</i>   |     |
| <ul style="list-style-type: none"> <li>• I become more active online when the website is informative.</li> </ul>  | 112 |
| <ul style="list-style-type: none"> <li>• It has little effect on my online activity when the website is informative.</li> </ul>   | 37  |
| <ul style="list-style-type: none"> <li>• The informative nature of the website does not affect my online activities.</li> </ul>   | 11  |
| <i>c) How does an entertaining website affect your online activity?</i>   |     |
| <ul style="list-style-type: none"> <li>• When I have an entertainment on the website I become more active online.</li> </ul>  | 76  |
| <ul style="list-style-type: none"> <li>• When a website is an entertainment , it has little effect on my online activity.</li> </ul>  | 19  |
| <ul style="list-style-type: none"> <li>• The entertainment of the website does not affect my online activity.</li> </ul>  | 65  |
| <i>d) How does the presence of factors on the website (poor design of displays and controls, perception of risk when purchasing goods on the website) affect your participation in online activities?</i> |     |
| <ul style="list-style-type: none"> <li>• My online activity becomes passive when the website is irritating.</li> </ul>  | 97  |
| <ul style="list-style-type: none"> <li>• When a website is irritating, it has little effect on my online activity.</li> </ul>   | 38  |
| <ul style="list-style-type: none"> <li>• The irritability of the website does not affect my online activity.</li> </ul>   | 25  |
| <b>H7. TR=Trade intentions</b>  |     |
| <i>How does your intention to buy a good (behavioral intention) is affected by your intention to trade from the website?</i>  |     |
| <ul style="list-style-type: none"> <li>• I decided to buy a good because I have a positive attitude towards the site.</li> </ul>  | 26  |
| <ul style="list-style-type: none"> <li>• When I need goods, I decide to trade from a website.</li> </ul>  | 91  |
| <ul style="list-style-type: none"> <li>• My attitude towards the website does not influence my intention to buy the product.</li> </ul>   | 43  |
| <b>H8. RE= Revisit Intentions</b>   |     |
| <i>How does spending too much time on the internet affect your re-access to the</i>   |     |

|  |     |
|--|-----|
| <i>website?</i>  |     |
| <ul style="list-style-type: none"> <li>• Being on the Internet for a long time has a positive effect on re-accessing the website and trading online.</li> </ul>      | 102 |
| <ul style="list-style-type: none"> <li>• Being on the Internet for a long time has little effect on re-accessing the website and making online purchases.</li> </ul> | 31  |
| <ul style="list-style-type: none"> <li>• Being on the Internet for a long time does not affect my ability to revisit the site and trade online.</li> </ul>           | 27  |

The survey provided us with the data needed to conduct statistical analysis. In order to establish a correlation between the data, the results of the survey must first be digitized. To do this, the responses to the request were replaced by the numbers 0, 1 and 2, respectively.

If the answer in the survey does not influence the question, it is replaced by 0, if it affects less or weakly - by 1, if it affects well or strongly - it is replaced by 2. If the answer to the question of the previous survey is negative, the number 2 is replaced by 0, and 0 is replaced by 2 digits, respectively. If the survey items consist of several questions, find their average numerical value to find the total number of answers corresponding to the number. The table of numbers after being collected in an Excel file is sorted by the filter from largest to smallest. These indicators are then loaded into a Python 3.9.1 Excel file to determine the correlation between the data. The results of the calculation are given in Table 8.

The sequence and explanation of the codes used in the calculation are given below.

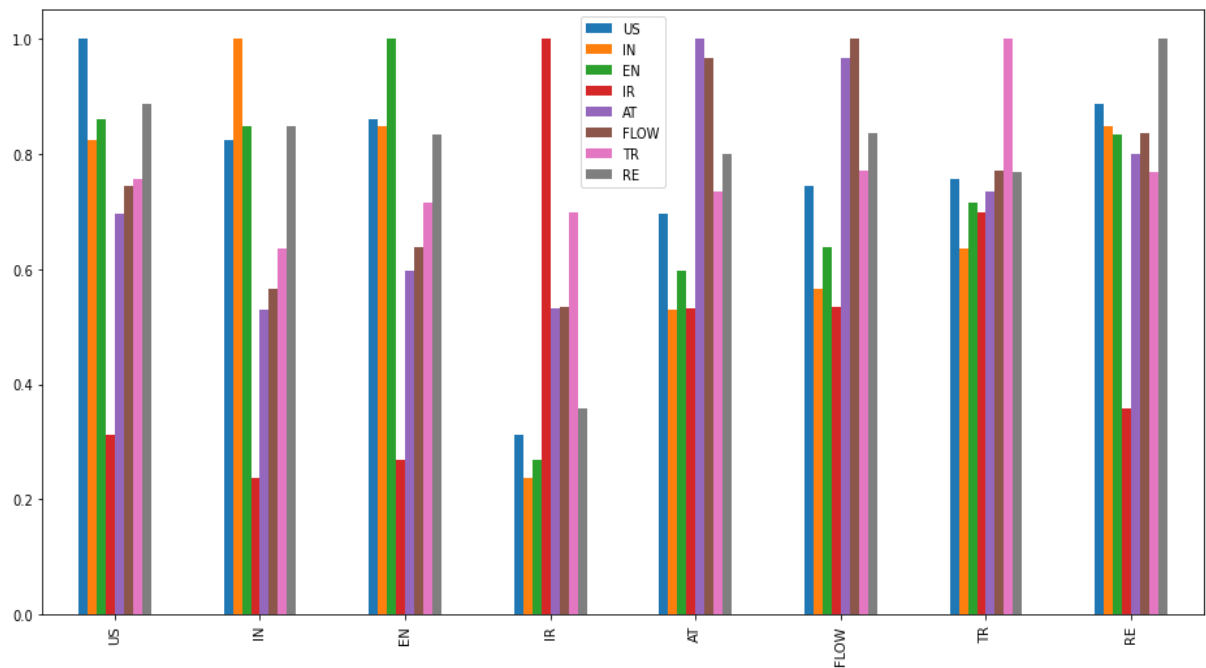
Python 3.9.1

1. import pandas as pd
2. import numpy as np
3. import matplotlib.pyplot as plt
4. df = pd.read\_csv(r'C:\Users\user\Desktop\excell\economy.csv')
5. df.corr(method = 'pearson')
6. corr = df.corr()
7. corr.style.background\_gradient(cmap='coolwarm', axis=None)

Codes 1 and 2 are written into the program to perform operations on files and work with linear algebraic algorithms, respectively. Code 3 is written in a program to graphically describe the results. Command 4 adds a file called economic.csv to the python program. Command 5 finds the correlation between the hypothesis factors present in the file. The *Pearson method* was chosen as the correlation method. Correlation results are converted to a graphical representation using commands 6 and 7.

**Table 8. Determined correlation between hypothesis factors using Python 3.9.1 software**

|                                      | <b>US= Usefulness</b> | <b>IN= Informativeness</b> | <b>EN= Entertainment</b> | <b>IR= Irritation</b> | <b>AT= Attitude towards the site</b> | <b>FL=Flow (online)</b> | <b>TR= Trade intentions</b> | <b>RE=Revisit Intentions.</b> |
|--------------------------------------|-----------------------|----------------------------|--------------------------|-----------------------|--------------------------------------|-------------------------|-----------------------------|-------------------------------|
| <b>US= Usefulness</b>                | 1                     | 0,822653                   | 0,860443                 | 0,309819              | 0,695072                             | 0,74326                 | 0,75799                     | 0,8866                        |
| <b>IN= Informativeness</b>           | 0,822653              | 1                          | 0,848845                 | 0,235959              | 0,529369                             | 0,56607                 | 0,636081                    | 0,847149                      |
| <b>EN= Entertainment</b>             | 0,860443              | 0,848845                   | 1                        | 0,265984              | 0,59673                              | 0,6381                  | 0,717021                    | 0,833237                      |
| <b>IR= Irritation</b>                | 0,309819              | 0,235959                   | 0,265984                 | 1                     | 0,529146                             | 0,53119                 | 0,692412                    | 0,355936                      |
| <b>AT= Attitude towards the site</b> | 0,695072              | 0,529369                   | 0,59673                  | 0,529146              | 1                                    | 0,96634                 | 0,73402                     | 0,798536                      |
| <b>FL=Flow (online)</b>              | 0,74326               | 0,566068                   | 0,638099                 | 0,53119               | 0,966344                             | 1                       | 0,768351                    | 0,835323                      |
| <b>TR= Trade intentions</b>          | 0,75799               | 0,636081                   | 0,717021                 | 0,692412              | 0,73402                              | 0,76835                 | 1                           | 0,768567                      |
| <b>RE= Revisit Intentions.</b>       | 0,8866                | 0,847149                   | 0,833237                 | 0,355936              | 0,798536                             | 0,83532                 | 0,768567                    | 1                             |



**Figure 9.** Graphical representation of the correlation between hypothesis factors using Python 3.9.1 software.

Hypothesis testing showed that human and computer factors have a positive effect on utility, which indicates the correctness of hypotheses H1a and H1b. Computer factors had a positive and big impact on the information content, which confirms the hypotheses H2a and H2b. The human factor has had a positive effect on entertainment, which suggests that the H3 hypothesis is supported. Computer factors had a negative effect on irritability, which shows that the H4a hypothesis was confirmed. The influence of site design factors a) usefulness and b) informativeness was different. The results showed that computer factors had a greater influence on usefulness, and human factors had a greater influence on informativeness. Usefulness, maturity, and awareness were positively expressed about the site. Irritation did not have much effect on the attitude to the site. This indicates that the H5a-5c hypothesis was confirmed, but the H5d hypothesis was not confirmed. On the other hand, the H6a-6c hypothesis is not supported due to the low impact of usefulness, informativeness, and entertainment on online flow. However, irritation had a negative effect on the attitude towards the site, and therefore the H6d hypothesis was confirmed. Finally, site attitudes had a significant impact on the revision of intent, indicating support for hypotheses H7a and H7b. However, the flow rate had little effect on both profitability and trading intentions. Thus, hypotheses H8a and H8b are not confirmed.

The results of testing the proposed hypotheses are presented in Table 9.

**Table 9. Results of hypothesis testing**

| <b>Hypothesis</b> | <b>Parameter estimation</b>                  | <b>Results</b> |
|-------------------|--|----------------|
| H1a(+)            | Computer factors→Usefulness                  | Supported      |
| H1b(+)            | Human factors→ Usefulness                    | Supported      |
| H2a(+)            | Computer factors→ Informativeness            | Supported      |
| H2b(+)            | Human factors→ Informativeness               | Supported      |
| H3(+)             | Human factors→ Entertainment                 | Supported      |
| H4a(-)            | Computer factors→ Irritation                 | Supported      |
| H4b(-)            | Human factors→ Irritation                    | Not Supported  |
| H5a(+)            | Usefulness→ Attitude toward the site         | Supported      |
| H5b(+)            | Informativeness→ Attitude toward the site    | Supported      |
| H5c(+)            | Entertainment→ Attitude toward the site      | Supported      |
| H5d(-)            | Irritation→ Attitude toward the site         | Not Supported  |
| H6a(+)            | Usefulness -→ Flow                           | Not Supported  |
| H6b(+)            | Informativeness→ Flow                        | Not Supported  |
| H6c(+)            | Entertainment→ Flow                          | Not Supported  |
| H6d(-)            | Irritation→ Flow                             | Supported      |
| H7a(+)            | Attitude toward the site→ Trade intentions   | Supported      |
| H7b(+)            | Attitude toward the site→ Revisit intentions | Supported      |
| H8a(+)            | Flow→ Trade intentions                       | Not Supported  |
| H8b(+)            | Flow→ Revisit intentions                     | Not Supported  |

We can express the results of the research process as follows:

1. It became clear that both computer and human factors are important indicators of usefulness and informativeness. Here computer factors have a less strong influence on utility than the human factor.
2. We analyzed how website users' experiences affected their attitude towards the website and its flow.
3. Thirdly, it became clear that the attitude to the site has a very strong influence on trading intentions and repeated visits. However, traffic was found to have little effect on trading intent and return visits to the site.

## CHAPTER IV. CONCLUSION

This research work focused aims to empirically test web design factors to predict and explain the behavioural intent of website users. For analysis, we studied conceptual bases of the impact of web page design on consumer behaviour. Then we selected a research model and conducted a hypotheses-based analysis and identified the factors that most influence consumer behaviour in website design. To conclude:

- ❖ To create a good design, the site owner must definitely talk with the client. When starting to create layouts, the site owner should clearly understand what structure the site should have, what content will be posted and what the client wants to see as a result.
- ❖ To create a beautiful design that will appeal to all users is impossible. The site design should appeal to the target audience. As a rule, marketers select the target audience for a company.
- ❖ The safety of customers of an online store – first, it is the security of personal data and payments of customers.
- ❖ Usability testing helps to increase the conversion of a site or an online store, find hidden intentions and user wishes, and make a decision on the development of additional functionality. Content design on the site should be unique and interesting.
- ❖ In the process of research we have compiled a list of the most popular and necessary colours for web design, determining their correct combination, positive and negative sides. In addition, most importantly, we did all of these with real examples.
- ❖ Sellers are betting on the Internet of Things (IoT), a growing network of web-accessible physical facilities, to digitally expand stores and keep consumers coming offline in the era of online stores.
- ❖ Evaluating the effectiveness of the site is periodically necessary for any project. An effective site becomes after it pays off the financial costs of its development and becomes a stable source of income. In the course of the study, the main indicators that are used to predict and analyse the effectiveness of campaigns are systematised.
- ❖ The survey revealed that the main guiding element of behavioral intentions in the network is the attitude towards the site. When the attitude towards the site is positive online sales increase. A certain correlation showed that *Trade intentions* were more highly influenced by the factors *Usefulness* (0,75799), *Online flow* (0,76835), *Attitude towards the site* (0,73402).The correlation showed that *Revisit Intentions* were more

highly influenced by the factors *Usefulness*(0,8866), *Informativeness* (0,847149), *Entertainment* (0,833237).

- ❖ The analysis showed that the computer factor and the human factor are closely related to the practices of website users: taking *Informativeness*, *Entertainment*, *Usefulness*, and in ultimately, affect the user's behavior.
- ❖ As can be seen from the correlation analysis (Table 8), the *Attitude towards the site* is influenced by *Usefulness* (0,695072), *Entertainment* (0,59673) and *Informativeness* (0,529369). However, as can be seen from the table, *Online flow* (0,96634) has a greater impact on the *Attitude towards the site*. This clearly shows the indirect influence of *computer factors* and *human factors* on *Attitude towards the site*. This means that when designers create a website, more images, colors, fonts, shapes, animations, etc. need to be added to that website.

### **Recommendation for further research**

The study analysed the value that consumers place on website design when shopping online and how website design affects purchasing power. However, as there are many theories of "The impact of web page design on consumer behaviour in online shopping", for the further research it may be good choice to analyse on the base the "Impact of the Industrial 4.0 revolution on consumer behaviour and website design"

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