

FACULTAD DE INGENIERÍA

Escuela Académico Profesional de Ingeniería de Sistemas e Informática

Tesis

**Virtual Store of Personalized Sale for Footwear
in the SME Sector**

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Para optar el Título Profesional de
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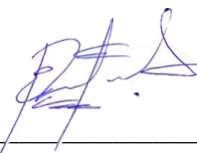
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ABSTRACT

The footwear industry around the world presents a remarkable digital transformation so as not to lose competitiveness in the market, more and more people are immersed in the purchase of footwear virtually. The study focused on designing a new shopping experience through footwear customization, which provided new practices. Having a qualitative-analytical method, where a survey was developed, finding customer satisfaction results, as well as the agile method of application software oriented in business design for footwear, where an e-commerce store called "CustShoes" was developed that allows the user to experience the purchase of personalized shoes in real time making changes such as: size, colors, material, text, etc. In this way the customer can buy a customized product that arrives at home satisfying their needs.

CCS CONCEPTS

• Applied computing; • E-commerce; • Online shopping;

KEYWORDS

component, footwear, ecommerce, virtual store

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INTRODUCTION

In recent years, due to the rise of online virtual communities as well as e-commerce, people have become accustomed to living in a fully digitized world. Traditional businesses have been replaced by e-commerce. It is a reality that smartphones, laptops, and internet-connected devices have become a common channel of commerce,

which is done through applications that are composed of a friendly and practical interface. These are constantly updated and innovated to maintain user interest, this new trend forces traditional companies to innovate in e-commerce to get their share of the pie in market share. [1]

In the past, traditional companies could compete with the largest companies in the market only by meeting market standards. Today, studies of motivational patterns of consumer behavior provide a basis for future research into consumer reactions to the new phenomenon of technology-based personalization (PET) in retail stores. [2]

At the same time, with the development of computer technology, the Internet has gradually become the close companion of human social life and has become an indispensable part of human life, the proposal includes technology, as the main factor for the creation, customization and purchase of footwear, because today the consumer lives in a fully digitized world and looks for tools that help him save effort and time in any purchase process. And so, being able to meet the objectives of adjustment to the supply-demand relationship, most indicate that the high price of obtaining new customers in the online modality and the problems related to customer retention is the reason for the growing importance of customer satisfaction and loyalty of online retailers. There is a serious emotional barrier with online shoppers, who get frustrated if the size is not available when they try to place the item in the shopping cart after a long search. The exclusive design is considered to have significant potential and scope for increase. Due to the current and future role and the importance of e-commerce for the purchase of footwear. [3] [4] [5] [6]

The business world had to reinvent itself and evolved in many ways, gradually building relationships between brands and customers. This paradigm shift poses an enormous challenge in terms of the optimal response to new consumption habits. This is where the challenge of offering customers something different comes in, and it is in which we create a web application that allows you to develop any type of product adapted to the needs of your consumers, and best of all, it is completely free.

This project has changed the way of customizing shoes, since it is not done in person, but online in real time, with an interactive design and without restrictions for the end customer. As it also decentralizes the different places that the company can reach in the country, it is a new and innovative idea in our country, it will help

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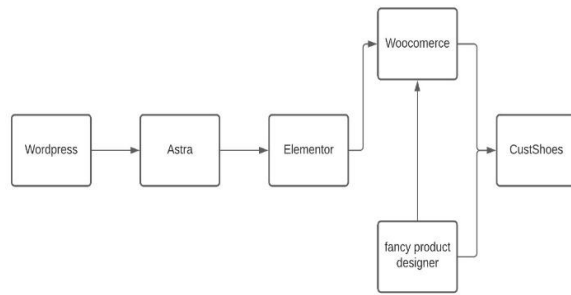


Figure 1: Design of the "CustShoes" store

customers customize shoes for future online purchases, greatly improve customer satisfaction with customer-designed styles. Several processes were carried out to create a flow in which the product is sold to the customer and meets their expectations such as: product choice, creation, publication, personalization, Check-out and as an end point the shipment of footwear.

0.1 COMPOSITION OF THE ONLINE STORE "CUSTSHOES"

The "CustShoes" store uses WordPress as a data manager. Elementor as a page builder and Astra as a compatible theme. WooCommerce as a plugin that supports the development of the online store, Fancy Product Designer as a plugin integrated into WooCommerce to work with SVG, PNG images. For product customization. The design of the "CustShoes" software is shown in Figure 1.

Through WooCommerce you can make sales by receiving as data the image of the product with the color codes, texts, and material to be used and then exporting and designing it manually.

0.2 METHODOLOGY

In the present study it is analytical qualitative since a survey and general analysis was carried out to be able to reach the particular and define whether or not footwear will be accepted and analytical since in the This research was an analysis of the value proposition delivered and ensure the constant improvement of the service experience of users, with the aim of Inquire about their perceptions and the level of satisfaction regarding the different services, sales channels, prices, attributes when acquiring personalized footwear.

This is how during the development of the application software, the Agile methodology was used since they are management models that can be applied within the business management strategy whose Utility is to deliver more value for the client, without losing quality and reducing the time needed to complete the project.

1 COMPOSITION OF THE ONLINE STORE "CUSTSHOES"

1.1 Online store add-ons

Online footwear purchases have significant potential and possibilities for growth. That is, the analysis of market trends and estimates show that the global footwear market will grow in both traditional

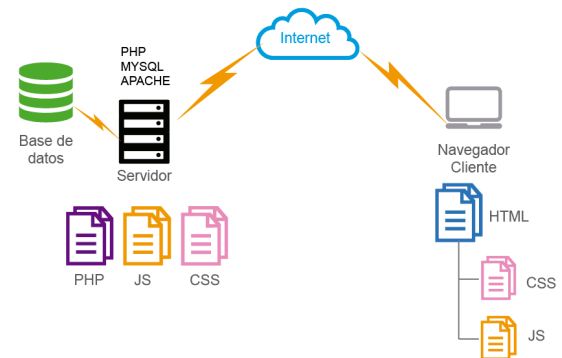


Figure 2: WordPress data structure

and digital channels. They will increase accordingly in both sales channels. Due to the role and present and future importance of e-commerce for the purchase of footwear, to better understand the preferences of consumers for this production different age groups. [7]

Having as a basic concept of the Agile methodology, a structure was created which we would use within the project as: database managers, elements, web page designs and components.

WordPress is a web content management system (CMS or content management system) that allows you to publish content to the web easily. He is currently very popular and has been the absolute leader in website creation for many years. It is an open-source software, which serves to democratize the web, and not only depends on programmers and highly technical staff. This CMS is divided into three sections: core, themes, and plugins. See Figure 2. Orit optimize to the maximum and gives the use of plugins that are cataloged as an aid to the positioning following certain criteria (SEO or Search Engine Optimization) that has been considered of interest to search engines. [8]

In this project, WordPress has been used as a data manager. Elementor as website builder, Astra as theme designer. WooCommerce as a plugin that supports the development of the online store, Fancy Product Designer as a plugin integrated into WooCommerce to work with SVG, PNG images. For product customization. Fancy Product Designer is an integrated plugin that allows you to design and customize any type of product. The functions, features and user interface of Fancy Product Designer are developed to bring together everything you might need, to design any type of product. [7]

As you can see in Figure 3, a Plugin is a piece of code that increases the functionality of WordPress, in other words, an extension. From these you can create all kinds of web pages. A plugin can be used to create an online store as in the case of WooCommerce or simply add a custom option to the WordPress settings. [9]

As shown in Figure 4, Elementor is an integrated plug-in that allows you to create websites, its operation is very simplified and adapts to any project. Their proposal is to make life easier for programmers and marketers, especially those who have no experience as developers.

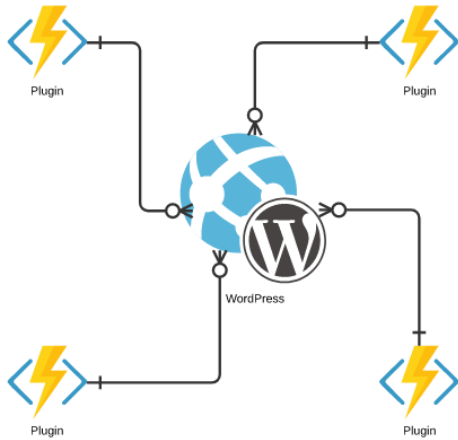


Figure 3: Plugins.



Figure 4: Elementor logo guidelines, <https://elementor.com/logos/#>)

Elementor allows you to customize every page of your website, from publishing to custom post type until the page is editable. This feature gives the ability to customize the specified content. The web front-end is where these plugins operate. [10] [13]

Figure 5 shows that Astra is a theme with which you can create a powerful website, with an attractive and functional design. Within all its strengths are the loading speed, customization, and adaptability with other plugins, within this whole theme allows you to create different pages according to the need for business to implement. [11] [14]

WooCommerce is a tool that allows you to set up an online store, you can see in figure 6, its main functions are the management of different payment methods, taxes, coupons, and inventory reports, to solve the problem of selling online and moving from traditional business to e-commerce. [12] [15]



Figure 5: Astra logo (Brand Assets, <https://wpastra.com/brand-assets/>)



Figure 6: WooCommerce (branding and logo guidelines, <https://woocommerce.com/es-es/brand-and-logo-guidelines/>)

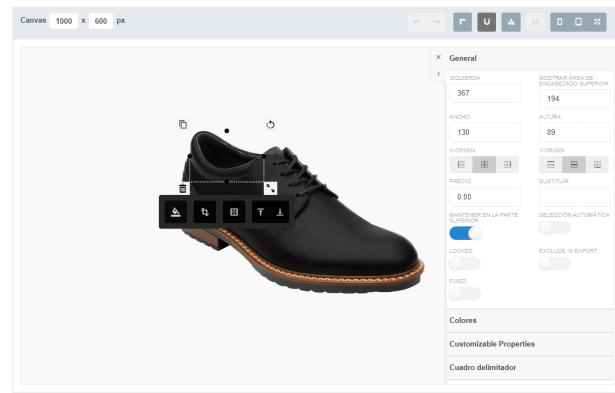


Figure 7: Luxury goods designer

In Figure 7, Fancy Product Designer can be viewed as a built-in add-on that allows you to design and customize any type of product. The functions, features, and user interface of Fancy Product Designer are developed to bring together everything you might need to design any type of product.

Considering that plugins have limited computing power, it is necessary to run or purchase some plugins, as some programs are necessary while running the shoe design process. In order not to affect the speed of the Check-out process, it is necessary to configure all the options implemented in the content manager.

As shown in Figure 1, it reveals the specific flow of an online store, where the model shows the design process of the shoe, using all the installed and configured add-ons. Tutorial of the online purchase process.

The trained model is used to customize a shoe in real time, convert the image into resizable vector shapes (graphics) converting it into SVG files, the best fit of the design is taken as the appropriate result and the degree of complexity is taken as the fit intensity of



Figure 8: Footwear before customization

a single shoe. Figure 7 shows some test examples, where a shoe is designed, adding colors and images to achieve a unique style.

1.2 Shoe customization simulation

The success of organizations depends on the development of valuable relationships that, in addition to attracting consumers, manage to maintain them through continuous attention to their needs and desires.

It should be clear to any undertaking that, if there are no consumers, it is not possible to carry out an exchange activity. [1]

The system is interactive for the customer in the purchase process that begins with the visualization of all the products offered on the site.

The system has many tools to make a customization to the client’s taste, but many of these are not used because the construction of the footwear is very different from that of a garment (chaqueta, polo, t-shirt, etc.). [2]

For example, Figure 8 shows what the shoe looks like before customization.

The tool helps customers create new products based on mockups in which the palette contains a range of colors that are exported using color-coded text. The need to understand what colors mean is that there is a reaction to them, and it is immediate, and colors affect people’s brains more than words. This is because they can be perceived on a symbolic, mental, and emotional level. Figure 9 shows all the colors available in the palette.

Wearing the right type of footwear directly affects the well-being of the foot and indirectly affects the proper functioning of joints such as the spine and neck. In fact, many of the deformities and pathologies of the musculoskeletal and circulatory system of the foot are a consequence of the misuse of inappropriate footwear for long periods of time. [6]

The material of the footwear can be chosen at the beginning of the purchase by selecting from a bar different types of material added by the company that performs the customization.

In the text of the software, you can manually add the shoe material with a maximum of 120 characters, where you can change the color, size, font and scroll within a preset box.

Figure 10 Shoe sizes can be selected based on the customer’s selection in the drop-down menu.

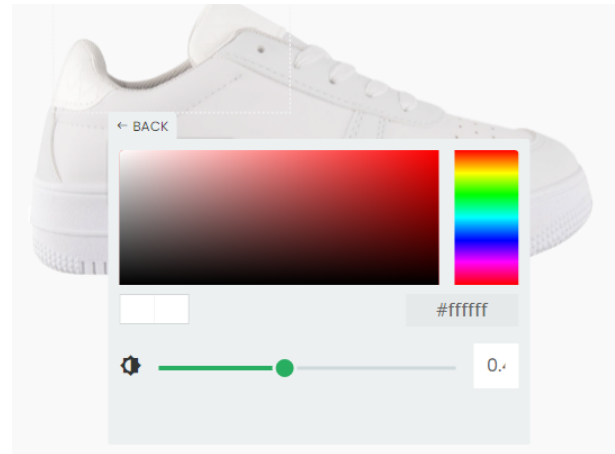


Figure 9: Available shoe colors

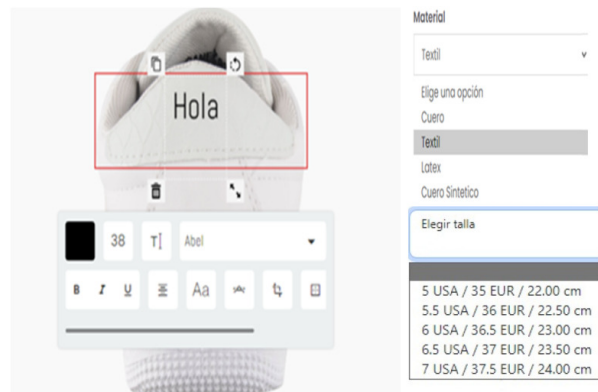


Figure 10: Shoe customization process

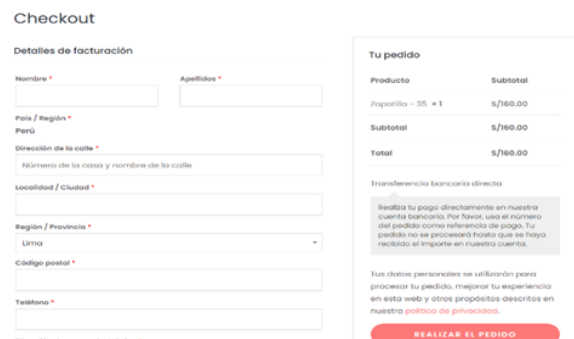


Figure 11: Payment process

When the customer has finished customizing his footwear, he can proceed to the purchase by filling in all his data so that it can be delivered to his home (see figure 11).

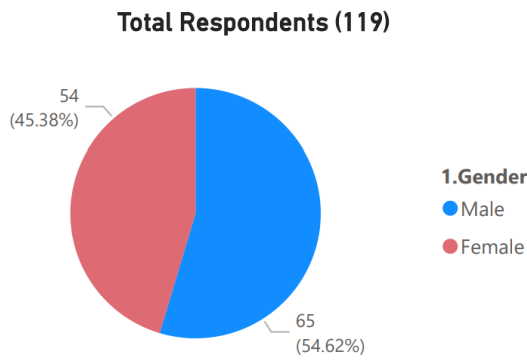


Figure 12: Total respondents

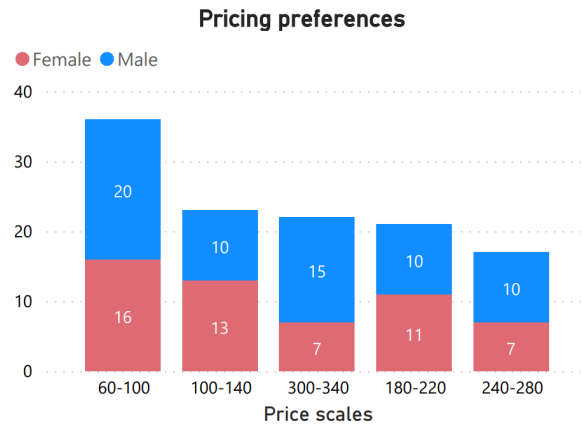


Figure 14: Price preferences

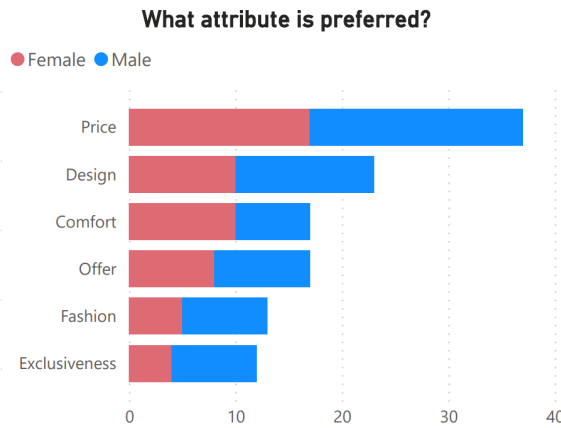


Figure 13: Preferred attribute

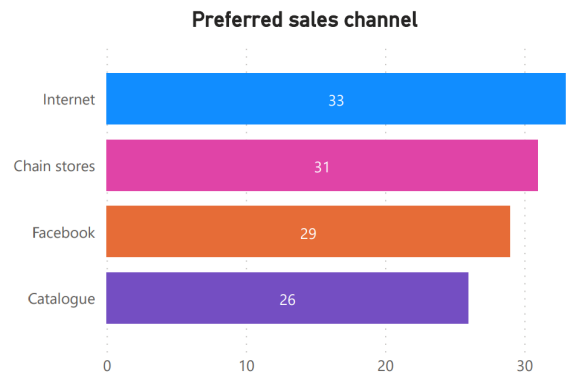


Figure 15: Preferred Sales Channel

2 EXPERIMENT

For the custom-designed interaction model, 119 people have been chosen to experiment with the web system.

The total number of respondents were 119 people of both sexes, with 45.38% men and 54.62% women, as can be seen in Figure 12.

From the results of the survey that can be seen in Figure 13, the preferred attribute for a customer to be satisfied with the purchase of the product is the price, while the least preferred attributes are (Design, Comfort, Offer, Fashion, Exclusivity) respectively. Therefore, for a customer to be satisfied, prices should not be excessive.

The survey results showed that most respondents preferred the price on a scale of 60-100 nuevos soles, while the minority of respondents preferred the price on a scale of 240-280 nuevos soles. See Figure 14

The results obtained shown in Figure 15 were carried out through the survey, which shows that the preferred channel for the sale of footwear is the Internet, while the least preferred is catalog sales.

The results obtained in Figure 16 through the survey, show that, if they used an App to personalize footwear, while the least preferred perhaps they would use the App.

Would you use an app to customize shoes?

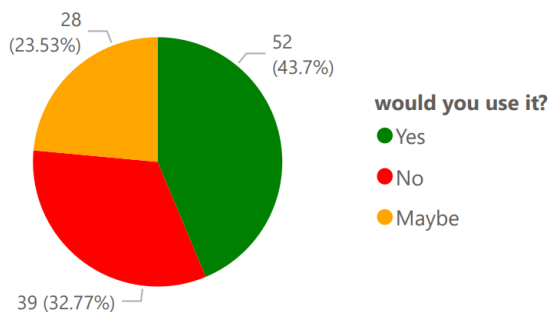


Figure 16: Application preference

Customer satisfaction refers to whether the user is satisfied with the model of the system, i.e., whether he can edit the footwear by adding images, colors correct design, usability and adaptability can meet the user's expectations in a reasonable way (see figure 17).



Figure 17: Customer satisfaction

3 ANALYSIS

After the results of the project work, it can be concluded that the virtual survey carried out had greater acceptance by male staff than female staff, having as a most outstanding attribute the price since it should be less excessive and being accepted the design, comfort, offer, fashion, and exclusivity. The effect caused by the sales channel, it can be said that the most accepted is via the internet by the platforms of chain stores, Facebook, and the App application, being the catalogs the least accepted.

4 CONCLUSION

From all the above, it is concluded that the study carried out by the researchers is of great relevance in the city of Huancayo, where it has been shown that the "CustShoes" software created in this project has had a great impact and satisfaction in obtaining products, both in quality, speed, efficiency, and usability. Where it will continue to be improved with new tools for new applications, designs, and technologies.

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