Concept

Design in Evolution: An Approach to Identity, Sustainability, and Society

Design is a constantly evolving field, reflecting the cultural, technological, and social transformations that define our era. In this issue, the third of our scientific journal, we aim to continue exploring some of the topics that have shaped previous editions, but which present themselves with renewed relevance and urgency.

One of these topics is the impact of new social trends on design, particularly concerning gender concepts. In a world where traditional categories are being questioned and redefined, design has the power to respond to these new realities with more inclusive and adaptive solutions.

Moreover, sustainability remains a central axis in design research and practice. The reuse of materials, eco-design, and the application of biomimetic principles enable the development of strategies that not only reduce environmental impact but also propose innovative approaches inspired by nature.

We have also addressed the question of how cultural identities are present in graphic design in the face of globalisation. Through the analysis of posters, it can be observed that cultures as different as Japanese and Spanish can share spaces without losing their distinctive features.

In this issue, we observe a maturity in the works presented, reflecting the growth and consolidation of our research lines. Additionally, we have included research projects developed in collaboration with the École de Design Nantes Atlantique and the HKU University Utrecht,, further enriching the international perspective of our publications. Within the research line on new realities, it is worth highlighting the attention given to the study of design in housing solutions for the depopulated regions of Spain, a topic of great social and territorial relevance.

We trust that this issue will continue to strengthen ESADA's research lines and contribute to the consolidation of these disciplines within the landscape of design research. We hope that the articles presented here will serve as a source of inspiration, dialogue, and advancement for our academic and professional community.

PhD José Antonio González Casares and
PhD María Dolores Gutiérrez Guerrero.
Editors of the journal

Index

Raquel María Nofuentes Ramírez
Genderless fashion design. Literature Review

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

GENDERLESS FASHION DESIGN
LITERATURE REVIEW

Raquel María Nofuentes Ramírez[(*)]

Abstract. This research examines the intersection between fashion and gender identity, highlighting how "genderless" fashion has evolved in response to emerging social realities that demand greater inclusion and diversity. Contemporary fashion aims to transcend traditional binary gender divisions, thereby facilitating the articulation of individual stylistic expressions beyond predefined male or female categories. The "genderless" movement challenges traditional norms and historical gender expectations by promoting designs that embrace a more fluid and less restrictive approach to clothing, moving away from strict adherence to binary conventions.

The study employs a multidisciplinary approach, encompassing a comprehensive review of literature and articles by various authors concerning gender theories. Academic works, advertising campaigns, and collections from influential designers were critically examined, alongside perceptions and attitudes of different generational cohorts towards gender-free fashion. Moreover, advertising campaigns and fashion trends were analysed and compared to identify recurring patterns and shifts in the acceptance of genderless fashion.

The findings reveal that genderless fashion reflects a societal shift towards the recognition and acceptance of multiple gender identities, driven predominantly by the demand for inclusion and diversity among newer generations. This movement challenges traditional norms within the textile industry through an inclusive approach that enables individuals to express their identity without reliance on gender stereotypes. However, genderless fashion continues to face significant challenges in achieving widespread implementation and acceptance within broader societal frameworks.

Keywords: Genderless fashion, gender diversity, fashion trends.

Resumen. Esta investigación aborda la intersección entre la moda y la identidad de género, destacando cómo la moda "sin género" o genderless ha evolucionado como una respuesta a las nuevas realidades sociales que exigen inclusión y diversidad, eliminando diferencias. La moda ahora busca trascender las divisiones binarias tradicionales de género, permitiendo que las expresiones de estilo individual prevalezcan sobre las categorías predefinidas de masculino o femenino. El movimiento genderless desafía las normas históricas tradicionales y las expectativas de género, con prendas diseñadas hacia un enfoque más fluido y menos restrictivo que no se adhiere estrictamente a las normas de género binarias.

La investigación se ha llevado a cabo mediante un enfoque multidisciplinario que incluye la revisión de literatura y artículos de diversos autores sobre diferentes teorías de género. Se han analizado trabajos académicos, campañas publicitarias y colecciones de diseñadores influyentes, así como las percepciones y actitudes de diversas generaciones hacia la moda sin género. Además, se han estudiado y comparado campañas publicitarias y tendencias de moda para identificar patrones y cambios en la aceptación de la moda genderless.

Se han alcanzado las siguientes conclusiones: la moda sin género refleja un cambio hacia la aceptación de múltiples identidades de género en la sociedad, impulsado por la demanda de inclusión y diversidad de las nuevas generaciones. Esta moda desafía las normas tradicionales de la industria textil mediante un enfoque inclusivo que permite a las personas expresar su identidad sin estereotipos de género. Sin embargo, la moda sin género enfrenta importantes desafíos en su implementación y aceptación por parte de la sociedad en general.

Palabras clave: *Moda sin género, diversidad de genero, tendencia de la moda*

[(*)]**Corresponding author:** raquelnofuentes1n@gmail.com

Raquel María Nofuentes Ramírez
Genderless fashion design. Literature Review

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

1. INTRODUCTION AND OBJECTIVES

1.1. FASHION AND MALE-FEMALE DIFFERENTIATION

Fashion transcends mere clothing; it represents an intangible entity arising from the acceptance of evolving cultural values. As a reflection of the society in which it exists, fashion is deeply influenced by social, political, and cultural transformations, operating as a social phenomenon that permeates all classes (Vives, 2024).

Historically, society has perpetuated the binary notion of gender—male and female—while the fashion industry has similarly upheld a singular beauty standard, epitomised by supermodels. However, a significant proportion of individuals do not identify with traditional male or female fashion offerings (Peña & Piratoba, 2023).

There is no definitive historical moment delineating the differentiation of men's and women's clothing. Early humans covered specific parts of their bodies primarily for protection during activities such as farming or for purposes of ornamentation and seduction (Moreira, 2020). A strong link exists between the construction of appearances—body, clothing, and environment—and the socio-economic and political needs of historical periods. Advances in communication technologies, materials, and textile processes have facilitated changes in the body-clothing relationship. For instance, the notion of women's clothing as inherently associated with the 'female' sex is increasingly challenged by contemporary social realities (Saulquin, 2001, p. 169).

The logic of fashion emerged in the fourteenth century, influenced by technological advancements. Before this period, men's and women's attire primarily consisted of loose, long garments shared by both sexes. However, the development of social hierarchies and civil society, coupled with the influence of the French court in the sixteenth and seventeenth centuries, transformed clothing into a marker of class and gender. Men's attire began to highlight features such as arms and legs, while women's clothing accentuated hips, bellies, and breasts (Sunyé, 2018).

Fashion has traditionally reflected societal norms concerning gender, reinforcing binary distinctions. Women's clothing has historically emphasised waists and hips, while men's garments have promoted broad shoulders and rectangular silhouettes. Skirts have been linked to femininity, while trousers have symbolised masculinity. Even colours have contributed to gender differentiation, with pink historically associated with girls and blue with boys.

In the twentieth century, particularly in recent decades, fashion has embraced movements towards unisex and genderless clothing, challenging traditional norms. Designers are exploring forms that reject binary conventions, creating inclusive styles that prioritise individual expression. Clothing is now viewed as a medium to convey personal identity, transcending gender stereotypes (Moreno, 2023).

In today's information-driven society, bodies remain subjected to ideals of uniformity and thinness, perpetuated by mass culture. Until the 1990s, elongated and distorted body representations dominated fashion advertising. However, these have been replaced by geometric figurines, deemed more functional for design purposes (Suárez et al., 2020). As Moreno (2023) asserts, "genderless fashion is moving towards including creativity and fearlessness in its designs, moving away from the merely pragmatic.".

1.2. CONCEPTS AND ATTITUDES ABOUT GENDER

There are numerous authors who defend gender diversity and gender identities. Concepts and theories that are currently used by fashion firms and designers to support and creategender-neutral fashion.

As Pérez-Sánchez (2022) states, there are a multitude of authors who defend gender diversities and gender identities. Simone de Beauvoir says, 'You are not born a woman, you are made': being a woman is not the same as being born biologically female. John Money, 'Gender role is everything a person says or does to manifest their status as male or female. And gender identity is the private experience of the gender role'. Robert Stoller considers that intersex people often possess 'internal' gender identities that do not match the external manifestations of their sex. Judith Butler says that being a man or a woman is not a stable material state, but a kind of repeated social performance that reinforces hierarchical power relations.

Among all the theories that have emerged from this debate, we highlight that of Robert Stoller, who separates biological sex from social gender in his book 'Sex and Gender', in which he alludes to the fact that sex refers to the physiological and biological traits of being male and female, and gender to the social construction of sexual differences. Sex is inherited and gender is acquired through cultural learning, opening the way to the reflection and constitution of the identities of men and women (Molina, 2010).

Those who criticise the binary gender system, because it inevitably leads to a classification or pigeonholing in society, in which there are only women and men, and to behave in a feminine or masculine way. Defended by the Spanish activist Andrea Speck (genderqueer) registered in the Foreigners' Register as a person of indeterminate gender and recognised as such in her own country of origin (Germany), which demands the recognition of non-binary identities that were left out of the trans law. And it fights for the administrations to admit the genderqueer option in the immigration forms (Gallego, 2023).

Those that presuppose heterosexuality and hetero-normativity, defending the 'natural sex', which revolves around the roles that these represent, perpetuating the hierarchical, homophobic and transphobic model of society where deviation from the norm is condemned. It is evident that men and women are endowed with different sexual apparatuses, specific genital organs assigned to specific sexual functions, and around these specific social roles are assumed (Heredia, 1982).

Another of those put forward is Judith Butler's performative theory of gender, referring to the fact that gender is not something you have, but something you do. The gender performativity theory of the American philosopher Judith Butler was proposed in the 1990s in the context of contemporary feminist theories and movements, and defines gender as a phenomenon that is constantly reproduced and is governed by a series of established norms (Gómez, 2022).
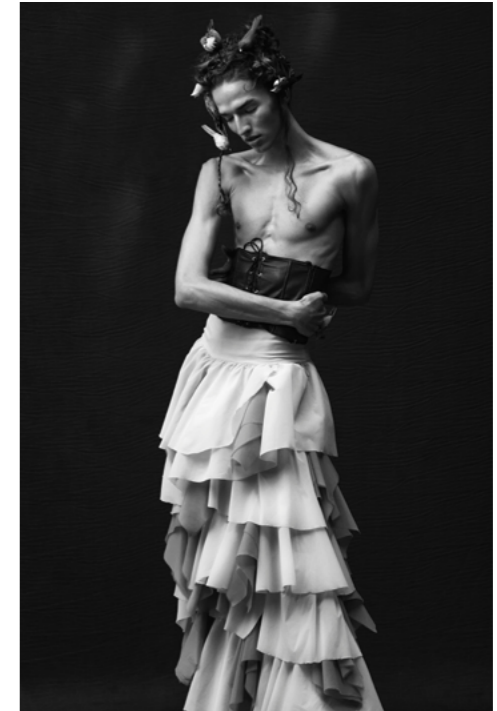
Image 1: Man wearing corset and skirt (Zuleta, 2023)

Acosta (2010) provides an analysis of 'Judith Butler and the gender performativity theory' proposes that gender is not something innate or biological, but something that is realised through performative acts that reflect cultural norms. This idea questions and seeks to dismantle traditional conceptions of gender and sexuality. Judith Butler challenges traditional conceptions of gender, promoting a more inclusive and less restrictive view of human identity.

As Benitez Colmenares (2023) points out, there are a multitude of gender identities, among which we can highlight: genderless people, also known as agender or non-gender; it designates all those who do not identify with any particular gender. Some define themselves as gender neutral, gender white or gender free. Bigender, which is often confused with bisexuality, although, someone who identifies as bigender is sympathetic to and comfortable combining both male and female gender identities. In this sense, they may perceive themselves as male, female, or both, regardless of the sex assigned to them at birth. In other words, you have two genders.

Raquel María Nofuentes Ramírez
Genderless fashion design. Literature Review

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

The fluid gender goes through temporary, sporadic or permanent transitions through different genres. The number of genders with which it identifies varies from case to case. It is possible to stick to the male/female binarism or to explore other possibilities. A transition can be made without a specific reason or, on the contrary, depending on moods or interactions with the environment.

Image 2: Judith Butler. (Taverna, 2018)

As Benitez Colmenares (2023) points out, there are a multitude of gender identities, among which we can highlight: genderless people, also known as agender or non-gender; it designates all those who do not identify with any particular gender. Some define themselves as gender neutral, gender white or gender free. Bigender, which is often confused with bisexuality, although, someone who identifies as bigender is sympathetic to and comfortable combining both male and female gender identities. In this sense, they may perceive themselves as male, female, or both, regardless of the sex assigned to them at birth. In other words, you have two genders.

The fluid genre goes through temporary, sporadic or permanent transitions through different genres. The number of genders with which it identifies varies from case to case. It is possible to stick to the male/female binarism or to explore other possibilities. Transition can be made without a specific reason or, on the contrary, depending on moods or interactions with the environment.

1.3. RESEARCH ON GENDERLESS FASHION

Fashion is a form of self-expression that evolves rapidly over time, including a wide variety of styles and trends. In recent years, there has been an increase in awareness and acceptance of transgender and cisgender communities around the world, influencing all aspects of society and, of course, fashion.

Genderless fashion proposes the erasure of gender roles in clothing, countering one of the main characteristics that demarcate the emergence of the fashion phenomenon in modern Western society: the segmentation of clothing according to gender. In this sense, we can situate genderless fashion as a kind of transgression of fashion itself, and from this point of view, as an anti-fashion. However, as it is increasingly present in brand collections and in the collections of designers around the world, it is also characterised as a fashion trend (Ziezkowski, 2023).

Genderless fashion revolutionises the industry gender fluid, genderless, genderless, transgender, unisex. There are many terms to define the concept that has emerged in recent years in the fashion world, in which it has managed to consolidate its presence, and which has revolutionised the industry's codes. From unisex collections to fashion shows that combine the offer for men and women, the luxury industry is undergoing a true revolution. It is a fundamental movement that can no longer be considered a simple epiphenomenon. Gender lines, with little definition, where only the size and a few details in the cut make the difference, are characteristic of our time, as demonstrated by the enthusiasm of the many new brands that have been born in this movement (Muret, 2016).

The interplay between fashion, gender and feminism from the nineteenth to the twenty-first centuries in the West addresses how fashion and aesthetic demands are reflected in gender norms and their epochs, influencing the social construction of gender and women in particular. Fashion is presented as an ambiguous force that has served both to reinforce structures of power and oppression and to offer means of expression and resistance. It, like gender, is a social construct that is being reclaimed and redefined by those who have historically been most oppressed by its norms. The impact of genderless fashion is a promising alternative to challenge the dominant patriarchal system (Manuel & Art, 2022).

According to the Spain 2000 Youth Report by the Injuve institute, one in four young Spaniards does not identify completely with either of the two traditional genders, creating a vast array of in-between greys in which the traditional gender binarism is broken and new dynamics, new styles and new ways of conceiving fashion are created (Benito García et al., 2022).

As Wightman-Stone (2023) writes, Generation Z, comprising young people born between 1994 and 2010, shows a strong interest in inclusivity and gender equality in the fashion industry. A study conducted by UniDays reveals that a large majority of these young people value positively that brands offer gender-neutral clothing and feature diverse groups in their campaigns. Eighty-seven percent of respondents support the idea that people should be able to wear what they want without facing stigmas related to their gender identity. However, many fashion brands use inclusive marketing only in a tokenistic way, without supporting broader inclusion initiatives.

Genderless fashion, also called gender-neutral or unisex, comes from the agender term 'agender', referring to an identity that is characterised by the absence of gender. As Bardey et al. (2020) point out in a study on unisex fashion, 'there are as many different interpretations of unisex clothing as there are words to describe it: "agender", "androgynous", "genderless", "unisex", to name but a few'. The lack of a unified definition of unisex leaves room for theoretical discussion. While designers focus on understanding the social context of unisex clothing consumers, consumers seem to consider mainly style and fashion aesthetics.

People who define themselves as agender do not identify with being male or female and may feel that their gender identity lies somewhere outside the conventional gender division of society. Some agender people may prefer to use neutral pronouns such as 'elle' or 'elle/elle' instead of 'he' or 'she'.

Genderless fashion' is considered to be a trend that is generating great popularity in society and the fashion industry, as more and more people and consumers are looking for clothes that are not limited by gender stereotypes, so that with this style everyone can dress as they want, according to their tastes and personality without having to worry about whether their clothes are "appropriate" for their gender or not.

A key figure in Gender fashion is acclaimed writer and speaker ALOK, who has created the #DeGenderFashion movement, aimed at deconstructing the gender norms of the fashion industry, a community that is going strong by broadcasting its ideas and giving visibility to this collective through digital platforms. All of this in response to the fashion industry and the development of inclusive product lines designed and marketed for anyone to wear and feel good in. Although many of these collections have often resorted to wide, shapeless silhouettes, with neutral colours reminiscent of masculine styles (Fashion United, 2023).

Image 3: Me. Rivera and De la Torre (2018)

Raquel María Nofuentes Ramírez
Genderless fashion design. Literature Review

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

Although the genderless fashion market is currently a binary market, as Pinto & Franca (2019) point out, it continues to reproduce gender stereotypes and patterns from a binary perspective. Traditional gender structures continue to influence how fashion products are marketed and perceived. Although fashion brands present themselves as progressive towards this idea, many others continue to reinforce the binary divide by designing and marketing 'genderless' products, which do not actually challenge existing norms in a meaningful way.

Gender neutrality becomes a reality in fashion as Menkes (2018) points out, sharing a blurred view of masculine and feminine is now the new norm for fashion designers. 'The concept of 'gender neutral' has grown rapidly in the new millennium, with young Asian customers leading the pack.'

Society is changing rapidly, with Kopf (2022) indicating that young people in the United States are much more comfortable than previous generations with people who do not identify as either male or female.

Akdemir (2018), in his study 'deconstructing gender stereotypes through fashion', indicates that today's fashion revolutionaries are not interested in objectifying men and women, but in blurring the masculine/feminine divide and eliminating those labels, giving gender fluidity to fashion. 'From the catwalks to the high streets, the emergence of genderless fashion is slowly beginning to distort the line between traditional gender roles in the industry.

1.4. OBJECTIVE

The objectives of this research are to analyse the concept and evolution of genderless fashion in today's society, the perception of gender in society and the impact of this concept on the fashion industry.

The specific objectives of this research are:
- To investigate the history and origins of fashion as a representation of gender rules, highlighting how fashion has evolved towards broader inclusivity.
- To analyse some of the theories and principles about gender that have helped the acceptance of genderless fashion.

- Identify some current genderless fashion collections highlighting their characteristics.
- Analyse the social acceptance of genderless fashion, analysing the positions of the younger generations.
- Analyse the challenges and possibilities that genderless fashion currently faces in terms of its acceptance and establishment in society.

2. METHODOLOGY

Several phases have been followed to develop the project:

Theoretical research and contextualisation of the term genderless, investigating the construction of gender and the role the term has played in the construction of gender identities. Review of gender theories and their relationship to fashion. This study included a review of how the concept of gender has historically influenced the world of fashion and how it is currently moving towards a more inclusive approach. Here we were also able to conduct market research, understanding both the current demand and supply of gender-neutral fashion.

Research of the current market, carrying out an analysis of the current fashion situation, analysing firms, brands and designers that are adopting the term genderless when designing their fashion collections. This study facilitated an understanding of the rising trends and demand from young consumers, in particular Generation Z, who are leading the way in embracing this fashion, identifying the opportunities and challenges of the current fashion market.

The study presents an examination of how genderless fashion is currently reacting in a society that requires more inclusiveness and diversity, challenging the traditional and conventional binary gender separation in the fashion sector.

The key findings of the study are as follows:

Genderless fashion has emerged to facilitate personal expression without pre-established distinctions of male or female, promoting a more fluid view of gender identity through clothing. This movement challenges the historical rules of masculine and feminine difference and encourages an aesthetic focused on individual style.

The study was based on a review of academic articles and studies, advertising campaigns, designer collections and attitudes towards genderless fashion, as well as trends that reflect the current shift towards the acceptance of genderless fashion.

3. CONCLUSIONS

The current trend towards genderless fashion reflects a social transformation towards acceptance of diverse gender identities. This is spurred by the demands for inclusion and diversity of younger generations, who perceive fashion as a vehicle to manifest their identity without gender stereotypes.

However, despite increased interest from brands and designers, the implementation of genderless fashion faces considerable challenges, particularly in public perception, which is still governed by conventional gender regulations. There is criticism of certain brands that employ 'inclusive marketing' solely as a symbolic tactic without showing a real commitment to gender equality.

Although genderless fashion promotes inclusivity, it faces difficulties in its acceptance and implementation, as it sometimes still reproduces conventional gender norms. The study finds that genderless fashion symbolises not only a fashion trend, but also a moment of collective reflection on the diversity and complexity of human identity.

This study presents genderless fashion as a growing phenomenon that, despite challenges, is becoming increasingly common in the industry and evidences transformations in the perception and representation of gender identity.

4. BIBLIOGRAPHY

- Akdemir, N. (2018). Deconstruction of Gender Stereotypes Through Fashion. *European Journal Of Social Science Education And Research*, 5(2), 185. https://doi.org/10.26417/ejser.v5i2.p185-190
- Bardey, A., Achumba-Wöllenstein, J., & Chiu, P. (2020). Exploring the Third Gender in Fashion: From Consumers' Behavior to Designers' Approach towards unisex clothing. *Fashion Practice*, 12(3), 421-439. https://doi.org/10.1080/17569370.2020.1816317
- Benitez Colmenares, J. J. (2023, 6 noviembre). *¿Cuántos tipos de identidad de género existen?*. Mejor Con Salud. https://mejorconsalud.as.com/tipos-identidad-genero-existen/
- Benito García, M., Gómez Alcalde, M., Muñiz-Alique Jiménez, S., Sánchez Martínez, F.J., (2022, 3 mayo). GENDERLESS: *cuando la moda y el género no van de la mano - Generación dos puntos cero*. Generación Dos Punto Cero. https://generaciondospuntocero.com/genderless-moda-sin-genero/
- Duque Acosta, C. A. (2010). Judith Butler y la teoría de la performatividad de género. *Revista de educación y pensamiento*, (17), 85-95.
- Flügel, J. C. (2020). *Psicología del vestido*. Melusina
- Gallego, M. (2023). *Andrea Speck: "El sistema binario de género es un trauma histórico y colectivo"*. Pikara Magazine. https://www.pikaramagazine.com/2023/05/el-sistema-binario-de-genero-es-un-trauma-historico-y-colectivo/
- Goldstein, D., Gavino, N. (2023b, agosto 24). Breaking the Binary: Fashion's Next Frontier. FashionUnited. https://fashionunited.uk/news/fashion/breaking-the-binary-fashions-next-frontier/2022040462428
- Gómez Varela, C. (2022, 20 octubre). *Análisis y reflexiones sobre moda, género y feminismo entre los siglos XIX y XXI en Occidente*. http://hdl.handle.net/10234/200675
- Heredia, E. B. (1982). La diferenciación masculino-femenino: Un mito y una realidad. *Estudios de Psicología*, 3(10), 113-125. https://doi.org/10.1080/02109395.1982.10821311
- Kopf, D. (2022, 21 julio). *Generation Z's views on gender are what set it apart in the US*. Quartz. https://qz.com/1528752/generation-zs-views-on-gender-set-it-apart-in-us
- Martínez, J. (2023, 15 noviembre). Desigual lanza su primera colección íntegramente "genderless", diseñada por el israelí Hed Mayner. *FashionUnited*. https://fashionunited.es/noticias/moda/desigual-lanza-su-primera-coleccion-integramente-genderless-disenada-por-el-israeli-hed-mayner/2023111541969
- Menkes, S. (2018, 13 enero). *Suzy Menkes finds a blurred vision of masculine and feminine is now the new norm at Pitti Uomo*. British Vogue. https://www.vogue.co.uk/article/gender-neutrality-becomes-fashion-reality
- Molina Brizuela, Y. (2010). Teoría de género. *Contribuciones a las Ciencias Sociales, 10*. www.eumed.net/rev/cccss/10/
- Moreira, Y. L. (2020). La simbología del traje

Raquel María Nofuentes Ramírez
Genderless fashion design. Literature Review

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

sastre femenino y el discurso de emancipación femenina. *Cuadernos del Centro de Estudios En Diseño y Comunicación. Ensayos, 100.* https://doi.org/10.18682/cdc.vi100.3985

- Moreno, C. (2023). Genderless fashion design: Analysis of the collections from the fashion weeks of Copenhagen, New york, London, Milan and Paris. Case: Autumn-winter season 2023. *Concept: Revista de investigación e innovación en diseño,* (2), 55-64.

- Muret, D. & Hernández, S. (2016, agosto 28). *La moda "sin género" revoluciona la industria.* FashionNetwork.com. https://es.fashionnetwork.com/news/La-moda-sin-genero-revoluciona-la-industria,726104.html

- Peña Pinzón, J.J & Piratoba Rodríguez, L.D. (2023). *¿Es realmente la moda inclusiva y diversa?* [Trabajo Fin de Grado, Universidad ECCI] https://repositorio.ecci.edu.co/handle/001/3623?show=full

- Pérez-Sánchez, A. (2022). revisión de críticas a la teoría de la identidad de género. *Temas de psicoanálisis, 24.*

- Pinto C., & Franca, D. (2019). Genderless Fashion: A (Still) binary Market. *Latin American Business Review, 20*(3), 269-294. https://doi.org/10.1080/10978526.2019.1641412

- Saulquin, S. (2011). El cuerpo como metáfora. *Designis, 1,* 169-185. https://core.ac.uk/download/pdf/210512401.pdf

- Suárez, V. et al. (2020). *Mola : Seminario de Materialidades y nuevos Paradigmas, Córdoba 2019.* http://hdl.handle.net/11086/15118

- Sunyé, T. (2018). El cuerpo vestido en la sociedad occidental. *Temas de psicoanálisis, 16.* https://www.temasdepsicoanalisis.org/2018/07/13/el-cuerpo-vestido-en-la-sociedad-occidental/

- Vives, A. (2024). El vestido y la Moda 2. https://adelavives.com/es/articulos/consideraciones-generales-el-vestido-y-la-moda-2

- Wightman-Stone, D. (2023, 24 agosto). *Los consumidores de la generación Z quieren una mayor igualdad de género e inclusión en la moda.* FashionUnited. https://fashionunited.es/noticias/moda/los-consumidores-de-la-generacion-z-quieren-una-mayor-igualdad-de-genero-e-inclusion-en-la-moda/2022030438019

- Ziezkowski, A. (2023). Genderless: ¿tendencia de moda o antimoda? *Cuadernos del Centro de Estudios En Diseño y Comunicación. Ensayos, 196.* 115-127 https://doi.org/10.18682/cdc.vi196.9652

IMAGES

- Rivera and De la Torre (2018). Me. https://www.flickr.com/photos/xellif/26482255517/in/photostream/

- Taverna, M (2018) Image of Judith Butler at CCCB 2018. https://upload.wikimedia.org/wikipedia/commons/4/4a/Judith_Butler_al_CCCB_2018_%28cropped%29.jpg

- Zuleta, T (2023). Man wearing corset and skirt. https://www.pexels.com/photo/black-and-white-photo-of-man-wearing-corset-and-long-skirt-15852465/

Carmen González Díaz
Illustration and cultural identities. Poster analysis for manga, anime and Japanese festivals.
Cases: Spain 2020 to 2024

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

ILLUSTRATION AND CULTURAL IDENTITIES
POSTER ANALYSIS FOR MANGA, ANIME AND JAPANESE FESTIVALS.
CASES: SPAIN 2020 TO 2024

Carmen González Díaz[*]

Abstract. This project presents an analytical proposal in the field of illustration with the aim of studying the posters of manga fairs in Spain, which promote Japanese culture and sell Japanese products. This study examines how illustrations are adapted for the Spanish audience by analyzing the posters of the 40 most recent fairs held in Spain about Japanese and manga culture. This allows us to determine the presence of the identifying elements of Spanish culture, such as the use of flags or monuments, among others, and to affirm that despite globalisation, the characteristic features of each region continue to be extolled in advertising. The methodology applied is known as content analysis based on a quantitative approach.

Keywords: Cultural identities, graphic design, content analysis, Illustration, anime, globalisation, posters.

Resumen. Este proyecto presenta una propuesta de análisis en el campo de la ilustración con el objetivo de estudiar los carteles de las ferias del manga en España, que promocionan la cultura japonesa y venden productos japoneses. Observaremos cómo se adaptan las ilustraciones al público español analizando los carteles de las 40 últimas ferias celebradas en España sobre cultura japonesa y manga. Esto nos permite determinar la presencia de los elementos identificativos de la cultura española, como el uso de banderas o monumentos, entre otros, y afirmar que, a pesar de la globalización, se siguen ensalzando en la publicidad los rasgos característicos de cada región. La metodología aplicada es la denominada análisis de contenido basada en un enfoque cuantitativo.

Palabras clave: *Identidades culturales, diseño gráfico, análisis de contenidos, ilustración, anime, globalización, carteles.*

Carmen González Díaz
Illustration and cultural identities. Poster analysis for manga, anime and Japanese festivals.
Cases: Spain 2020 to 2024

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

1. INTRODUCTION AND OBJECTIVES

Manga and its aesthetics are widely consumed and the cultural identities of Japan can be clearly seen in them. The success of this phenomenon is reflected in the number of anime and manga events held in Spain.

Cultural globalisation can lead to the loss of cultural identities, however, posters dedicated to manga and Japanese culture have been observed which, when being dedicated to a Spanish audience, presented specific elements to the Spanish city where the event was to be held.

This work is dedicated to determining the presence of these features in Japanese-centered posters dedicated to a Spanish audience.

The main objective of this proposal is
- To analyse the presence of Spanish cultural identity through visual language in the posters of manga and Japanese culture festivals.

The secondary objectives are:
- To study how the value of cultural identity is transmitted through design in a context of globalisation.
- To make a proposal for a quantitative analysis of the presence of cultural identities in graphic design, specifically, posters.

1.1. HYPOTHESIS

- Despite globalisation, the cultural identities of Spain and Japan can be seen in the posters.
- The posters of manga festivals held in Spain feature Spanish elements despite selling and promoting Japanese. The elements of the host country/city are used as an advertising gimmick.
- The elements used to convey a culture are monuments and landscapes.

2. METHODOLOGY

There is no established methodology for the analysis of posters; traditionally, in this type of study, procedures adapted to the objectives of each research project have been used (Tabuenca Bengoa González, Díez and Puebla Martínez, 2020).

In order to respond to the objectives set out in our study, Krippendorff's (1990) content analysis technique was used, which is defined as a method designed to formulate reprodu-

Image 1: Poster Manga Fair 27 Barcelona, Dalmau (2021)

cible and valid inferences from specific data, applicable to their context. It is useful for testing the validity of hypotheses.

On the other hand, Hernández Sampieri (2004) mentions two different aspects for a correct content analysis: quantitative and qualitative. In our case, the quantitative approach is chosen, as this method involves the collection and analysis of data to answer the research questions, in addition to establishing a count and the use of statistics to accurately identify patterns of behavior in a population.

He adds that quantification is done by assigning numbers to the variables to code the different possibilities. For this purpose, the following phases are generated in the research process:

1. Observation of a given phenomenon.
2. Formulation of hypotheses as a starting point.
3. Hypothesis testing by analysis of a justified sample.
4. Assessment of the veracity of the hypotheses through the study of the results.
5. Proposal of observations and formulation of conclusions.

In order to develop our research we applied this methodology to a representative sample or set of elements. This corpus was made up of posters from manga fairs and other events related to Japanese culture. Specifically, they are the forty most recent posters of these events held in Spain up to February 2024. To obtain the posters, we went to the website Listado-manga.es.

COMPOSITION OF THE SAMPLE

XVIII Japan Weekend Bilbao
24 Febrero 2024

Winter Freak! 2024 Murcia
24-25 Febrero 2024

MangaFest Mérida 2024
24-25 Febrero 2024

27 Salón Manga de Jerez
24-25 Febrero 2024

XXVIII Japand Weekend Madrid
17-18 Febrero 2024

ExpOtaku Logroño 2024
9-11 Febrero 2024

COMPOSITION OF THE SAMPLE

Japan Tour - Zafra
27 - 28 Diciembre 2023

MangaFest Sevilla
8 - 10 Diciembre 2023

29 Manga Barcelona
7 - 10 Diciembre 2023

XXXI Japan Weekend Valencia
18 - 19 Noviembre 2023

IX Salón del Cómic, Manga y Juegos de
Estrategia de Pizarra

Japan Tour Espartinas
11 - 12 Noviembre 2023

COMPOSITION OF THE SAMPLE

XV Edición del Salón del Manga y
cultura Japonesa de Murcia
10 - 12 Nov. 2023

XIX Japan Weekend Barcelona
4 - 5 Noviembre 2023

Mangafest Jaén
4 - 5 Noviembre 2023

Japón en Granada
3 -12 Noviembre 2023

ExpOtaku Granada
27 - 29 Octubre 2023

V Japan Weekend A Coruña
21 Octubre 2023

Carmen González Díaz
Illustration and cultural identities. Poster analysis for manga, anime and Japanese festivals.
Cases: Spain 2020 to 2024

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

COMPOSITION OF THE SAMPLE

Albanime 4Players
21 - 22 Octubre 2023

Girocòmic
14 - 15 Octubre 2023

XVII Japan Weekend Bilbao
7 Octubre 2023

MangaFest Jerez
7 - 8 Octubre 2023

XXVII Japan Weekend Madrid
23 - 24 Septiembre 2023

Mangafest Almería
23 - 24 Septiembre 2023

Ultimate Manga
15 - 17 Septiembre 2023

BubblePop Festival
1 - 2 Julio 2023

MangaFest Sevilla Summer Edition
24 - 25 Junio 2023

Madrid Otaku
10 - 11 Junio 2023

26 Salón Manga de Jerez
3 - 4 Junio 2023

XXX Japan Weekend Valencia
6 - 7 Mayo 2023

COMPOSITION OF THE SAMPLE

Salón Manga de Chiclana
29 - 30 Abril 2023

Toledo Matsuri
22 - 23 Abril 2023

IX Salón del Manga y la Cultura
Japonesa de Cartagena
22 - 23 Abril 2023

II Sakura Alfarnate
16 Abril 2023

11º Salón del Manga y la Cultura
Japonesa de Alicante

VII Festival Manga de Cádiz
14 - 16 Abril 2023

COMPOSITION OF THE SAMPLE

Salón del Manga Algeciras
14 - 16 Abril 2023

Albanime 2023 Albacete
1 - 2 Abril 2023

IV Japan Weekend A Coruña
25 - 26 Marzo 2023

Japan Tour - Alcalá de Guadaíra
24 - 26 Marzo 2023

2.1. ANALYSIS SHEET

When selecting the items for the analysis sheet, we found the framework used by Ripoll (2022) to be helpful. In particular, we used as a model his way of organising the represented themes (narrative axes), aesthetic styles, and represented objects. The following shows the final analysis sheet matrix.

ANALYSIS SHEET

Name of the event:

Ilustrator:

Place:

Date:

Organising company:

IDENTIFYING SYMBOLS

Element of the Spanish city

Element of Japanese culture

Element of another culture
(South Korea, Taiwan...)

Universal or generic element

VISUAL LANGUAGE

PRESENCE OF MONUMENTS

Type of monument	Especifiations
Temple-Cathedral	
Castle	
Exhibition and events pavilion	
Tower	
Flats	
Bridge	
Arc	
Square	
Park	

LANDSCAPE ELEMENTS

Landscape Elements	Especifications
Sky	
Mountain	
Sea	
Lake	
River	
Urban landscape	
Home environment	
Fireworks	
Market stalls	

BOTANICS

Elementos Vegetales	Especifications
Tree	
Log	
Flower	
Petal	
Leaf	

VEXILOLOGY

Type	Especifications
Flag	
Coat of arms	
Heraldic	
Symbology	
Standard	

GASTRONOMY

Type of food	Especifications
Meals	
Drinks	

ANIMALS

Type	Especifications
Cat	
Dog	
Bear	
Horse	
Crane	
Turtle	
Butterfly	
Fish	
Octopus	
Snail	
Jellyfish	
Coral	
Others	

CHARACTERS

Origin	Especifications
Manga	
Anime (serie)	
Videogame	
Film	
Artist´s original characters	
Event´s original characters	
Legendary character	
Historical figure	
Pet	
Others	

JAPANESE TECHNOLOGY

	Especifications
Robot	
Android	
Cyborg	

VIDEOGAMES OR SERIES ELEMENTS

Origin	Especifications
Manga	
Anime (serie)	
Videogame	
Film	
Book	
Other	

CLOTHING

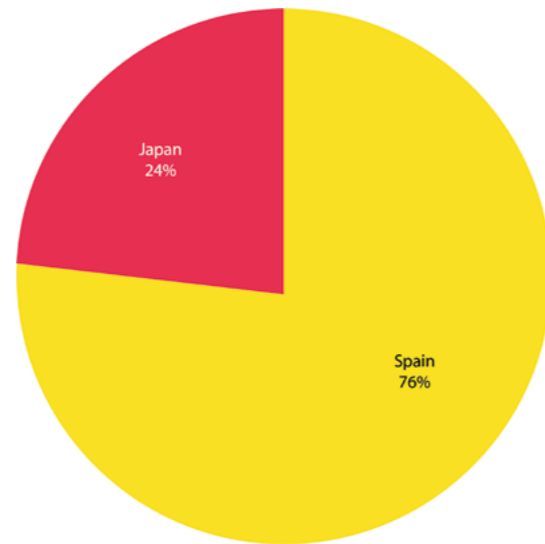| Clothing	Especifications
Kimono	
Cosplay	
Futuristic robot-mecha suit	
School uniform	
Spanish regional costume	
Karate suit	
Accesories	
Other	

3. RESULTS

Image 2: Monuments by Country. Own Elaboration
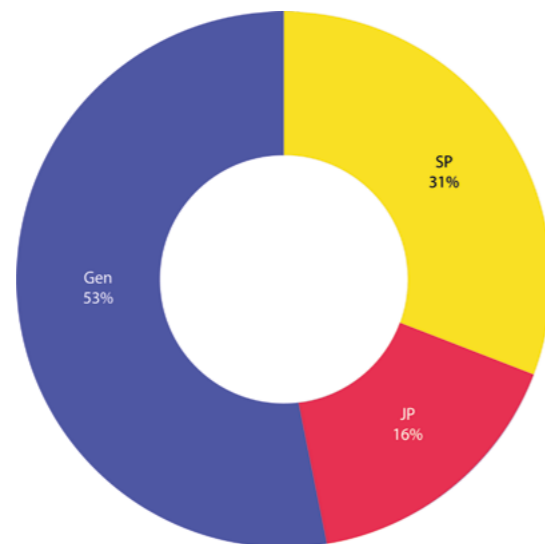
Image 3: Landscape elements by country. Own Elaboration
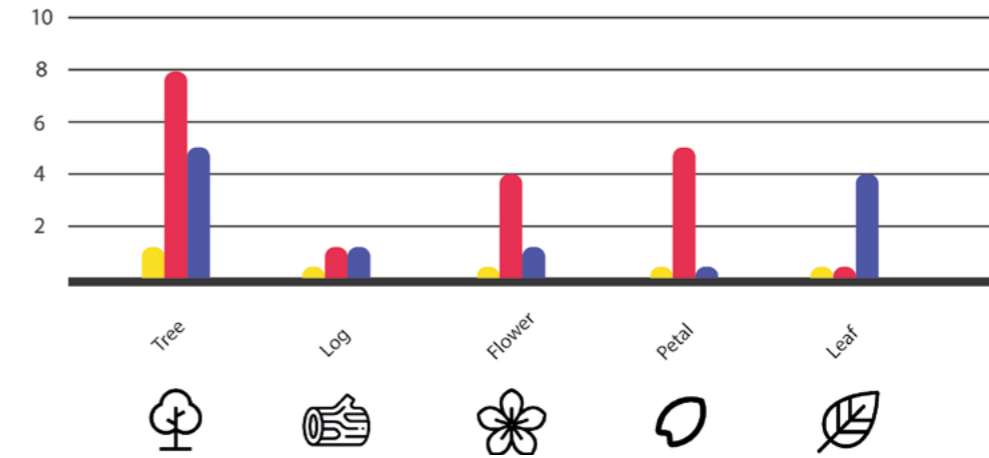
Image 4: Botanical Elements. Own Elaboration

Food

SP: 1
JP: 6
Gen: 1

Drinks

Other: 2
JP: 1

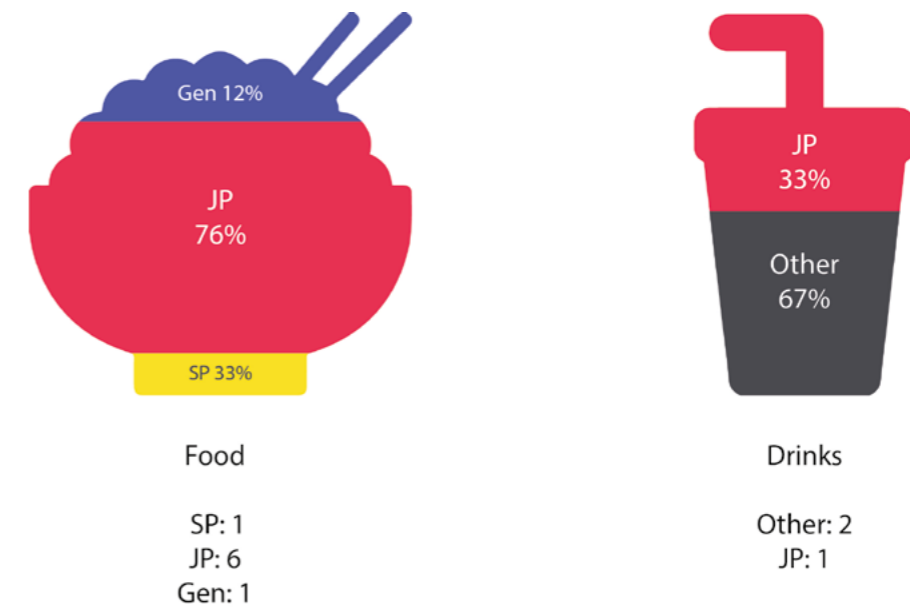**Image 5:** Gastronomy. Own Elaboration
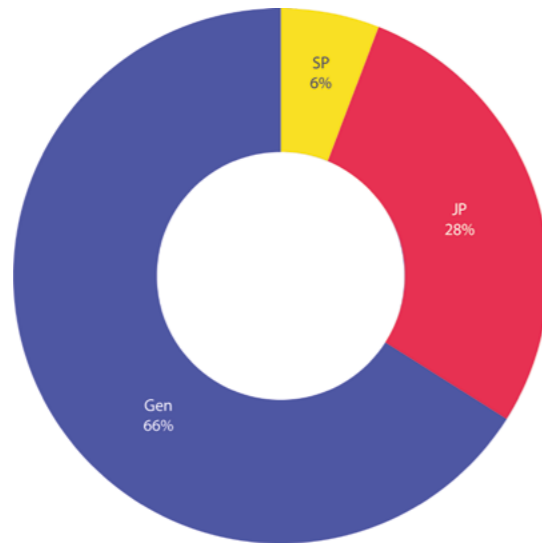
Image 6: Animals by country. Own Elaboration

Image 7: Characters by country. Own Elaboration

Image 8: Japanese technology. Own Elaboration
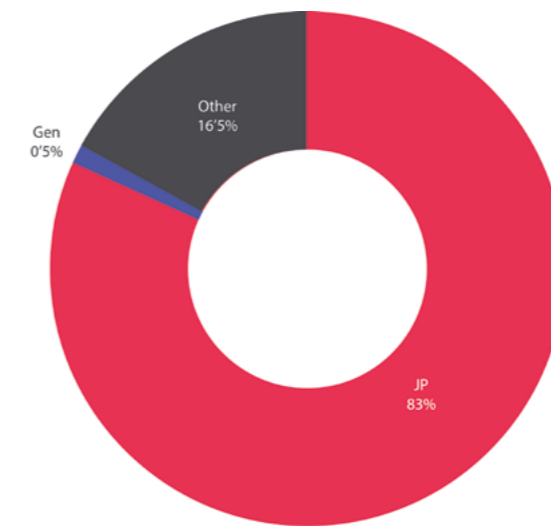
Image 9: Elements of video games or series by country. Own Elaboration

Carmen González Díaz
Illustration and cultural identities. Poster analysis for manga, anime and Japanese festivals.
Cases: Spain 2020 to 2024

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

Kimono
ESP: 0
JP: 30
Gen: 0

Cosplay
ESP: 0
JP: 8
Gen: 1

Futuristic suit
ESP: 0
JP: 3
Gen: 0

School uniform
ESP: 0
JP: 5
Gen: 0

Regional costume
ESP: 0
JP: 0
Gen: 0

Karate suit
ESP: 0
JP: 0
Gen: 0

Accesories
ESP: 2
JP: 17
Gen: 2

Others
ESP: 0
JP: 8
Gen: 16
Otro: 1

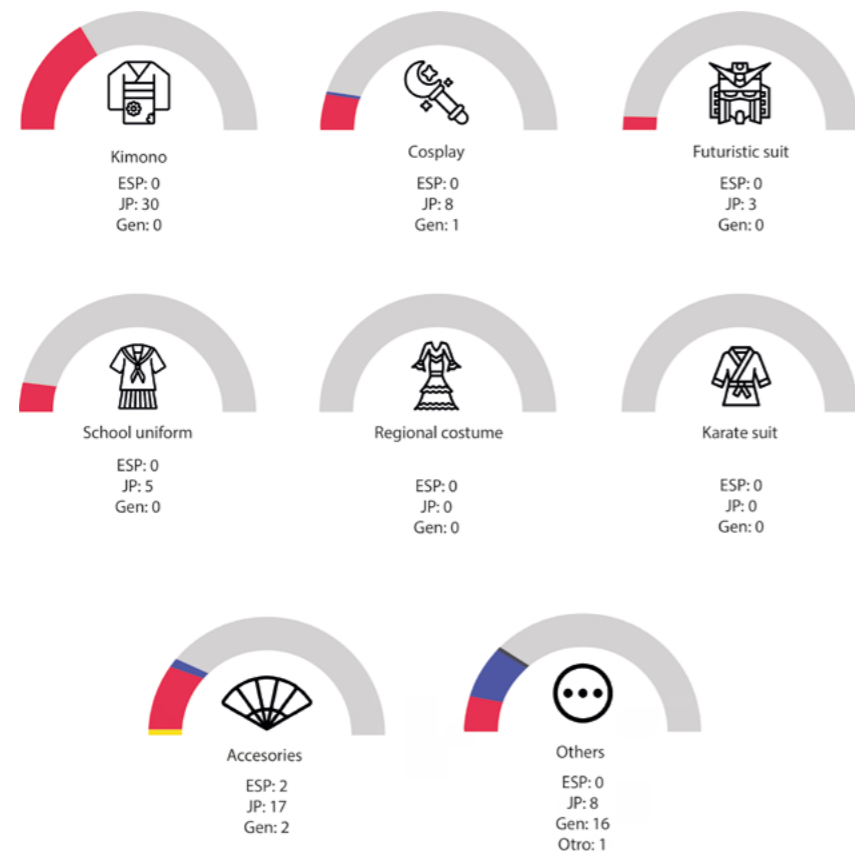**Image 10:** Clothing. Own Elaboration

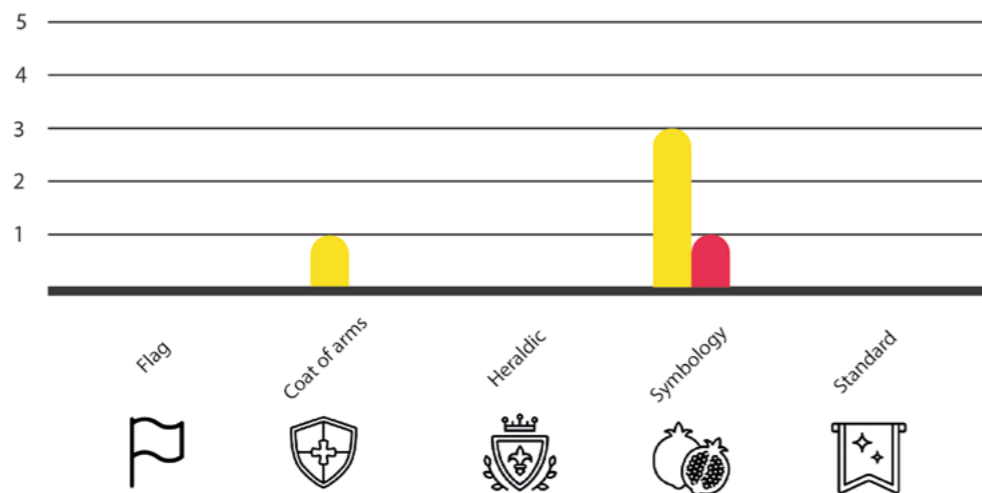Flag | Coat of arms | Heraldic | Symbology | Standard

Image 11: Vexillology. Own Elaboration

4. CONCLUSIONS

The results obtained have enabled us to formulate the following conclusions. When it came to observing whether the hypotheses were fulfilled, we were able to verify that:

- Regarding the first hypothesis: Despite globalisation, the cultural identities of Spain and Japan can be observed in the posters. We have confirmed that this is true.

Numerous cases have been observed of posters focusing on the Spanish cities where the event is organized. In addition to incorporating monuments characteristic of each city, Spanish symbolism has also been included, as is evident in the Malaga poster of Pizarra with its municipal coat of arms. Likewise, elements referring to aspects of Spanish culture have been added, such as the churros with chocolate in the poster for Japan Weekend in Madrid.

On the other hand, in relation to Japan, elements of anime and video games can often be seen, as well as texts in Japanese. Most of the posters use a style typical of manga and anime. In addition, other typical elements of Japanese culture have been identified, such as supernatural creatures called yokai, traditional Japanese clothing such as the kimono, and even typical Japanese cuisine.

In short, the signage at the manga fairs clearly demonstrates how the cultural identities of both countries are maintained and highlighted, showing that globalisation has not erased or blurred them, and that they have not lost their distinct appearance.

- The second hypothesis: The posters of manga festivals held in Spain present Spanish elements despite selling and promoting Japanese. The elements typical of the host country/city are used as advertising claims. It is true that, although the main objective of these events is to sell and promote Japanese culture, Spanish elements are also used as a marketing strategy to attract local audiences. Although this hypothesis has not been fulfilled in all cases, as generic landscapes have also been used, in most of them it is true.

As mentioned above, both monuments and characteristic landscapes and elements of Spanish culture are included, which can make the Spanish public feel a connection with these posters. In addition to being attractive, they show a sense of familiarity. We have also observed that some of these festivals have specific themes that celebrate cultural collaboration, as in the case of the Japan in Granada poster or the Japan in Alfarnate poster, where Japanese culture is integrated into Spanish culture.

In short, the Spanish elements in the posters act as a hook that attracts the local audience, creating a bridge between the promoted Japanese culture and the Spanish culture of the audience.

- The third hypothesis states that: The elements used to transmit a culture are monuments and landscapes. It is true that mainly monuments and landscapes have been used to represent Spanish culture. However, other elements, such as symbolism, have also been used. In the case of Japan, although monuments and landscapes have been represented on some occasions, they have not been the most prominent elements. The most relevant has been the use of elements from video games and anime series typical of Japanese pop culture, as this is what the public consumes most at these events.

The results obtained have allowed us to add further conclusions: In the signage of manga fairs and events related to Japanese culture, greater use is made of Spanish monuments and landscapes, highlighting characteristic elements of the host city. Some of the most repeated examples are the sculptures of Puppy and Maman in Bilbao, and the Tower of Hercules in A Coruña, each depicted twice. The cities represented include Bilbao, Madrid, Valencia, and Barcelona, among others. This may be due to the fact that by being aimed at a Spanish public, the aim is to make them feel more represented with these types of elements and attract more visitors.

In the field of botany, it is not surprising that there have been many cases of elements related to Japanese cherry trees, such as trees, flowers and cherry blossoms, as it is a tree that is highly associated internationally with Japan.

When it comes to food, ramen has stood out from other foods. This may be because ramen

Carmen González Díaz
Illustration and cultural identities. Poster analysis for manga, anime and Japanese festivals.
Cases: Spain 2020 to 2024

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

is Japan's best-known food and the one most associated with manga and anime fans because of the famous instant noodle products such as Cup Noodles. There has only been one case of food from Spain and that is churros with chocolate. This is not surprising as they are commonly consumed at Spanish fairs, so the Spanish public is not excluded from this sweet moment to which they are accustomed. We are struck by the fact that there is only one case of a Japanese drink, the soft drink ramune, which is also well known and marketed outside Japan, so we came to think that Japan is more identified by its food, in particular ramen, than by its drinks, which are hardly represented at all.

In relation to the presentation of animals, there have been many cases of species common to both countries such as dogs or cats. However, in the case of Japanese fauna, numerous cases of goldfish and koi have been found, surpassing cats, which are also closely associated with Japanese culture and are a highly appreciated animal worldwide. In the case of Spain, only two cases of animals have been recorded: a horse referring to Jerez and an octopus representing A Coruña; these animals are cultural symbols of these two cities.

With regard to the characters and elements of series and video games, the characters representing each organisation stood out, especially those of Japan Weekend and Albanime. We have been struck by the fact that characters from famous anime series have hardly been included, although it is true that characters from Studio Ghibli films such as Chihiro or Totoro have appeared several times. This may have happened because many posters of the famous Japan Weekend manga fair organisation have been analysed and have their own characters.

Japanese technology is another characteristic Japanese element, so it is not surprising that products from this sector are represented. Within this sector, consoles are the elements that have stood out the most, with fewer cases of other elements. On one occasion, the appeal to the technologically advanced is achieved by turning Curro's mascot into a futuristic android.

In relation to series elements, there are also many instances of video games compared to anime, such as Pokémon or Zelda. It could be because the target audience for such events tends to be fans of video games as well.

Costumes, regional costumes are other useful elements in signaling a culture. In the posters analysed, we have observed that the kimono has been the most represented garment, and curiously, no traditional Spanish garment has been included. However, two accessories have been used that refer to Spanish clothing.

Analyzing the vexillology, we have been able to observe that there have only been cases that refer to Spain, such as the use of pomegranates to represent the city of Granada, the municipal coat of arms of the Malaga town of Pizarra or the Indalo of Almería. No Japanese vexillology has been presented, possibly because the Spanish target audience might not understand it, as the events are held in Spain and not in Japan. Therefore, the message would not be effective.

4.1. PERSONAL APPRAISAL

As a final conclusion and by way of a critical assessment, we can say that the objectives set out from the beginning have been achieved. We have analysed the presence of Spanish and Japanese elements in the posters of manga fairs.

The methodology of content analysis with a quantitative approach has led us to design a matrix that has given rise to a useful and appropriate analysis sheet for the characteristics of this work. In this way, it has been proven that the content analysis methodology designed by Krippendorff and the quantitative approach proposed by Hernández Sampieri are suitable for this type of research that allows us to obtain rigorous results on graphic design. This dissertation aims to be a methodological proposal for analysis in the field of visual advertising language.

5. BIBLIOGRAPHY

- Bengoa, M. T., González-Díez, L., & Martínez, B. P. (2020). Propuesta metodológica para el análisis gráfico, tipográfico y cromático de cartelería. Pensar la publicidad, 14(2), 269-280.
- Hernández Sampieri, R. (2000). Metodología de la investigación. Mc Graw Hill Interamericana.
- Krippendorff, K (1990). Metodología de análisis de contenido: teoría y práctica. Paidós.
- Listado Manga. (2024). Salones. https://www.listadomanga.es/salones.php?mes=2&ano=2024
- Ripoll Ruiz, J. M. (2022). El diseño gráfico en tiempos de crisis: Análisis de los tatuajes tras la pandemia del Covid-19. Caso: Granada, 2020. *Concept: Revista de investigación e innovación en diseño*, (1), 29-43. https://doi.org/10.58534/2SVKNhlBBh-1-2

STUDY OF BODY SHAPES AND PHYSIOGNOMY

Ana Belén Santos – Orejón Peña[*]

Abstract. This project was developed through an exhaustive study of pattern-making in fashion, focusing on the exploration of forms inspired by surrealist art. This artistic movement, renowned for its dreamlike and unconventional imagery, serves as a rich source of inspiration for creating innovative garments that challenge the traditional norms of design.

From a pattern-making perspective, various systems have been explored, ranging from traditional methods to cutting-edge techniques. Among the most recognised systems are the Martí system and the Isa system, both employing technical approaches generally adapted to the standard sizes set by the fashion industry.

In contrast to these conventional methods, 'zero waste' pattern-making has been implemented—an approach that uses geometric shapes to create versatile, multi-positional garments while minimising fabric waste. Made-to-measure pattern-making has also played a key role, involving precise tailoring to each individual's body structure through bespoke patterns crafted to the client's exact measurements.

The use of a scale mannequin has facilitated experimentation with different proportions and configurations, enabling the visualisation of how these surrealist-inspired shapes interact dynamically with the human form. Furthermore, various textile techniques have been employed to evaluate and reinterpret established volumes, including draping, pleating, and fabric manipulation, further enhancing the exploration of form and texture.

Keywords: Pattern making, textile techniques, abstract forms, surrealist art.

Resumen. Este proyecto se ha desarrollado a partir de un estudio exhaustivo sobre el patronaje en la moda, centrado en la exploración de formas que evocan al arte surrealista. Este movimiento artístico, conocido por sus representaciones oníricas, sirve como una rica fuente de inspiración para crear prendas innovadoras que desafían las normas establecidas del diseño convencional

Desde la perspectiva del patronaje, se han explorado diferentes sistemas que abarcan desde los métodos más tradicionales hasta técnicas más vanguardistas. Algunos de los sistemas más conocidos son el sistema Martí o el sistema Isa. Ambos métodos siguen enfoques técnicos que se adaptan de manera general a las tallas estándar establecidas en la industria.

En contraste con estos métodos convencionales, se ha trabajado con el patronaje "zero waste" o de "cero residuos". Este enfoque se basa en el uso de formas geométricas que permiten la creación de prendas versátiles y multiposicionales, todo mientras se evita el desperdicio de tejido. No podemos olvidar el enfoque del patronaje a medida, esta técnica implica una adaptación precisa a la estructura corporal de cada persona, utilizando patrones únicos basados en las medidas exactas del cliente.

El uso del maniquí a escala ha permitido experimentar con diferentes proporciones y ajustes, facilitando la visualización de cómo estas formas, que evocan las características del arte surrealista, pueden interactuar con el cuerpo humano de manera dinámica. Además, en la evaluación y reinterpretación de algunos volúmenes, se han empleado diversas técnicas textiles con el fin de reinterpretar formas ya establecidas. Estas técnicas incluyen el drapeado, el plisado y la manipulación de tejidos.

Palabras clave: *Patronaje, técnicas textiles, formas abstractas, arte surrealista.*

[*]**Corresponding author:** anabelensantosorejon@gmail.com

1. INTRODUCTION AND OBJECTIVES

Beyond following the traditional lines of the body, we will explore how forms can be reinterpreted, reinvented and sometimes challenged altogether. This approach awakens a profound dialogue on the relationship between the body and clothing.

Among the most recognised pattern-making methods are the Martí and Isa systems. Both employ procedures that allow patterns to be adjusted to the standard sizes defined by the industry (García Ramos, 2016).

In contrast to these two techniques, we find "zero waste" pattern-making. This method uses geometric shapes to create multifunctional and highly versatile garments. Its main advantage lies in its ability to minimise material waste to the greatest extent possible (Rissanen & McQuillan, 2016).

On the other hand, made-to-measure pattern-making offers a personalised approach, as it adapts to the unique body shape of each individual. The patterns must be unique and created according to the precise measurements of each client (Aldrich, 2020).

In parallel, surrealism, an artistic movement that emerged in the 1920s, challenges the conventions of reality and explores the power of the subconscious and the imagination (Benjamin, 2013). The fusion between pattern making and surrealism, gives rise to a terrain where garments become three-dimensional canvases that create a unique expression.

We used as a model the methodology proposed by De Rocco (2022), which was based on textile manipulation as an expression of abstract art. "With a varied fusion of fabrics, the aesthetic of a garment is defined; with fabrics joined in layers, gathered, or folded, a multitude of avant-garde textures can be created."

1.1. OBJECTIVES

- Challenge conventions and explore new forms in the patternmaking/fashion sector.
- To innovate and advance the industry by working with shapes that adapt to different types of body physiognomy.
- To extend the knowledge and study of shapes in fashion pattern making and craft/hand sewing.

- Explore new techniques in the construction of shapes and materials for clothing.
- Generate a fresh image based on a story concept to attract new users to the firm.
- To develop a private sales chain where the quality of the design, the study of shapes and manual craftsmanship are the key factors that identify the brand.
- Generate different advertising campaigns or private shows to present the new proposals and bring the user closer to a different experience where they are the protagonists of each proposal.
- Critically reflect on the process of designing and producing garments, bringing the user closer to the entire process of execution and development of the garment, adding value to the piece and its sustainability.

2. METHODOLOGY

The context of the present study is developed under the choice of the topic for the final degree project, once chosen; it began with an investigation on the study of shapes and evolution of pattern making together with the decontextualisation of the compositions of some works of the surrealist paintings.

Investigating different points such as the beginning and the history of pattern making together with the most common shapes that compose it, the designers who have most focused on this discipline. Following with an investigation on the compositions of some works of surrealist art such as Guernica (Picasso, 1937) and The Persistence of Memory (Dalí, 1931).

The colour palette has been selected after a study of the most predominant tones of these surrealist works. In the same way, the geometric shapes that reflect the moodboards give depth and volume to the garments.

After an extensive research process on various techniques and procedures, we have perfected several patterns, eliminating many of the errors previously detected. With these new patterns, we have created a mini strapless dress with side seams, which serves as a base to add the volume at the top. To achieve these volumes, we have used the moulage technique, which allows us to work with greater precision and detail.
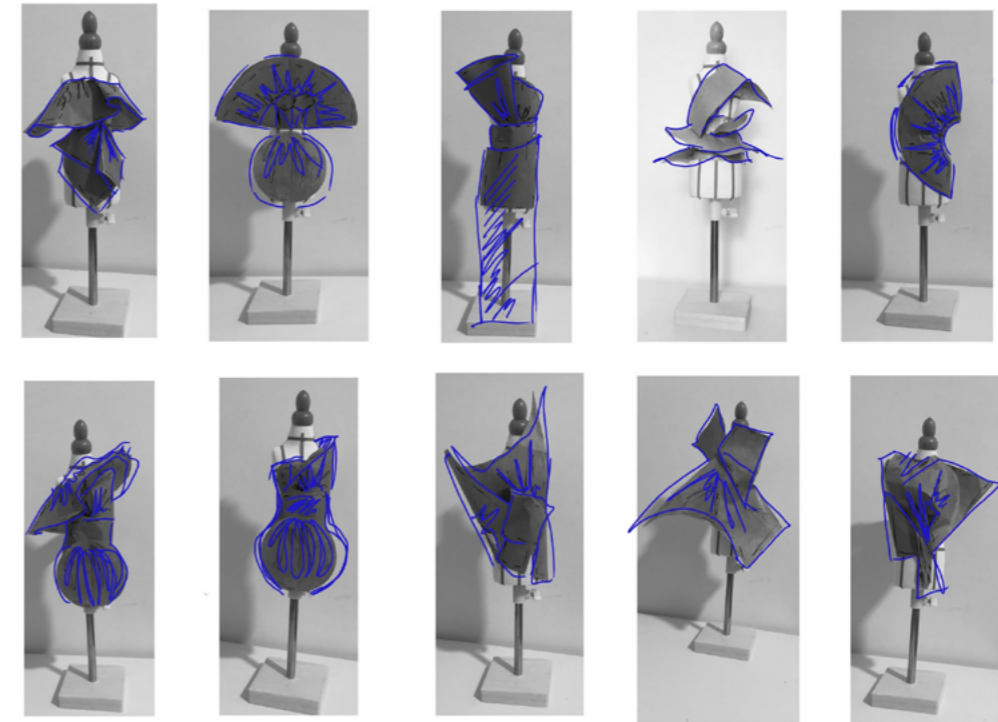

Image 1: Pattern experimentation, own elaboration.

In addition, the pattern for an asymmetrical dress has been designed, the most distinctive feature of which is its cross-shaped draping, ending in a bow at the back.

2.1. CHRONOGRAM

The process has been developed in several phases First, brainstorming was carried out to clearly define the project concept. Next, extensive research was carried out, including the development of small scale patterns and the application of various techniques and textile tests. Finally, the collection was developed and the two garments were made together with the final accessory.

Some of the problems detected:

- Adjustments and alterations of garments from one size to another, due to their volume experimentation, can be complicated to scale the pattern by size.
- » **Solution:** Incorporate design elements that facilitate adjustments, such as zips or removable panels.
- Persistent Creases and Wrinkles Bulky garments can develop creases and wrinkles that

are difficult to remove, especially in fabrics such as taffeta.
- » **Solution:** Steam Iron: Use a steam iron to treat creases, applying steam at a safe distance to avoid damage to the fabric.
- Loss of Shape and Structure: Bulky garments may lose their shape and structure after washing, especially if the fabric is unsuitable.
- » **Solution:** Select fabrics with shape recovery properties, such as Duchesse satin or organdy, which maintain structure.
- Difficulties when washing bulky garments: Bulky garments can be difficult to wash due to their size and weight.
- » **Solution:** For this reason labels have been designed with detailed instructions for care and dry cleaning if necessary.
- Minutes before the start of the shoot, one of the models was unable to attend for personal reasons, which was detrimental to the fashion editorial.
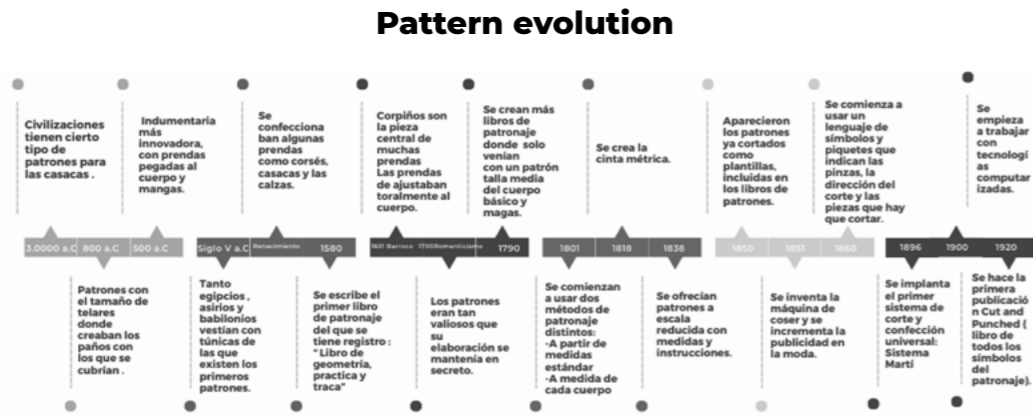- » **Solution:** Re-styling the model who was present.

3. RESULTS

Pattern evolution

Image 2: Timeline, own elaboration.

Image 3: Own elaboration.

Image 3: Own elaboration.

Image 4: Own elaboration.

Image 5: Own elaboration.

Image 6: Own elaboration.

4. CONCLUSIONS

After carrying out the research and development of the garments, as well as carrying out various textile tests, we have achieved all the planned objectives, with a very satisfactory final result.

After going through various phases of research and experimentation, we can affirm that we have obtained very interesting patterns that will be implemented in the garments of future collections. In this sense, working with scale patterns has been of great help, allowing us to achieve greater precision in the adaptation to the body's anatomy.

5. BIBLIOGRAPHY

- Aldrich, W. (2020). *Metric pattern cutting for women's wear*. John Wiley & Sons.
- Benjamin, W. (2013). *El surrealismo*. Casimiro.
- Dalí, S. (1931). *La persistencia de la memoria* [Óleo sobre lienzo]. Museum of Modern Art, Nueva York, EE. UU.
- De Rocco, M. (2022). Slow Fashion y arte: Aplicación de la técnica del quemado en la manipulación textil. Colección skinnor. *Concept: Revista de investigación e innovación en diseño*, (1), 87-102. https://doi.org/10.58534/2SVKNhlBBh-1-6
- García Ramos, C. (2016). Método profesional de patronaje y escalado femenino para trazados manual geométrico e informático. Patrón XXI: Patrones de costura
- Picasso, P. (1937). Guernica [Óleo sobre lienzo]. Museo Nacional Centro de Arte Reina Sofía, Madrid, España.
- Rissanen, T., & McQuillan, H. (2016). *Zero waste fashion design*. Bloomsbury Publishing.

Paula Mutiloa Martínez
Tapping into nature's bounty: Exploring posidonia oceanica
organic waste for sustainable material development.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

TAPPING INTO NATURE'S BOUNTY

EXPLORING POSIDONIA OCEANICA ORGANIC WASTE FOR
SUSTAINABLE MATERIAL DEVELOPMENT

Paula Mutiloa Martínez[*]

Abstract. This project addresses the need for sustainable materials in response to environmental degradation caused by human activity, particularly since the mid-20th century. Organic waste, such as Posidonia oceanica, significantly contributes to pollution and greenhouse gas emissions. The designer's role in addressing these challenges is highlighted, focusing on repurposing Posidonia oceanica waste into new materials. The study investigates the transformation of organic waste into usable composites, examining the feasibility of creating sustainable materials with unique properties. The primary goal is to use Posidonia oceanica waste as reinforcement in composite materials. Specific objectives include experimenting with biocomposites using mycelium, bio-cooking processes with gelatin, agar-agar, and Posidonia. The project follows five stages: information gathering and analysis, experimentation, testing, results compilation, and final documentation. A material innovation methodology, alongside non-standardised tests, was employed to confirm the hypothesis that a composite material could be made from Posidonia oceanica waste, including data on its potential combinations with other materials.

Keywords: Waste generation, organic waste, composite material, posidonia waste, material innovation.

Resumen. Este proyecto aborda la necesidad de materiales sostenibles como respuesta a la degradación ambiental causada por la actividad humana, particularmente desde mediados del siglo XX. Los residuos orgánicos, como la Posidonia oceanica, contribuyen significativamente a la contaminación y las emisiones de gases de efecto invernadero. Se destaca el papel del diseñador en la solución de estos desafíos, enfocándose en la reutilización de los desechos de Posidonia oceanica para la creación de nuevos materiales. El estudio investiga la transformación de los residuos orgánicos en compuestos utilizables, analizando la viabilidad de crear materiales sostenibles con propiedades únicas. El objetivo principal es utilizar los desechos de Posidonia oceanica como refuerzo en materiales compuestos. Los objetivos específicos incluyen la experimentación con biocompuestos utilizando micelio, procesos de biococción con gelatina, agar-agar y Posidonia. El proyecto sigue cinco etapas: recopilación y análisis de información, experimentación, pruebas, recopilación de resultados y documentación final. Se empleó una metodología de innovación de materiales, junto con pruebas no estandarizadas, para confirmar la hipótesis de que se podría crear un material compuesto a partir de los desechos de Posidonia oceanica, incluyendo datos sobre sus posibles combinaciones con otros materiales.

Palabras clave: *Generación de residuos, residuos orgánicos, material compuesto, residuos de posidonia, innovación de materiales.*

[*]Corresponding author: paulamutiloa9@gmail.com

Paula Mutiloa Martínez
Tapping into nature's bounty: Exploring posidonia oceanica
organic waste for sustainable material development.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

1. INTRODUCTION AND OBJECTIVES

This study explores the potential use of Posidonia Oceanica organic waste as a reinforcing fibre in composite materials. The research emphasizes innovative experimentation to develop a materials library, focusing on DIY production techniques and the reuse of organic waste. A circular design approach is adopted to encourage self-production of biomaterials from organic by-products, supporting the circular economy and promoting sustainable urban production and consumption.

The project aims to optimize material formulations through specialized research and expert insights, investigating the properties of Posidonia fibres and their suitability for specific applications. By framing design as a political action, it seeks to align with regenerative design principles, ensuring environmentally positive outcomes. Furthermore, the initiative aspires to catalyse future academic and practical endeavours, fostering a more self-sufficient, collaborative, and sustainable community.

Main objectives:
- Use the "organic waste" of Posidonia as reinforcing fibre for possible composite materials.
- Generate a library of materials through an experimentation process.
- Promote the self-production of biomaterials and contribute to a circular economy.

Specific objectives:
- Determine the most appropriate formulas for the creation of materials.
- Show the project as a catalyst for change towards regenerative design.
- Open new avenues of research for future academic work or related projects, with the aim of expanding the positive impact and promoting a more sustainable community.

1.1. HYPOTHESIS
- A composite material can be generated with Posidonia waste.
- You can innovate with materials by being a product designer.

1.2. STATE OF THE ART
Currently, several authors have investigated the use of Posidonia fibers, both leaves and balls, as reinforcement for PHA bio-composites (Seggiani et al., 2017), as an additive in mortars (Saval Pérez, 2003), as reinforcement in bioplastics for packaging (Benito González et al., 2018)., as a material for the creation of boards (Maciá Mateu, 2016)., as a material for the production of composites with wood (Rammou et al., 2021)., as a basis for the creation of fiber boards (Garcia Garcia et al., 2018), among others, obtaining interesting results regarding physical and mechanical properties.

In these articles, we can see that the fibre treatment process is very similar; from the collection of the fibre, its subsequent washing and processing treatment. Depending on the matrix that joins the fibre, the properties are one or another. We highlight the insulating property, great capacity to absorb water (4.5 times its weight), fire resistance; it does not burn after 10 minutes in front of a Bunsen burner. (Saval Pérez, 2003, 426).

2. METHODOLOGY

This project applies the Design-Driven Material (DDM) methodology to experiment with and create a library of potential materials through iterative testing (Karana et al., 2015). It leverages expert recipes and Open Source platforms(Pérez & Gardey, 2023), including contributions from Kas Houthuijs, Shirley Niemans, Loes Bogers, and the HKU Lab Pastoe and Biolab, serving as foundational resources for experimentation.

The work follows a five-stage structure, prioritizing data collection and analysis in the initial phases and focusing on experimentation, prototyping, and results evaluation in later stages. Stage one employs state-of-the-art methodologies to explore material innovation and organic waste reuse. Stage two involves iterative experimentation, qualitative analysis, and expert evaluations to identify optimal material applications.

2.1. MATERIALS OVERVIEW
1. Posidonia: Harvested from Cala Roja, Ibiza, and processed through washing, boiling, and dehydration at 60°C for 5 hours.
2. Mycelium: Oyster mushroom mycelium was cultivated on agar and hemp at HKU IBB Biolab, producing soft, lightweight materials of medium hardness.
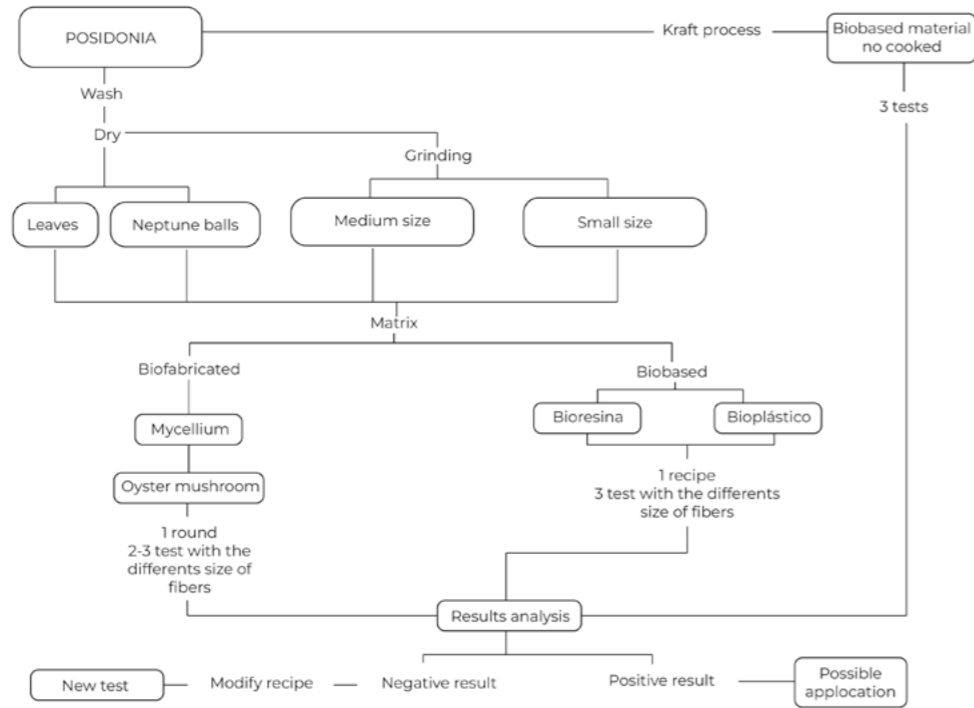3. Polymer and Plasticizer: Two biopolymers were used—animal-derived gelatin for bioresin and agar agar (red algae) for bioplastic. Glycerine served as a plasticizer, influencing material flexibility and hardness, with properties adjusted by its concentration (Davis, 2017).

Image 1: Cleaning process of Posidonia leaves.

Image 2: Mycellium inoculated in agar agar and hemp.

Paula Mutiloa Martínez
Tapping into nature's bounty: Exploring posidonia oceanica
organic waste for sustainable material development.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

Image 3: Flow of methods.

2.2. MATERIALS AND TOOLS

The workspace and tools depend on the material type. Mycelium requires sterilized conditions achieved by cleaning with alcohol and using a blue-flame Bunsen burner. In contrast, cooked biocomposites require a ventilated space with electricity, and uncooked biomaterials need simple setups.

Biomaterials:

- Mycelium: Cultivated in sterilized environments.

- Cooked Biomaterials: Include bioresin (gelatin, glycerine, water) and bioplastic (agar agar, glycerine, water). In this case, the workspace is flexible, simple, with ventilation and electricity (if you use an electric stove).
- Uncooked Biomaterial: Made from Posidonia and water.

Samples are identified using a coding system based on material type: biocooked, uncooked, or biofabricated.

Image 4: Sampling code of the three different materials.

Analysis and Evaluation:
Tests follow specific criteria to refine formulations. Properties sheets document the results of cooked and uncooked materials, while the compatibility of the posidonia-mycelium matrix is assessed visually, classifying the results as optimal, partial or no growth.
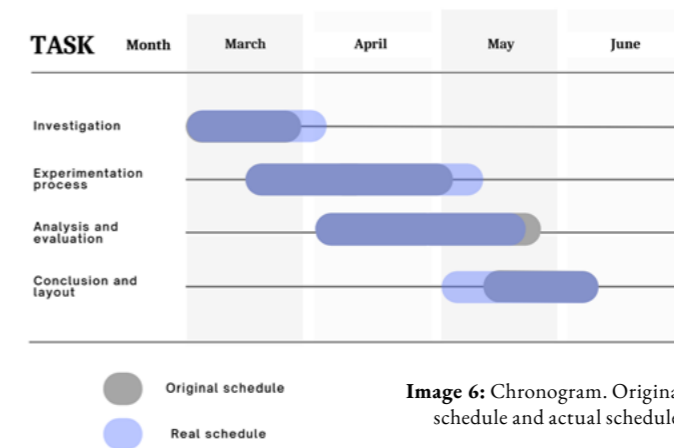
2.3. CHRONOGRAM

The project timeline experienced deviations from the original plan. The research phase took longer than anticipated due to the difficulty in sourcing information on Posidonia as a material. Experimentation extended beyond initial expectations, as the iterative nature of testing and refining recipes made it an ongoing process. Conversely, the analysis phase was completed more efficiently than planned. Using organized tables streamlined the evaluation process, accelerating the drafting of conclusions and project layout.

Image 5: Biobased evaluation sheet. Show the properties and the recipe of the material.

Image 6: Chronogram. Original schedule and actual schedule.

Paula Mutiloa Martínez
Tapping into nature's bounty: Exploring posidonia oceanica
organic waste for sustainable material development.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

3. RESULTS

Results are analysed in four sections: biofabricated material with mycelium, biocooked materials with gelatin and agar, uncooked biocomposites, and public feedback.

3.1. BIOFABRICATED: OYSTER MUSHROOM MYCELIUM

The study aimed to train mycelium to use Posidonia as a substrate. The primary hypothesis, "Posidonia can be used as a substrate for mycelium," was tested through secondary hypotheses. Initial experiments with raw Posidonia leaves were unsuccessful due to salt accumulation and high lignin content, which restricted mycelium access to cellulose. The Kraft process was explored to extract cellulose, and additional nutrients were introduced during growth, yielding mixed results. A final hypothesis, using a sugar, flour, and water emulsion to enhance growth, also proved ineffective.

3.2. BIOBASED: GELATIN, AGAR AGAR, AND POSIDONIA

The process progressed from raw Posidonia to final materials through iterative testing. Three tests per combination were conducted, totalling nine tests for each material type (18 overall). Results were documented using property sheets, cataloguing each material with codes and images, enabling systematic observation and analysis for iterative improvements.

Image 7: Mycellium test: LPOLOM-h, LPOSOM-h, NL2POLOM-h, NL3POLOM-hfc and NLPOSOM-hfs.
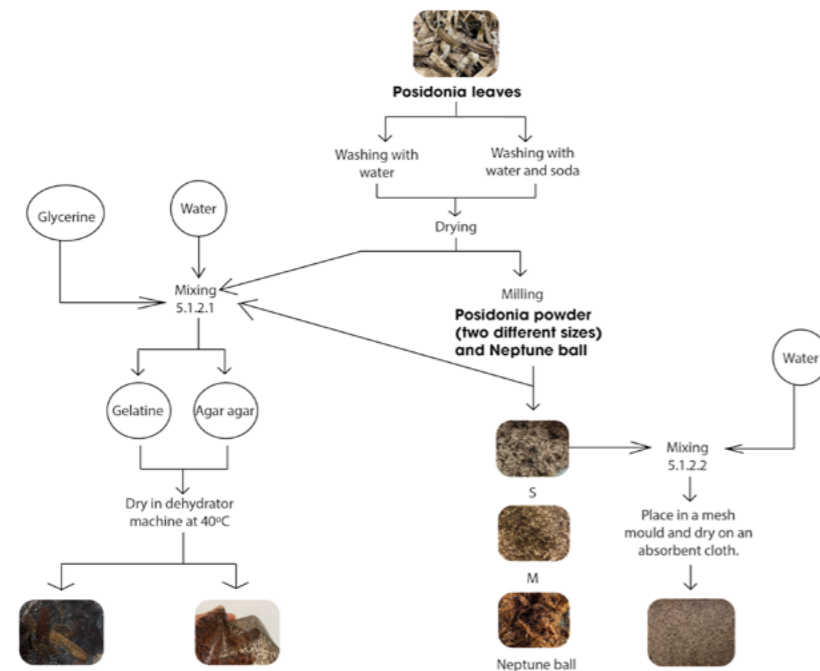

Image 8: Biobased experimentation process separated by cooked test and uncooked test.

Image 9: Test W00POL-G. Made with gelatine.

Image 10: Test PK02-OP. Paper from Posidonia fibre made through the Kraft process.

Paula Mutiloa Martínez
Tapping into nature's bounty: Exploring posidonia oceanica
organic waste for sustainable material development.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

3.3. RESULTS CONTRIBUTED BY THE PUBLIC

Regarding the results provided by the public (16 people in total), we obtained two types; one, related to the properties of each test (flexibility, roughness, bad smell, etc.), and another, refers to the possible future uses of the type of material; divided into four types: bioresin, bioplastic, paper/cardboard and mycelium.
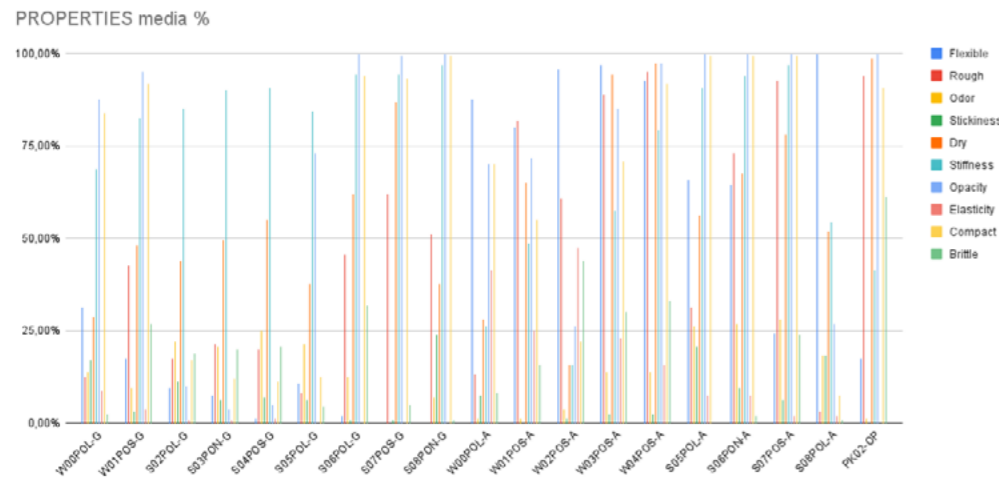
Image 11: Bar graph of the percentages of properties. The public's feedback through surveys in an exhibition of the materials.
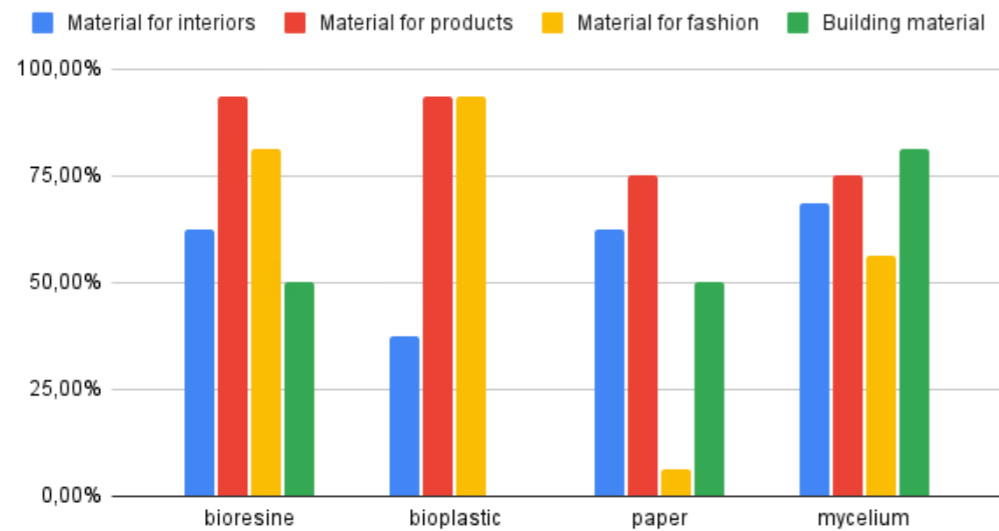
Image 12: Bar graph of future uses. The public's feedback through surveys in an exhibition of the materials.

4. CONCLUSIONS

This section presents the conclusions of the project, addressing general findings and experimental results, and proposing future research avenues. The initial hypothesis, "A composite material can be generated from the 'waste' of Posidonia Oceanica," guided the research and was validated through extensive investigation, experimentation, and analysis. Field studies confirmed the feasibility of using Posidonia fibre as reinforcement in composite biomaterials, demonstrating the potential for self-production in product design as both viable and innovative.

4.1. EXPERIMENTAL CONCLUSIONS

The experimental sub-objectives were successfully achieved, focusing on two key goals:

- Understanding the Material: Both theoretical and practical knowledge were gained. Theoretical understanding was drawn from technical literature, while practical knowledge was acquired through experimentation and design based on material characteristics.
- Determining Suitable Formulas: The most effective formulas for producing material samples were identified.

4.2. CONCLUSIONS FROM THE SAMPLES AND EXPERIMENTATION PROCESS

The self-production of biomaterials using Posidonia fibre was shown to be viable, resulting in materials with valuable properties. However, the Posidonia-oyster mushroom matrix proved unviable, yielding negative results. Long fibres arranged longitudinally or intertwined showed greater fatigue resistance and improved longitudinal elasticity. Neptune ball fibres provided higher stiffness and a rougher texture compared to other fibre types. Conventionally washed fibre did not bond well with the matrix, while fibre boiled with soda improved cohesion, resulting in better matrix bonding. A higher proportion of gelatin to glycerine produced a hard, resistant material, but not flexible or elastic, while using agar and increasing glycerine content resulted in a more flexible and elastic material, though less rigid and hard. Posidonia material was fragile and flexible but lacked elasticity and rigidity, limiting its application in product design.

4.3. FUTURE LINES OF RESEARCH

Two main research directions are proposed: the development of new materials and the application of these materials.

Development of new materials:
- Posidonia as a substrate for mycelium.
- Posidonia fibre composite biomaterials.
- Development of textile fibre from Posidonia.

Application of materials:
- Application of Posidonia biocompounds in products.
- Use of Posidonia as an insulating material.
- Use of Posidonia for packaging.
- Posidonia composite materials in space design.

4.4. PERSONAL APPRAISAL

After extensive research, it is evident that there is still much to explore, particularly in the area of DIY materials. The limited information on biomaterials related to Posidonia hindered a more precise analysis, which could have led to more defined objectives and results. However, this scarcity of data also underscores the value of this project, as it opens up opportunities for future researchers to build upon these findings, offering new research avenues.

I had the privilege of working in an excellent environment at HKU University Utrecht, with the guidance of expert teachers Shirley Niemans and Kas Houthuijs, who provided essential support. Despite dedicating significant time to experimenting with mycelium, I encountered a limitation of time that prevented me from exploring further in the field of cooked biomaterials, which could have yielded promising results. Early diversification of materials might have led to broader developments.

The Design Driven Material methodology was invaluable, providing clear structure and focus, particularly during experimental phases where it was easy to get sidetracked. This project has great potential and I plan to continue developing it. Despite challenges, these difficulties deepened my understanding of both the material and my own perseverance. They were crucial to my academic and personal growth. Moving forward, I aim to work collaboratively with specialists who share a passion for materials and use design as a tool for positive change.

Paula Mutiloa Martínez
Tapping into nature's bounty: Exploring posidonia oceanica
organic waste for sustainable material development.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

5. BIBLIOGRAPHY

- Benito Gonzalez , I. , Lopez Rubio , A. , & Martinez Sanz , M. (2018). Potential of lignocellulosic fractions from Posidonia oceanica to improve barrier and mechanical properties of bio-based packaging materials. *International Journal of Biological Macromolecules, 118*, 542-551.https://doi.org/10.1016/j.ijbiomac.2018.06.052.
- Bogers, L. (2019). BIORESIN - *Loes Bogers*. https://class.textile-academy.org/2020/loes.bogers/files/recipes/bioresin/
- Davis, C. (2017, March 1). The secrets of bioplastic. Issue. https://issuu.com/nat_arc/docs/the_secrets_of_bioplastic_
- Garcia Garcia, D., Quiles Carrillo, L., Montanes, N., Fombuena, V., & Balart, R. (2018). Manufacturing and Characterization of Composite Fibreboards with Posidonia oceanica Wastes with an Environmentally-Friendly Binder from Epoxy Resin. *Materials, (11)*, 1-35. https://doi.org/10.3390/ma11010035
- HKU. (n.d.). *Making biomaterials*. LAb pastoe Gitbook. https://labpastoe.gitbook.io/lab-pastoe/tutorials/bioplastics
- Karana, E., Barati, B., Rognoli, V., & Zeeuw van der Laan, A. (2015). Material Driven Design (MDD): A Method to Design for Material Experiences. *International Journal of Design, 9*(2), 35-54.
- Maciá Mateu, A. (2016). Posidonia Oceanica boards and Galician pine wood particles. Study of mechanical properties. Compression parallel to the board. [Doctoral dissertation, Universitat d'Alacant]. http://hdl.handle.net/10045/54087
- Niemans, S. (2023). Biomaterials course. HKU Patoe, Utrecht, Netherlands.
- Pérez, J., Gardey, Ana. (2023, November 9). *Open source - Qué es, ejemplos, definición y concepto*. Definición.de. https://definicion.de/open-source/
- Rammou , E. , Mitani , A. , Ntalos ,, G. , Koutsianitis , D. , Taghiyari , H. R. , & Papadopoulos , A. N. (2021). The Potential Use of Seaweed (Posidonia oceanica) as an Alternative Lignocellulosic Raw Material for Wood Composites Manufacture. *Coatings, 11*(1), 1-69. https://doi.org/10.3390/coatings11010069
- Saval Pérez, J. M. (2003). *Study of Posidonia Oceanica residue used as additions in cement mortars*. [Doctoral dissertation, Universitat d'Alacant].
- Seggiani, M., Cinelli, P., Mallegni, N., Balestri, E., Puccini, M., Vitolo, S., Lardicci, C., & Lazzeri, A. (2017). New bio-composites based on polyhydroxyalkanoates and posidonia oceanica fibres for applications in a marine environment. *Materials, 10*(4), 326. https://doi.org/10.3390/ma10040326
- TomorrowBio. Insight. (2023, August 24). *Biotechnology. From polymers to ceramics: Different types of biomaterials and their uses*. https://www.tomorrow.bio/es/post/de-los-pol%C3%ADmeros-a-la-cer%C3%A1mica-diferentes-tipos-de-biomateriales-y-sus-usos-2023-08-5050879280-biotechnology

María Vileya Espinosa
Interior design strategies for rural spaces. New
opportunities for emptied Spain in the XXI century.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

Interior Design

INTERIOR DESIGN STRATEGIES FOR RURAL SPACES
NEW OPPORTUNITIES FOR EMPTIED SPAIN IN THE XXI CENTURY

María Vileya Espinosa(*)

Abstract. This work examines the housing issue in the "Empty Spain" and proposes a solution based on sustainability and the maintenance of architectural identity, aimed at facilitating rural renovation projects. Rural environments represent an opportunity for young people, who face difficulties in achieving a good quality of life, to settle with the help of contemporary tools. Focused on Spain and its homogeneous characteristics, the study also considers the social changes following the Covid-19 pandemic.

The work is based on important national studies, such as Sergio del Molino's, and international ones, such as Claudia de Luca, Simona Tondelli, and Hanna Elisabeth's, which analyse the effects of the pandemic on rural areas and rural revitalisation projects based on culture.

The methodology includes a documentary study of thematic areas relevant to young people aged 18 to 35: new technologies to combat depopulation, a comparison of the effects on mental health between urban and rural environments, strategies for reclaiming urban space as a sustainability measure, and rural housing as an alternative for housing access. These areas are analysed to provide useful information on new ways of understanding spaces.

In conclusion, space design is key for the transition from urban to rural living, and this work offers interior design recommendations to adapt homes to contemporary needs.

Keywords: Emptied Spain, repopulation, new generations, habitability, rural development, displacement.

Resumen. Este trabajo examina la cuestión habitacional en la "España Vaciada" y propone una solución basada en la sostenibilidad y el mantenimiento de la identidad arquitectónica, destinada a facilitar proyectos de reforma rural. Los entornos rurales representan una oportunidad para que los jóvenes, que enfrentan dificultades para lograr una buena calidad de vida, se establezcan con ayuda de herramientas contemporáneas. Focalizado en España y sus características homogéneas, el estudio también considera los cambios sociales tras la pandemia del Covid-19.

El trabajo se basa en importantes estudios nacionales, como el de Sergio del Molino, y internacionales, como el de Claudia de Luca, Simona Tondelli y Hanna Elisabeth, que analizan los efectos de la pandemia en las áreas rurales y proyectos de revitalización rural basados en la cultura.

La metodología incluye un estudio documental de áreas temáticas relevantes para jóvenes de 18 a 35 años: nuevas tecnologías para combatir la despoblación, comparativa de los efectos en la salud mental entre entornos urbanos y rurales, estrategias de sostenibilidad para reconquistar el espacio urbano, y la vivienda rural como alternativa de acceso a la vivienda. Estas áreas se analizan para proporcionar información útil sobre las nuevas formas de entender los espacios.

En conclusión, el diseño de espacios es clave para la transición de la vida urbana a la rural, y este trabajo ofrece recomendaciones de interiorismo para adaptar las viviendas a las necesidades contemporáneas.

Palabras clave: *España vaciada, repoblación, nuevas generaciones, habitabilidad, desarrollo rural, desplazamiento.*

María Vileya Espinosa
Interior design strategies for rural spaces. New
opportunities for emptied Spain in the XXI century.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

1. INTRODUCTION AND OBJECTIVES

The "Empty Spain" is defined as a territorial, political, and economic phenomenon that originated in the second half of the 20th century due to strategies that diverted political and economic investment to major cities. This dynamic has become a regular part of the territorial distribution in Spain rather than a temporary occurrence. The term "vaciada" (emptied) emphasizes the causes and responsibilities behind this process, contrasting with "vacía" (empty), which simply describes the current population status.

Image 1: Family photograph. Own album.

Sergio Del Molino (2022) argues that rural Spain was never densely populated, noting a slight population increase over the past century, though cities have grown much more rapidly. This imbalance underscores the need for institutional investment to maintain rural prosperity, revealing a discriminatory phenomenon rooted in the centralist economic model of the Franco era, which forced youth migration to cities.

The consequences for both rural and urban areas are significant. Rural areas face desertification, abandonment, economic decline, and cultural dislocation, while cities suffer from overpopulation, pollution, inflation, and reduced quality of life. Addressing these issues involves evaluating current circumstances and taking responsibility for societal effects to generate positive changes.

In a European context, Spain's demographic challenges are unique, with lower growth despi-

te its large size. Other European countries with similar land areas, like Italy and Germany, have much higher population densities. The "Empty Spain" is a distinctive and stable phenomenon that warrants specific study due to its unique characteristics and circumstances.
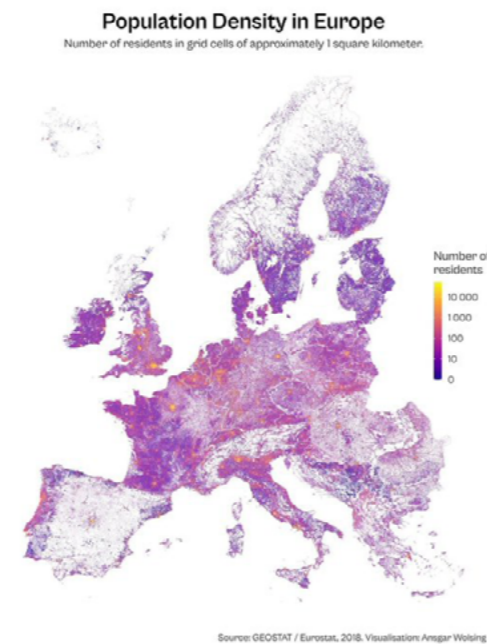

Image 2: Number of residents per 1 km² grid cells. (Geostat, 2021)

The 2020s, marked by the COVID-19 pandemic, brought profound social changes, particularly affecting younger generations (Gen Y and Z), who are digital natives. Understanding the impact of current events on these generations is crucial for analysing the evolution of the "Empty Spain" and how contemporary habitability changes influence younger populations. This research focuses on how these generations are affected by changes in Spain's living conditions since the pandemic began.

Thanks to studies such as those by Vayá and González (2020), as well as De Luca, C., Tondelli, S., and Aberg, H.E. (2020), we find hope in knowing that successful projects exist in parts of the world with characteristics similar to our own. The principles of these projects

may serve as valuable tools for generating a positive impact within our context.

As designers working with individuals' emotions in various environments, engaging in this advocacy offers both an opportunity to serve our communities and a meaningful commitment to issues related to our places of origin, histories, and heritage. In this case, the role of interior design is to find the connections between a life brought from the city to a rural environment, to which individuals must adapt in search of fulfilling their needs and making the most of the best aspects of both worlds.

1.1. SPECIFIC OBJECTIVES

- Analyse the living conditions in rural and urban environments for new generations.
- Develop design strategies for spaces that align the quality of life in rural areas with that of urban ones.
- Contribute to the protection of the identity of rural spaces through design.

2. METHODOLOGY

This project follows a documentary and correlational research approach employing an inductive methodology and qualitative data to formulate its conclusions. The analytical methodology is divided into two phases. In the first phase, it addresses the concerns of Spanish youth, considering them as a potential driving force for the repopulation of these areas.

2.1. CONCERNS OF SPANISH YOUTH: A DRIVER OF CHANGE FOR "EMPTIED SPAIN"?

In this section, we address how Generation Z in Spain, born between 1994 and 2010 and comprising between 5 and 7 million individuals, shows a significant concern for economic stability and the possibility of acquiring their own home. This generation is distinguished by its ability to adapt to diversity, its climate awareness, and its critical thinking skills, characteristics that contrast with previous generations such as the Silent Generation, who lived through times of depression and global conflicts (Magallón Rosa, 2016).

According to a recent article in La Vanguardia (M. Rius, 2023) titled "What worries today's youth?", Spanish youth show greater concern than their international peers for

economic stability and the security of owning a home. This trend is grounded in the precarious nature of youth employment, with an unemployment rate of 30.1% for those under 24 years old and 23.3% for those up to 29 years old, according to data from the Ministry of Labour and Social Economy (2023).

The Barometer of Opinion on Childhood and Adolescence, conducted by UNICEF (2023) in collaboration with the University of Seville, confirms that Spanish youth are also concerned about the effects of the pandemic, economic crises, climate change, and the environment. These factors significantly affect the aspirations and priorities of this generation, emphasizing the pursuit of economic stability and the opportunity to access their own housing as fundamental goals for their future.

This analysis underscores how the concerns of Spanish youth can act as a potential driver to address the phenomenon of "Spain Vaciada," driving initiatives for depopulated areas and revitalisation through policies and projects designed to improve living conditions and provide sustainable opportunities in these environments.

2.2. THE ROLE OF NEW TECHNOLOGIES AND DIGITALISATION IN COMBATING DEPOPULATION

According to the Observatory of technology and society of Spain, Ontsi (2021), the advancement of digital technologies has been crucial in recent decades, transforming various sectors and enhancing the daily lives of people. In Spain, access to the Internet has grown significantly, with 89% of households having connections exceeding 100 Mbps and a 4% increase in the number of internet users since the onset of the pandemic. However, digital divides persist between urban and rural areas, where connectivity is lower, especially in smaller populations.

Despite these challenges, DIGITALISATION has created opportunities, particularly in technological employment, which has seen a 48% increase compared to the 28% growth in overall employment. This growth underscores the importance of technology as a tool for relocating digitally enabled jobs to rural areas, although significant differences in access persist based on age and geographic location.

María Vileya Espinosa
Interior design strategies for rural spaces. New
opportunities for emptied Spain in the XXI century.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

Teleworking has become a significant aspect of DIGITALISATION during the pandemic, with 32.9% of workers engaged in online jobs (Fernández, 2021). However, the demand for technological talent, especially in artificial intelligence and cybersecurity, surpasses the available supply, challenging the growth of the digital sector in Spain and Europe. To fully leverage digital technologies for revitalizing rural areas through employment and connectivity, it is essential to address existing disparities and ensure equitable access to digital transformation for all citizens.

2.3. ENVIRONMENTAL AND SOCIAL FACTORS IN MENTAL HEALTH: A COMPARISON BETWEEN URBAN AND RURAL SETTINGS

The year 2020 marked the onset of the COVID-19 pandemic in Spain, prompting severe lockdown measures and highlighting the critical importance of addressing mental health. The pandemic significantly increased anxiety, depression, and other mental health issues among the population, exacerbated by fears of infection and the strict confinement measures. Women faced heightened gender inequalities in paid and unpaid work due to school closures and increased caregiving responsibilities. These challenges underscored the need for political attention to mental health, with Spain pioneering efforts to integrate mental health strategies into national health policies.

Furthermore, urban environments have been found to impact cognitive health negatively, prompting researchers to explore ways to mitigate these effects through urban design changes. Studies like the ones from Lehrere (2009) and Anthes (2022) show that exposure to nature offers significant health benefits, including reduced stress and enhanced physical recovery. Embracing rural living and reconnecting with nature are seen as essential for improving overall well-being and counteracting the adverse effects of urban lifestyles.

In conclusion, prioritizing mental health, promoting nature-rich environments, and reconsidering urban design can collectively enhance societal well-being and individual quality of life.

2.4. YOUTH, RURALITY, AND SUSTAINABILITY: THE CLIMATE CRISIS

Rural depopulation in Spain has consequences not only socially and economically but also environmentally. The loss of traditional activities like agriculture and livestock is being replaced by large-scale industrial projects that cause pollution and environmental degradation. This includes mega-farms and intensive farming practices that harm the environment. Furthermore, the abandonment of practices such as pasture management increases the risk of forest fires.

To address this issue, Greenpeace proposes a comprehensive rural development policy that considers the climate crisis and biodiversity loss. This involves supporting sustainable local projects, refocusing European policies towards environmental protection, and promoting measures to attract population to rural areas, such as improving infrastructure and public services. However, is living in rural areas truly more sustainable than in cities? Some studies argue that, due to urban transport efficiencies, cities emit less CO2 in transportation. However, this is one of the few areas where cities contribute less to climate change. According to Greenpeace (2021), rural municipalities contribute 34% less to climate change and help preserve biodiversity 20 times more than urban areas.

The question remains: Would young people be willing to forgo the benefits of urban life in favour of sustainability? The organisation Climate of Change states in its article "Spanish Youth and Ecological Crisis: The Second Most Serious Problem" (Climate of change, 2022). This article comes from a survey that was conducted among young Europeans aged 15 to 35 in 23 countries. Their understanding and attitude towards climate change, migration, and the current economic model were measured. According to the survey, in Spain, seven out of ten young people (71%) are very or extremely concerned about climate change, surpassing the European average (46%). Behind economic situation and unemployment, they rank the ecological crisis as the second most serious problem facing the world. Additionally, 83% believe that consumption habits are not sustainable. [...]

Spanish youth attach great importance to combating climate change when choosing political leaders. The survey reveals that three-quarters have voted or would vote for politicians who prioritize the fight against climate change."

This information suggests that indeed, youth might be willing to lead a more sustainable life in rural areas. However, it is crucial to consider that they would not make this sacrifice without gaining something in return.

The Ministry of Agriculture, Fisheries, and Food, through the National Rural Network (RRN), conducted a survey to understand the perceptions and needs of young people in rural Spain (Ministry of Agriculture, 2021). The survey results highlight the overall satisfaction of young people with life in rural areas, emphasizing contact with nature and quality of life. Among the main needs identified by young people to remain in rural areas are:
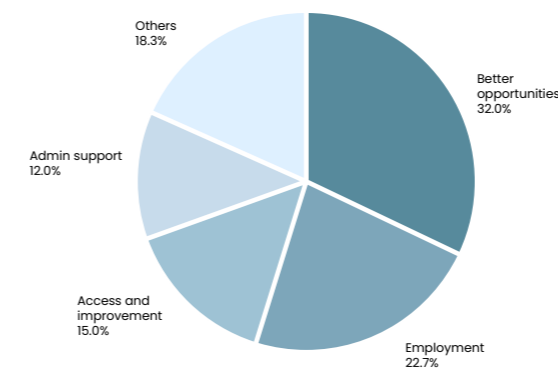

Image 3: Needs of young people to stay in rural areas. (Climate of change, 2022)

2.5. ACCESS TO URBAN HOUSING AND DEPOPULATION: IS RURAL HOUSING A VIABLE ALTERNATIVE?

In Spain, access to housing for young people aged 18 to 35 is a significant challenge. With increasing real estate prices and stagnant wages, many young individuals face a harsh reality: Housing has become increasingly unaffordable. This demographic finds themselves trapped in a cycle of expensive rentals or difficulties securing mortgages due to unstable employment or insufficient income. The shortage of affordable housing and inadequate housing policies further exacerbate the situation, leaving many young people struggling to find a place to call home in a market seemingly beyond their reach. According to the latest data from the Youth Council of Spain (Consejo de la Juventud de España, 2024):

- The youth emancipation rate in Spain stands at 16.3%, still well below pre-2008 financial crisis and COVID-19 crisis levels.
- To afford renting alone, a young person would need to allocate 93.9% of their annual net salary.
- Young women emancipate 6 percentage points more than young men but are less likely to live independently.

Spain's situation is among the most severe in the European context. Precarious employment and low wages are cited as the main reasons hindering housing access for a large segment of Spanish youth, according to the article from Fundación La Caixa's Social Observatory "Why Can't Young People Access Homeownership?" (Muñez-Fernández, 2019). There has been a notable decline in property ownership among those under 29 years old, dropping from 54% in 2008 to 26% currently. High real estate prices force many young people to spend over 60% of their monthly income on mortgage payments. However, financial standards recommend not allocating more than 30%-35% of income to mortgage payments, making homeownership very challenging for most young people. Renting has become a popular option, but prices are also rising. An emerging trend is the free transfer of property by family members who are owners, thus enabling youth emancipation.

The average price of a home in Spain far exceeds what most young people can afford, with the initial down payment posing an even greater challenge, averaging 45,366 euros, equivalent to 2.2 times the total annual income of a young household with at least two salaries.

This situation has made rural housing an attractive alternative for young people facing these difficulties. In the article "This is the alternative for young people to emancipate" from the newspaper 'La Razón' (Garrote A., 2023), it highlights that a growing number of young people are opting to move to rural areas where the cost of living is lower and housing more affordable. According to a recent analy-

María Vileya Espinosa
Interior design strategies for rural spaces. New
opportunities for emptied Spain in the XXI century.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

sis by Fotocasa (López, 2023, 11 septiembre), over 50% of those looking to move to rural areas are between 18 and 34 years old, a significant increase compared to previous months.

María Matos, Director of Studies at Fotocasa, points out that these areas offer housing prices more in line with the economic situation of young people. However, many young people dismiss certain rural areas due to lack of essential services or poor connectivity with urban centres.

Provincial governments such as the Diputación de León (s.f.) have launched grant calls aimed at young individuals wishing to access housing in municipalities of Leonese provinces with fewer than 20,000 inhabitants. The goal is to promote the settlement of young populations in rural areas and facilitate their emancipation. Grants are divided into three lines: acquisition and construction of housing, rehabilitation and renovation of housing, and rental assistance. Requirements include being between 18 and 36 years old (extendable to 39 years for young farmers), being a resident of a municipality in the province of León with fewer than 20,000 inhabitants, holding Spanish or EU member state nationality, and meeting certain income limits.

Specific requirements are set for each grant line, and applications must be submitted within 20 business days from the day following the publication of the call summary in the Official Bulletin of the Province.

2.6. POLITICAL INVOLVEMENT OF ESPAÑA VACIADA IN SPACE DESIGN

The Development Model drafted by the political group "España Vaciada" (Evaciada, 2023) includes housing and architecture among its measures. In the section "Table 8. Rural Area as a Space of Opportunities," it gathers several proposals mentioning housing and renovations as necessary to activate generational turnover. Here is where we can observe that the discipline of space design is not only useful but also required.

2.7. RURAL HOUSING: PAST, PRESENT, AND FUTURE - NEW TRENDS IN RURAL HOUSING

Thanks to a document from the Ministry of Agriculture, Fisheries, and Food, we can portray general characteristics of rural homes today. It reviews all these characteristics to consider. Additionally, it analyses the decisions that some residents are already making, which we can see documented on digital platforms where they upload video content of their processes.

Below, we present a comparison of some of the most significant characteristics between rural and urban housing:

Table 1: Comparative of rural and urban housing.

CATEGORY	RURAL HOUSING	URBAN HOUSING
Composition	Single-storey building, two max. **North:** Buildings with more than one dwelling, associated with greater modernity or with traditional structures such as farmhouses and rural houses. **South:** Predominance of single-dwelling houses, offering higher occupancy.	Vertical building
Antiquity	Acquire before 1950	Acquire after 1980
Use	Majority of second homes, especially in the countryside and along the coasts	Primary residence

CATEGORY	RURAL HOUSING	URBAN HOUSING
Facilities	Lower availability of: air conditioning, heating, computers. Complete equipment but of lower quality, becoming a differentiator in terms of quality of life. Greater number of freezers for storing provisions, replacing the traditional cellars, water tanks, pantries, etc.	Greater number of household appliances. Smaller space for freezers and refrigerators, as food consumption is more immediate.
Transport	More space for private garages and sheds. Use of motorcycles. Higher transportation costs due to poorer communication infrastructure.	Public transportation is more abundant. Private parking in shared garages and parking in public areas.
Furniture	It is similar. They occupy very similar percentages, and concerns regarding quality of life are closely aligned. A notable feature is the more traditional style of furniture in rural areas, with materials like wood, and pieces of furniture that have fallen into disuse (such as dressing tables, valets, etc.).	
Materials	Stone: Predominant in the north. Clay: Predominant in the plateau and the south. The south is often characterised by whitewashed façades. Wood: In disuse due to safety concerns. Cave: The most basic form of dwelling.	Brick constructions Concrete constructions Alternative system constructions

Rural housing is currently portrayed in this way. However, considering that young people are reclaiming these spaces due to the economic advantages they offer, it is interesting to observe how these living spaces are evolving under the influence of residents who are already taking the initiative. To analyse this, we examined videographic content shared by repopulators on social media to showcase their lifestyle.

In terms of layout, they often opt for open spaces instead of the traditional multiple partitions. Many choose to open up the ceilings to enhance verticality, increasing natural light and creating a sense of spaciousness. As for utilities, they closely resemble those in urban homes: extraction hoods, modern appliances, washer-dryer units, hot water, heating, and digital technologies. However, they don't seem to take full advantage of rural features to meet needs like refrigeration. In new layouts, the traditional "small sitting rooms" for informal meetings have largely disappeared, replaced by more functional living rooms or workspaces. This trend was also seen in urban homes.

For aesthetics, rather than consulting professionals, they are inspired by accessible trends on social media and the Pinterest app, where many projects are available. The predominant style is clean, with neutral colours, influenced by Nordic and Mediterranean designs.

Exterior interventions are also common, as they represent a significant advantage over urban housing. Swimming pools, garden plots, and outdoor leisure spaces are frequently found.

3. RESULTS

As a result of this social and geopolitical research, we have concluded a series of principles that, along with the knowledge acquired in interior design, allow us to propose design strategies for rural renovation projects. These thematic areas correspond to those previously studied and include relevant information for the design sections. These design proposals aim to develop projects that not only improve the living conditions of their inhabitants but also contribute to the revitalisation and sustainability of rural communities.

María Vileya Espinosa
Interior design strategies for rural spaces. New
opportunities for emptied Spain in the XXI century.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

Table 2: Results

SUBJECT	ITEMS TO ANALYSE	IMPLICATIONS FO THE SPACE DESIGN
Digitalisation	Spaces to work	When designing home workspaces, we need to prioritise proper lighting (500 lux recommended by the Generalitat Valenciana) and a connection to the outdoors. To reduce mental overload, choose a workspace with views of nature and indirect light. For acoustic comfort, situate the workspace away from busy areas of the home.
	Personal relationships	The first section highlights the importance of separating workspaces from the busiest areas of the home to reduce noise. However, it also stresses the need to avoid creating a sense of social isolation, often associated with rural settings, which this separation might amplify. A potential solution is to ensure that, while the workspace is kept apart from the most frequented areas, it maintains a connection to the outdoors.
	Sedentary Lifestyle	Experts foresee the physical impacts of remote work and its sedentary lifestyle. To prevent poor posture, maintaining ergonomic furniture proportions and using tools that allow mobility are vital. Specialists suggest height-adjustable workspaces and regular breaks.
Mental health	Connection with Nature	Creating gardens, allotments, farms, animal shelters, and/or outdoor sports spaces are some proposals for connecting with nature through outdoor areas. Encouraging the presence of such spaces through design and planning is a responsible action towards promoting mental health.
	Natural and Artificial Lighting	Lighting plays a crucial role in mood regulation within homes. Thus, a well-considered approach to artificial lighting is essential, particularly during the colder months, alongside the installation of large windows to maximise natural light utilisation.
	Leisure	We referenced Social Deprivation Syndrome, which affects vulnerable adults. Choosing a lifestyle detached from societal systems can lead to isolation, impacting physical and mental health with issues like sleep disturbances, weakened immunity, cardiovascular problems, and anxiety. To combat this, homes should include spaces for leisure and social interaction, with versatile indoor or outdoor rooms offering an effective solution.
Sustainability	Bioefficient Architecture	Utilising bioenergetic or bioclimatic architectural resources to minimise the energy impact of new constructions or renovation projects as much as possible.
	Efficient Installations	When updating installations, selecting the most efficient options with the lowest environmental impact is a sustainable strategy to consider during space rehabilitation.
	Circular Economy	Maximising the use of existing materials and elements in the intervention area, or repurposing them in other locations (such as windows, doors, furniture, or stone and ceramic finishes) wherever feasible, is a key approach to reducing environmental impact.
	Respecting the Identity of Spaces	Preserving the unique identity of spaces is a sustainable approach that allows us to benefit from the qualities each environment offers while implementing measures to ensure comfort in our daily lives.
	Traditional Materials	The characteristic materials of each location reflect the resources available in the area. Their use not only helps maintain the physical identity of spaces but also positively influences the local economic system.

SUBJECT	ITEMS TO ANALYSE	IMPLICATIONS FO THE SPACE DESIGN
Sustainability	Restoration of Original Pieces	Restoring antique wooden furniture has grown increasingly popular, breathing new life into pieces while allowing for customisation to suit personal tastes. This practice promotes sustainability by reducing consumption's environmental impact and encouraging eco-friendly habits. Moreover, the aesthetic options are vast, often inspired by ideas from digital platforms.
	Job Creation	When carrying out an intervention, utilising local resources, such as hiring nearby workers whenever possible, promotes self-sufficiency and contributes to economic regeneration. Undertaking a housing rehabilitation project can thus become a first step towards broader collective initiatives that benefit the community.
Housing and Urbanism	Multipurpose Rooms	Building on the previous points, creating multipurpose spaces is an effective way to provide areas for leisure, addressing needs commonly found in cities, such as going to the cinema, gym, library, creativity spaces, or meeting areas. One efficient approach to achieve this is using versatile furniture that can divide the room into different functional zones.
	Urbanism of Community Spaces	Urbanism is a tool that can serve the same purpose as the previous conclusion (multipurpose rooms) on a public scale. In this way, we can foster a sense of community by making various common goals available to all citizens, such as outdoor sports spaces, areas for animals like dog parks, playgrounds, community gardens, and more.
	Recovering Sustainable Spaces Used When Comforts Were Limited	Research shows that rural homes tend to have more extensive refrigeration equipment, likely due to storing larger quantities of food consumed more slowly than in cities. Traditional spaces like cellars, pantries, and water tanks are increasingly replaced by modern freezers. Reviving these traditional cooling methods, which harness natural environmental properties, offers a sustainable way to preserve the authenticity of rural homes.
	Recovering the Kitchen as the Heart of the Home	The kitchen and traditional food preparation have long been central to gatherings, particularly in rural areas. Therefore, in a potential redesign of housing layouts, maintaining this spatial hierarchy—by leaving enough space for both communal gatherings and traditional cooking—represents an interesting choice when conceptualising these new spaces.
	Open spaces	In line with the previously mentioned concept of multipurpose rooms, opening up spaces to maximise light and versatility could be a wise choice. One approach could be uncovering the original ceilings and beams to enhance the verticality of the homes.
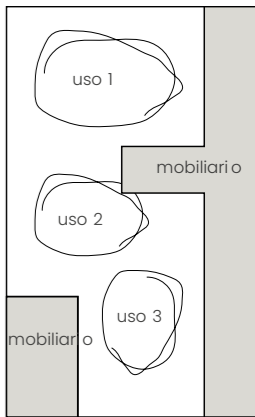
4. CONCLUSIONS

From this work, we can conclude that current rural homes have indeed become outdated and do not adapt to the new lifestyles of younger generations. Therefore, rehabilitation projects are necessary to give them a new use and facilitate generational replacement in these localities, as mentioned by the political group "España Vaciada" in its Development Model. Through interior design efforts, it is possible to reinterpret spaces designed more than 50 years ago to adapt them to contemporary comforts using the proposed strategies. Although the regeneration strategy is based on introducing new elements to the existing traditional ones, it is essential to include traditional materials and characteristic elements to avoid cultural and architectural whitening of historic localities.

The objectives of this work are met by analysing the living conditions in both rural and urban environments and contextualizing

María Vileya Espinosa
Interior design strategies for rural spaces. New opportunities for emptied Spain in the XXI century.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

them for new generations. Thanks to a methodology that analyses current social concerns, we obtain information on how young people understand spaces, which allows us to develop meaningful renovation projects. To fully achieve them, it would be necessary to disseminate this project.

This analysis contextualizes the situation of the "España Vaciada" in the 2020s and highlights the issues that push young people to opt for rural housing for economic reasons, facilitated by digital work. By including principles of sustainability (climatic, economic, architectural, etc.), we contribute from design to protecting the identity of rural spaces, promoting the work of local trades, traditional elements, and the recovery of objects of historical value.

This work has been developed in alignment with the discourse of political associations that defend this issue, as a show of respect for those who suffer these consequences and know them better than anyone.

The adaptation of homes can combine spatial traditions with urban trends. This can be done through very simple details like materiality or by maintaining original elements. Successful projects have been carried out from this perspective.

This paper provides information through which we can understand the difficulties young people face in living in large cities. Indeed, these hostile conditions are driving the young population toward the countryside due to its economic advantages over cities. It is easy to understand the difficulties that can arise in an overpopulated society where investment is high but demand surpasses it. In the countryside, the scenario is the opposite: low supply for the existing demand. This creates a vicious cycle that makes life unsustainable for many people both in the city and in the countryside.

We conclude that digital connectivity is directly related to the age group of the population residing in a locality. This means that both urban and rural young people are digital natives, offering them a common characteristic that can help them transition smoothly, especially in the labour sector.

4.1. PERSONAL APPRAISAL

This work arises from a personal motivation to explore issues within the field of interior design that concern similar population groups to mine. Undertaking the journey to find some answers and give context to ongoing events has been a rewarding experience, providing alternatives to the housing and precarity problems faced by young people today in their pursuit of a sustainable quality of life.

Analysing certain social events not only confirms my personal observations but also reveals the systemic nature of the issues. While we cannot solve everything with a single proposal, if various thematic and professional fields offer solutions in the same direction, it becomes easier to make the right steps forward.

That is the intent of this research, and I consider it fulfilled. This work opens the door to a range of possibilities regarding the design of rural spaces. More work is needed on:

- Studying the best use of materials for improved sustainability while enhancing comfort for residents.
- Expanding the geographical scope of the study and making more specific comparisons between localities in the southern and northern areas, considering their architectural morphological differences.
- Addressing strategies for the adaptation of exterior and public spaces that interact with living spaces, as both together form a comprehensive habitable environment for humans.

5. BIBLIOGRAPHY

- Anthes, E. (2022). La arquitectura interior: *Cómo su diseño influye en nuestro comportamiento, salud y bienestar.* [Interior Architecture: How Its Design Influences Our Behaviour, Health, and Well-being]. Los libros de la Catarata.
- Barómetro de Opinión de la Infancia y Adolescencia 2021-2022 [Barometer of Opinion on Childhood and Adolescence] (2023). UNICEF España. https://www.unicef.es/publicacion/barometro-infancia-adolescencia/informe-2021-2022
- Climate of Change. (2022). *Juventud española y crisis ecológica: el segundo problema más grave.* [Spanish youth and the ecological crisis: The second most pressing issue.] Climate of Change Spain. https://climateofchange.info/ spain/la-juventud-espanola-situa-la-crisis-ecologica-como-el-segundo-problema-mas-grave/
- Consejo de la juventud de España (2024). *Las personas jóvenes reclaman más ambición frente a la crisis climática.* [Spanish youth and the ecological crisis: The second most serious problem]. https://www.cje.org/las-personas-jovenes-reclaman-mas-ambicion-frente-a-la-de-crisis-climatica/
- Del Molino, S. (2022). *La España vacía.* [Empty Spain]. Alfaguara.
- De Luca. C, Tondelli. S , Aberg.H.E (2020). 'The Covid-19 pandemic effect in rural areas; Turning challenges into opportunities for rural regeneration'. TeMA *Special Issue: COVID-19 vs CITY-20.* 119-132. http://dx.doi.org/10.6092/1970-9870/6844
- Diputación de León (s. f.). *La Diputación de León ayuda a 344 jóvenes a encontrar una vivienda rural y saca la cuarta convocatoria.* https://www.dipuleon.es/newsSearchAction/Diputacion/Noticias_de_Diputacion/rur24?f=lastnews
- Evaciada. (2023, 25 mayo). *FederACIon - España vaciada ¡Es el MOMENTO!* . España Vaciada. https://xn--espaavaciada-dhb.org/federacion/
- Fernández, A. M. (2021, 10 noviembre). *La brecha digital persiste en la España Vaciada, pese a crecer un 1,6% la población rural que accedió a Internet en 2020.* [The digital divide persists in Empty Spain, despite a 1.6% increase in the rural population accessing the internet in 2020]. El Español. https:// www.elespanol.com / inver tia / empresas/tecnologia / 20211110/digital -persiste-espana -vacia da -poblacion -accedio -internet/ 626187866_0.html#:~:text=As%C3%AD%2C%20el%2091%2C1%25,%2C5%25%20dispon%C3%ADa%20de%20conexi%C3%B3n.
- Garrote, A. (2023, 7 noviembre). *Esta es la alternativa de los jóvenes para poder emanciparse.* [This is the alternative for young people to achieve Independence] La Razón. https://www.larazon.es/economia/esta-alternativa-jovenes-poder-emanciparse_20231107654a-186432499c00010aabb0.html
- Geostat (2021). *Population distribution.* https://ec.europa.eu/assets/estat/E/E4/gisco/website/census_2021_grid_map/index.html
- Greenpeace España (2021). *El papel clave de la España rural frente a la emergencia climática y la pérdida de biodiversidad.* [The key role of rural Spain in the face of the climate emergency and biodiversity loss]. https://es.greenpeace.org/es/wp-content/uploads/sites/3/2021/04/rural-web.pdf
- Instituto Nacional de Estadística (2018). *Diagnóstico Eje Despoblación.* [Diagnosis of the Depopulation Axis]. Comisionado del Gobierno frente al Reto Demográfico. Ministerio de Política Territorial y Función Pública. https://www.miteco.gob.es/content/dam/miteco/es/reto-demografico/temas/analisis-cartografia/diagnostico_eje_despoblacion_tcm30-517769.pdf
- Lehrer, J. (2009). How the city hurts your brain-And what you can do about it. *Boston Globe, 2.*
- López, A. (2023, 11 septiembre). Los jóvenes, los más interesados en irse a vivir a una zona rural. [Young people are the most interested in moving to a rural area]. Fotocasa Life. Fotocasa Life. https://www.fotocasa.es/fotocasa-life/compraventa/los-jovenes-son-los-mas-interesados-en-irse-a-vivir-a-una-zona-rural/
- Magallón Rosa, R. M. (2016). El ADN de la generación Z: entre la economía colaborativa y la economía disruptiva. [The DNA of Generation Z: Between the Sharing Economy and the Disruptive Economy]. *Revista de estudios de juventud, 114,* 29-44.
- Ministry of Agriculture (2021). *Los jóvenes españoles valoran vivir en el medio rural, aunque demandan mejoras en los servicios* [Spanish youth value living in rural areas, although they call for improvements in services.]. https://www.mapa.gob.es/es/prensa/ultimas-noticias/los-j%C3%B3venes-espa%-C3%B1oles-valoran-vivir-en-el-medio-rural-aunque-demandan-mejoras-en-los-servicios/tcm:30-573329
- Muñez-Fernández, G.A (2017). Juventud y mercado de la vivienda en España: análisis de la situación. [Youth and the Housing Market in Spain: An Analysis of the Situation]. *Revista de Estudios de Juventud, 116.*

María Vileya Espinosa
Interior design strategies for rural spaces. New
opportunities for emptied Spain in the XXI century.

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

- Ontsi. (2021). *Tecnología + Sociedad en España 2021.* [Technology + Society in Spain 2021]. https://www.ontsi.es/es/publicaciones/Tecnologia-Sociedad-en-Espana-2021#:~:text=Empoderamiento%20digital,32%20puntos%20porcentuales%20desde%202011

- Rius, M. (2023, 20 noviembre). *¿Qué inquieta a la actual generación de jóvenes?* [What worries today's youth?]. La Vanguardia. https://www.lavanguardia.com/vida/20231120/9391198/que-preocupa-futuro-jovenes-espanoles.html

- Vayá, F. S., & González, E. S. M. (2020). Casos de éxito de desarrollo rural en Europa: una primera aproximación a su aplicabilidad en España. [Success Stories of Rural Development in Europe: A First Approach to Their Applicability in Spain]. *International Review of Economic Policy, 2*(2), 46. https://doi.org/10.7203/irep.2.2.19350

Julien Delannoy; José Antonio González Casares
Investigating Biomimicry in Design: Results from a Research
Workshop at L'École de Design Nantes Atlantique

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

INVESTIGATING BIOMIMICRY IN DESIGN
RESULTS FROM A RESEARCH WORKSHOP AT L'ÉCOLE DE DESIGN NANTES ATLANTIQUE

Julien Delannoy [1]; José Antonio González Casares [2]

1. Introduction

This article presents the findings of a research workshop conducted at L'École de Design Nantes Atlantique, focused on exploring the possibilities biomimicry offers in design. The workshop aimed to investigate how natural organisms can inspire innovative approaches to product and systems design.

To achieve this, the workshop employed a hands-on research methodology centred on a biomimicry table—a curated collection of organisms selected for their potential to inspire design solutions. Participants were encouraged to study the organisms' structures, functions, and behaviours, translating these insights into conceptual and practical design outcomes. The interdisciplinary nature of the workshop was further enriched by the collaboration of a biologist, who provided scientific guidance and ensured the biological accuracy of the participants' analyses.

This investigation not only explored the application of biomimicry in design processes but also demonstrated the value of integrating biological expertise within creative practices. The workshop outcomes underline the potential of biomimicry as a tool for sustainable innovation, fostering a deeper understanding of nature's role in addressing complex design challenges.

The project was undertaken by three teams of international students, with the primary objective of selecting an area on the Île de Nantes, where the school is located, and designing a space for the island's residents using biomimetic design principles. The project was led by a team of professors: José Antonio González Casares from ESADA and Julien Delannoy from L'École de Design.

We would like to extend our deepest gratitude to L'École de Design Nantes Atlantique and its outstanding Erasmus team, led by Zoe Lacey, for the incredible experience and their immense effort in making the International Week such a remarkable success. Additionally, our sincere thanks go to the Erasmus team at ESADA and their coordinator, Félix Guerrero, for their enthusiasm and dedication in preparing the project. Finally, a special thanks to the team at Biomimicry Granada (https://biomimicrygranada.com/), particularly Abraham Ortega and Theresa Millard, for preparing the materials and providing the essential scientific support that ensured the workshop was both productive and inspiring.

Keywords: Sustainable, biomimicry design, Nantes island, research in design.

[*]**Corresponding authors:** j.delannoy@lecolededesign.com [1]; josegonzalez@esada.es [2],

Julien Delannoy; José Antonio González Casares
Investigating Biomimicry in Design: Results from a Research
Workshop at L'École de Design Nantes Atlantique

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

PROJECT 1

DESIGNING A PAVILION BY THE LOIRE

PROPOSAL FOR A PROTECTIVE AND REGENERATIVE SPACE. AMPHIBIAN SHELTER

Josephine Baudu; Carolina Capdevila; Francesco De Toni; Emma Rebelo; Chhavi Rijhwaney

Abstract. Our workshop project integrates biomimicry and relaxation, drawing on nature's evolutionary designs for human-centred engineering. It serves both students from Nantes Atlantique School of Design, managing intense creative workloads, and Nantes residents seeking balance between work and personal life.

Inspired by the rounded, protective forms of frog eggs, the structure evokes a sense of security. Colour therapy is employed to boost morale, while the proximity to water enhances relaxation through its soothing sounds. The project provides a protective, restorative space within the city, offering users a moment of pause and connection with nature

1. INTRODUCTION AND OBJECTIVES

The project aims to create a 25m²–100m² space on the island in Nantes, near the School of Design, for students and local residents to foster creativity, reconnect with nature, and support well-being. Located at "La cale 2," near the Loire River and the Yellow Crane, the site offers a serene atmosphere ideal for relaxation, alongside historical and cultural significance associated with Nantes' industrial past.

While challenges include a 7% slope, slippery conditions, tides, and local vegetation, the site's natural light, tranquillity, and panoramic views make it ideal for an inclusive, sustainable design that respects biodiversity.

- Create a space to regenerate and take care of yourself thanks to colour therapy.
- Inspire students to escape reality and connect with nature.
- Design innovative and sustainable structures inspired by the forms of nature using biomimetic.
- Learn about the different ways you can relax and reconnect with yourself thanks to the environment.
- Discover yourself and your surroundings in a new creative way thanks to the path and the different colours/point of view proposed to you.
- Awaken the mind and senses to attain mindfulness and help people discover themselves.

1.1. STATE OF THE ART

Well-being refers to a good quality of life, both physically and mentally. However, stress remains a significant issue, leading to workplace absenteeism and persistent anxiety among students, with few seeking treatment (Regehr, 2012). Our project aims to provide a natural space to alleviate stress, incorporating colour therapy. Although the therapeutic use of colours emerged around the 1950s (Birren, 2006), this method leverages specific wavelengths from colours to positively influence the body and mind, particularly when combined with meditation.

The design draws inspiration from biomimicry, specifically the egg frog. Frog eggs symbolise protection, aligning with the project's intent to create a safe and nurturing space. These eggs develop near water in moist environments and cluster in gelatinous structures, which mirror protective molecules and melanin patterns (Byju's, 2022). This form emphasises protection and integrates naturally with the site's context.

The Watching Tower in Aarhus, Denmark, designed by Studio Olafur Eliasson (2011), inspired the application of colour to alter perceptions of the environment and self. Immersion in colour fosters curiosity and a shift in perspective. Additionally, we incorporate principles of land art, creating ephemeral structures that interact with nature over time. For instance, a pinecone-like structure made from beach rocks disintegrates with tides, symbolising impermanence and harmony with nature.

2. METHODOLOGY

The project began with identifying user needs, followed by analysing the location, its advantages, and challenges. Inspired by biomimicry, particularly the concept of protection, we considered various functions for the space, such as exercise, art therapy, and meditation, ultimately deciding on colour therapy. Initial sketches explored multiple forms, leading to the adoption of the frog egg as the primary shape, which symbolises protection and aligns with the theme of biomimicry.

The design incorporates smaller rooms for chromotherapy and larger rooms featuring information on colour therapy and biomimicry, linked to an Instagram platform. A pathway on the water adds movement and sound, encouraging users to reconnect with themselves and their environment. The frog egg shape was chosen for its natural aesthetic and its association with melanin, the molecule responsible for colours in frogs, reinforcing the connection between form and function.

Feedback from class presentations highlighted areas for improvement, including material selection, slope safety, and enhancing the link between colour changes and biomimetic shapes. These suggestions were integrated into the final design, creating a space that aligns with nature's rhythm and supports user well-being.

3. RESULTS

The final structure incorporates sustainable and biodegradable materials. The floating platform will be constructed from cork, a durable material capable of holding weight while naturally degrading over time. The structure's flooring and furniture will use Sulapac, a type of recycled wood, ensuring both durability and eco-friendliness. Transparent domes will be made of bioplastic, allowing for light play and colour effects.

As envisioned, all materials will gradually disintegrate, symbolising the project's impermanence. This process reflects the metaphor of a hatching egg, signifying the transition to a new life phase as the structure detaches and blends into nature.

4. CONCLUSIONS

Overall, we achieved most of the objectives, but for some, we could have explored further, such as in the principles of construction and the use of materials. We could have developed the concept of escaping reality and connecting with nature more thoroughly. Currently, this idea is approached in a limited way, focusing on creating an ambiance, but users do not have a direct connection to nature.

Image 1: Final image of the project.
Own elaboration

Image 2: Final model.
Own elaboration

Julien Delannoy; José Antonio González Casares
Investigating Biomimicry in Design: Results from a Research
Workshop at L'École de Design Nantes Atlantique

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

PROJECT 2

EXTERIOR DESIGN AND BIOMIMICRY

PROPOSAL OF A SHARING SPACE FOR DESIGN STUDENTS AND INHABITANTS OF NANTES.
THE FINGERPRINT FORUM

Josephine Baudu; Carolina Capdevila; Francesco De Toni; Emma Rebelo; Chhavi Rijhwaney

Abstract. This project applies biomimicry and sharing to create a multifunctional space that fosters interaction and creativity. Biomimicry, inspired by evolutionary solutions from nature, is integrated into human engineering principles. The space is designed primarily for students of Nantes Atlantique Design School but is accessible to the wider public, including Nantes residents. The project serves three core functions: Overcoming Creative Blocks: Providing a collaborative environment where students can engage with outsiders to gain new perspectives on their projects. Cultural Exchange: Facilitating language learning and cultural integration, particularly for foreign students, to promote international understanding. Human Books: Hosting conferences where individuals share personal experiences, encouraging knowledge exchange.

The design draws inspiration from the fingerprint, a natural and human symbol rooted in the Fibonacci sequence, which appears throughout nature. This element highlights the connection between human identity and the natural world, embodying both human creativity and the impact humans leave on their environment.

1. JUSTIFICATION

The project aims to create a tranquil space near the Nantes Design School, intended for both students and residents of Nantes. Located on the island of Nantes, near the popular Machines of the Isle, the site is a sheltered, semi-hidden underground area, offering protection from the wind while allowing sunlight to interact with its features. Its contrasts—height, natural vegetation, and human-made materials like wood and concrete—make it an ideal retreat from the urban environment.

Challenges include potential noise from a nearby playground and limited air circulation due to the site's sheltered nature, necessitating thoughtful design solutions. The target audience includes French and international students from nearby art-focused institutions, as well as residents. The space is designed to encourage cultural and intergenerational exchanges, fostering creativity, collaboration, and the appreciation of language and diversity, while serving as a hub for learning and project development.

Creating a space for exchange between students and residents of Nantes;
- Offering new sharing experiences
- Creating an environment conducive to exchanges that adapts to the functions of the place.

- Creating harmony between location and biomimicry.

1.1. STATE OF THE ART

The Fibonacci sequence, an infinite series where each number is the sum of the two preceding it, appears frequently in nature, such as in the shape of snail shells, the arrangement of leaves, the curvature of animal horns, and the number of flower petals.

Fingerprints, though unique and subtle, are powerful graphic forms. British artist Chris Drury's Fingermaze transforms this small-scale element into a walkable large-scale maze, resonating with the micro/macro principle.

In ancient Greece (5th century BC), agoras served as central spaces for citizens to discuss politics, religion, trade, and social issues. Similarly, modern public speaking spaces like Speaker's Corner in Hyde Park, London, allow open expression and debate. Our chosen location, on the bank of the Loire River, reflects the geographical significance of such gathering spaces, traditionally positioned in central or port areas.

2. METHODOLOGY

Our creative process began with an exploration of biomimicry, followed by sketches testing va-rious shapes and scales while considering the site's spatial constraints. Influences included the Fibonacci sequence, site-specific advantages and challenges, material studies from workshops, and the relationship between humans and nature—a central theme in our project.

We ultimately focused on the fingerprint as a symbol of the connection between humans and nature. Feedback from the "6 Thinking Hats" process led us to refine our design, incorporating more biomimicry elements such as the fibrous texture of palm trunks and the internal structure of cacti.

The final concept is an exchange space shaped like a fingerprint, visible from above but transforming into a more intimate setting at ground level. Rounded seating, curved sunshades, and organic structures define the space. The walls feature honeycomb-inspired alcoves housing plants and flowers, symbolising growth and creativity. Arches in the walls cater to viewers of different heights, encouraging interaction.

Visitors can leave their imprint using Moroccan clay pigment, contributing to the evolving "DNA" of the site. Seating is arranged amphitheatre-style to foster conversation or host lectures, while integrated sunshades provide comfort during hotter periods. This interconnected design unites the space's functions, fostering a meaningful relationship between nature and humanity.

3. RESULTS

Our structure takes the form of a fingerprint through interconnected modules such as walls, benches, and sunshades. These elements integrate biomimetic principles and materials, drawing inspiration from nature. For instance, the walls and benches feature cactus-like cellular patterns. In the walls, these cells support plant growth, facilitate airflow, and provide an open view of the surroundings. Additionally, the material absorbs water and distributes it to plants, creating a semi-self-sustaining system. The benches incorporate similar patterns to ensure structural strength while minimising material use. Palm fibre is included to further support plant growth.

To ensure the structure's upkeep, a student association, Le Bureau des Plantes (The Plant Bureau), would be established. This group would oversee site maintenance and manage the Fingerprint Forum Instagram account, coordinating events and activities. This initiative would help sustain the project for at least one year.

4. CONCLUSIONS

In conclusion, we have designed a sharing space centred on humans and guided by biomimicry principles. While we achieved our objectives to varying degrees, future improvements could focus on better integrating the location's environment. Expanding the project within the city could involve sites with elevated viewpoints to enhance visibility of the fingerprint design. The scalable structure allows for modifications, supporting its evolution while maintaining its focus on connection and biomimicry.

Image 3: Final image of the project.
Own elaboration

Image 4: Final model.
Own elaboration

Julien Delannoy; José Antonio González Casares
Investigating Biomimicry in Design: Results from a Research
Workshop at L'École de Design Nantes Atlantique

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

PROJECT 3

URBAN DESIGN IN THE CITY OF NANTES
REDESIGNING THE BANKS OF THE LOIRE. THE GROWING ISLAND: DISCOVER, TAKE A
BREAK, LEARN, EXPERIMENT AND (RE)CONNECT TO NATURE!

Selma Gobin; Mouli Gupta; Lisa Hervy; Shénoa Huault; Jodie Maugin

Abstract. Our project - the growing island of biodiversity, was created around the biomimicry principles. It is a method used in design, which consists in mimicking and understanding all the details, patterns and techniques that nature has to offer. This method allowed us to create an urban oasis for people to escape the city and to (re)connect with nature.

Promoting sustainability in design is the goal of tomorrow and of l'Ecole de design, we invite students and citizens of the world to join us on the island. The users will go through moving sunproof trees, seashells exhibitions, spider nets, and an immersive algae workshop to open up creativity. A change of scenery in the city of Nantes is a great opportunity and the Growisland website accompanying this urban space gives even more details and fun insights to get even more interested in the project.

1. JUSTIFICATION
Our project is located on the Fernand Trouan dock near the Anne de Bretagne bridge, currently an underused metallic structure with few benches. It offers a serene escape, blending nature, buildings, and water, with sounds of water and wind creating a rare urban feature. However, challenges include noise from the metal flooring, its transparent surface causing discomfort for those with vertigo, and limited accessibility due to stairs.

The brief required a space near the school campus for students and citizens, using biomimetic principles to foster well-being, creativity, and connection with nature. Inspired by the dock's island-like appearance, the design incorporates biodiversity through elements reflecting trees, flowers, and seashells, while addressing issues like sun exposure, noise, and flood risk.

The project aims to connect students and residents, creating a venue to share student projects and host sustainability workshops, welcoming all curious participants.
- Raise Awareness of Sustainability: Highlight sustainable projects by L'Ecole de Design, showcasing their approach to tomorrow's design.
- Display sustainable projects and demonstrate their design processes.
- Provide a space for users to connect with nature, unwind, and reflect on the projects.
- Educate visitors on algae's benefits and its role in sustainable design, allowing them to harvest and grow algae at home in a glass cube inspired by natural fractal patterns.
- Serve as a living exhibition of how biomimicry inspires harmonious, nature-integrated design.
- Encourage visitors to explore, observe the structure, appreciate the environment, and engage with the site's sounds and features.

1.1. STATE OF THE ART
To better understand and refine our project, we researched similar initiatives. The Bio-ID lab's algae-infused material, which absorbs water pollution and provides sun protection, served as an inspiration. Our project draws on various natural principles to address challenges, similar to a self-sufficient ecosystem, using biomimicry to find sustainable solutions. The "Ture Tower" by Victor Ortiz, with its evolving platforms, also influenced our design.

Biomimicry involves replicating nature's solutions, developed over 3.5 billion years, to create efficient human-made designs. This includes studying shapes, textures, and functions. Designers can apply this approach to architecture, objects, and sustainable projects.

Our design draws inspiration from several natural elements: the pine cone (which opens and closes depending on moisture), the spider's web (strong and shock-absorbent), seashells (resistant to pressure), mangrove trees (able to absorb water pressure and create shade), and algae (which absorb CO2 and produce oxygen). We also reference flowers (which track the sun) and the water cycle in trees.

Our pavilion, inspired by an island oasis, incorporates natural forms like seashells and uses layering systems for structural reinforcement. The space organically extends to create a relaxing beach area, blending algae and flower-inspired trees. All elements harmonise, creating a sanctuary distinct from the surrounding city.

2. METHODOLOGY
Our design process involved several creative steps, illustrated by sketches in the appendices. The hats activity provided valuable feedback. Some found the connections between elements unclear, while others appreciated the diversity, which created a unique biodiversity. This led to the idea of an "island" to unify our spaces, which suited the open, tidal platform location. A comment about the space between the platform and wall further inspired this concept.

To strengthen the "growing island" idea, we decided to plant climbing vines at the workshop building's base, which would reshape over time. Vines, typical to Nantes, were chosen to connect the project to the local culture. The grooves in the architectural ceramics would support the plant's growth.

To ensure accessibility, including for wheelchair users, we designed a hydraulic elevator inspired by water cycles and tree water movement. This elevator connects three levels: the platform floor, the island on the platform, and the underground algae gardens for the workshop.

To promote the space, we created a website featuring information on the island, student projects, and updates on the growing plant. It also includes workshops on algae, environmental information, and daily sustainability quotes.

Final views of each element can be seen in the drawings.

3. RESULTS
We created an urban oasis using biomimicry, focusing on integrating sustainability into the city in an engaging way for all, regardless of design knowledge. The connection with the school and students was key, as we envisioned using and showcasing the space ourselves. Our research led to diverse structural elements, immersing us in biomimicry techniques and enabling the creation of a biodiversity island. With more time, we would have explored how the tide could influence the structure's evolution, allowing the space to grow in new, creative directions.
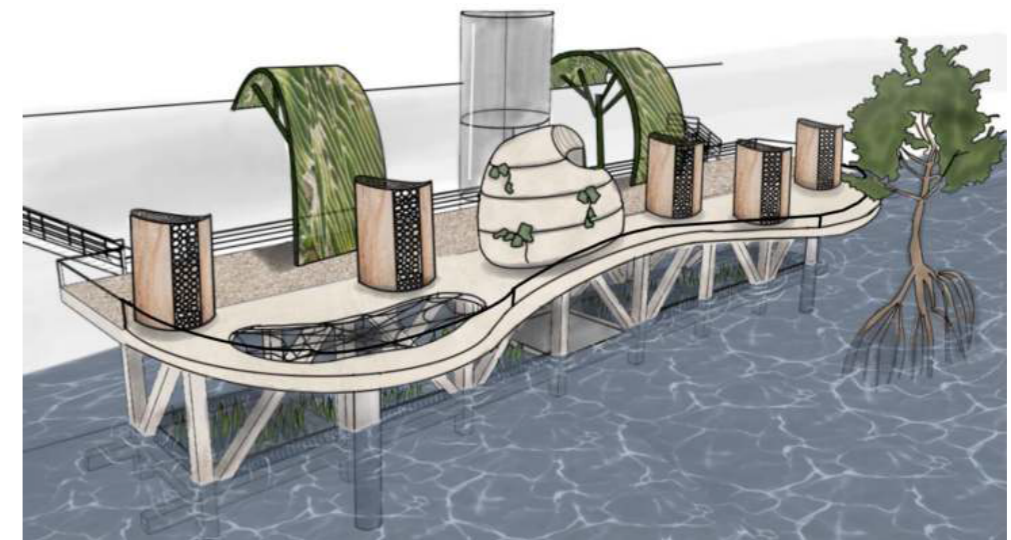

Image 4: Final design.
Own elaboration

Julien Delannoy; José Antonio González Casares
Investigating Biomimicry in Design: Results from a Research
Workshop at L'École de Design Nantes Atlantique

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

2. BIBLIOGRAPHY

PROJECT 1
- Birren, F. (2006). Colour Psychology and Color Therapy: A Factual Study of the Influence of Colour on Human Life. Kessinger.
- Byju's. (2022, 4). The eggs of frogs do not have shells for protection- yet they are safe in the water- How-. https://byjus.com/question-answer/the-eggs-of-frogs-do-not-have-shells-for-protection-yet-they-are-safe-in-the-water-how/#
- Henry Koskinen (2019). Mitosis or cell division of frog spawn. https://www.alamy.com/mitosis-or-cell-division-of-frog-spawn-image245317341.html
- Regehr, C., Glancy, D., & Pitts, A. T. (2013). Interventions to reduce stress in university students: A review and meta-analysis. Journal of Affective Disorders, 148(1), 1-11. https://doi.org/10.1016/j.jad.2012.11.026
- Studio Olafur Eliasson (2011). Your rainbow panorama [installation]. Aarhus, Denmark

PROJECT 2
- Aydi, S., Sassi Aydi, S., Rahmani, R., Bouaziz, F., Souchard, J. P., Merah, O., & Abdelly, C. (2023). Date-Palm Compost as Soilless Substrate Improves Plant Growth, Photosynthesis, Yield and Phytochemical Quality of Greenhouse Melon (Cucumis melo L.). Agronomy, 13(1), 212. https://doi.org/10.3390/agronomy13010212
- Pavé Coquillage by engineering school ESITC Caen and developed by ALKERN. Website: https://www.alkern.fr/products/pave-coquillage/

PROJECT 3
- Ceebios. (2024, April 11). Osez Joséphine, un écoquartier bioclimatique. Ceebios. https://ceebios.com/2022/11/03/osez-josephine-un-ecoquartier-bioclimatique/
- Circubuild. (2020, March 11). Des protections solaires inspirées des pommes de pin. https://www.circubuild.be/fr/actualite/des-protections-solaires-inspirees-des-pommes-de-pin/
- Designboom. (2023, August 17). like fungal growths, lush terraces will climb são paulo's urupê tower by victor ortiz. Designboom | Architecture & Design Magazine. https://www.designboom.com/architecture/urupe-tower-victor-ortiz-architecture-sao-paulo-brazil-08-17-2023/
- Flower structures protect pollen — Biological Strategy — AskNature. (n.d.). AskNature. https://asknature.org/strategy/flower-structures-protect-pollen/
- L'avant gardiste. (n.d.). Lama à faire pousser. L'avant Gardiste. https://www.lavantgardiste.com/products/lama-a-faire-pousser
- Les pommes de pin s'ouvrent et se ferment en réponse aux conditions météorologiques — Stratégie biologique — AskNature. (n.d.). AskNature. https://asknature.org/fr/strategy/pine-cones-open-and-close-in-response-to-weather/
- Projects - Little Island - MNLA. (n.d.). https://mnlandscape.com/projects/Pier_5

María Dolores Gutiérrez Guerrero
The Impact of the European Union on Graphic Design: An Analysis of Its Brand
Presence in the Imagotypes of Private Educational Institutions in Madrid (2023)

THE IMPACT OF THE EUROPEAN UNION ON GRAPHIC DESIGN

AN ANALYSIS OF ITS BRAND PRESENCE IN THE IMAGOTYPES OF PRIVATE EDUCATIONAL
INSTITUTIONS IN MADRID (2023)

María Dolores Gutiérrez Guerrero[*]

Abstract. This study investigates the presence of the concept of Europe in the naming of Spanish companies, examining how the word "Europe" and its derivatives are represented in imagotypes, along with the accompanying graphic elements. The methodology employed is known as content analysis, applied with a quantitative approach. The research corpus sample consists of eighteen elements, which are the brand images of private educational institutions in Madrid for the year 2023, according to the website of the Ministry of Education and Vocational Training (educacion.gob. es). The results show recurring patterns in the design of brand images through the imagotypes that evoke the idea of Europe, confirming the cultural and business link between Spain and Europe.

Keywords: Advertising, brand image, imagotype, naming, Europe, graphic design.

Resumen. Este estudio investiga la presencia del concepto Europa en la denominación de empresas españolas, examinando cómo en los imagotipos aparece representada la palabra Europa o sus derivados y los elementos gráficos que la acompañan. La metodología usada responde al conocido como análisis de contenido al que se le ha aplicado un enfoque cuantitativo. El corpus que compone la muestra investigada contiene dieciocho elementos que son las imágenes de marca de centros de enseñanza privada de Madrid en el año 2023 según la web del Ministerio de Educación y Formación Profesional, educacion,gob.es. El resultado es la identificación de unos patrones comunes en el diseño de las imágenes de marca a través de los imagotipos que evocan la idea de Europa, esto confirma el vínculo entre España y Europa a nivel cultural y también empresarial.

Palabras clave: *Publicidad, imagen de marca, imagotipo, naming, Europa, diseño gráfico.*

[*]Corresponding author: mdgutierrezg@gmail.com

María Dolores Gutiérrez Guerrero
The Impact of the European Union on Graphic Design: An Analysis of Its Brand
Presence in the Imagotypes of Private Educational Institutions in Madrid (2023)

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

1. INTRODUCTION AND OBJECTIVES

The term "Europe" or its derivatives is frequently used in advertising to name brands. Examples such as Europa Press, Colegio Europa, Instituto Europeo de Posgrado, and Eurostar Hotels illustrate this phenomenon. From the perspective of marketing, graphic design, and, of course, European cultural influence, it is relevant to investigate something so pervasive in our environment. This study aims to identify the presence of the concept of Europe in graphic identity. Specifically, it will analyse the imagotypes of private educational centres in Madrid with names that include "Europe" or its derivatives, based on those listed on the Ministry of Education and Vocational Training website (educacion.gob.es) in 2023.

An imagotype is defined as "a combination of a logotype and an isotype presented together, but which can function independently, allowing both the name and the symbol to be recognisable on their own" (García, 2012). Imagotypes play a fundamental role in advertising as they graphically and instantly represent a brand's identity. According to the American Marketing Association (2021), the use of an imagotype enables a swift connection between brands and consumers, as the visual language allows the receiver to quickly grasp the existence or presence of a brand. Furthermore, an effective imagotype can enhance customer loyalty and help distinguish the brand from its competitors. Airey (2019) adds that an imagotype must succinctly communicate a brand's values, enabling the audience to immediately understand the differentiating characteristic of the company it represents.

In a saturated and competitive market, some companies have chosen to evoke a European identity in their brand names and logos. This is likely because Europe, and by extension the European Union, is associated with tradition, history, and excellence. A 2014 study by Rad et al. found that brands employing this strategy are perceived by consumers as premium, a key factor in positioning themselves above competitors.

The objectives of this study are as follows:
- To examine the use of the European concept as an advertising appeal.
- To analyse the presence of European identity in naming and graphic language, using as a sample the names and imagotypes of private educational centres in Madrid in 2023.
- To determine the inclusion of the word "Europe" or its variants in brand names.
- To study the visual language employed to evoke the notion of Europe.
- To verify whether the graphic elements (colour, typography, shapes, and represented elements) present in these brands align with those of the European Union's institutional identity.

2. METHODOLOGY

Specifically, this study examines the imagotypes of educational centre brands in Madrid in 2023. For this purpose, the content analysis methodology was applied, which is defined as "a research technique for making replicable and valid inferences from data to their context" (Krippendorff, 1990).

This analysis is also quantitative, which is highly appropriate for a study like this, as it "uses data collection based on numerical measurement and statistical analysis to establish behaviour patterns and test theories" (Hernández Sampieri et al., 2006). This approach allowed designing a variable table, which included a series of items to capture the aspects we aimed to observe.

Typography: This aspect was categorised into seven font types, ranging from classical types such as Garamond and Bodoni to more contemporary ones. This list includes fonts used by the EU in its corporate messages. According to the guidelines of the Spanish Service for the Internationalisation of Education (sepie.es), "Fonts accompanying the EU emblem can include Arial, Calibri, Garamond, Trebuchet, Tahoma, or Verdana. Italics, underlining, and other effects are not permitted."

Colour: Chromatic elements can reflect particular cultural sensibilities and deep-rooted artistic traditions. The EU flag contains three colours: white, blue, and yellow. Therefore, brands should incorporate these colours if they intend to evoke a European identity.

Icons and Symbols: These elements communicate concepts and values, refer to historical events, and/or highlight cultural elements. This paper included symbols such as stars in a circle, the map of the continent, the flag, the anthem, and the European motto, as these are the identifiers the EU uses to represent itself (european-union.europa.eu).

2.1. MATRIX OF THE ANALYSIS SHEET

Table 1: Analysis sheet

IMAGE	FONT		COLOUR		ICONOGRAPHY AND SYMBOLISM	
X	Arial Calibri Garamond Other	Trebuchet Tahoma Verdana	White Yellow	Blue Other	EU Flag Stars	Map of Europe Other

Source: Own elaboration

2.2. CORPUS ANALYSED SAMPLE

The corpus comes from the website of the Ministry of Education and Vocational Training, educacion.gob.es. It consists of the eighteen logos from private schools in Madrid in 2023 that contained the term Europe or its derivatives.

Table 2: Images of private schools in Madrid with names containing the term Europa or its derivatives.

INTERNATIONAL NURSERY SCHOOL@LICEO EUROPEO	
VERMONT ACADEMY AT LICEO EUROPEO (EE.UU.)	
LICEO EUROPEO	
CENTRO PROFESIONAL EUROPEO DE MADRID – ESTUDIOS PROFESIONALES SUPERIORES	**No encontrado**
VIRGEN DE EUROPA	

María Dolores Gutiérrez Guerrero
The Impact of the European Union on Graphic Design: An Analysis of Its Brand
Presence in the Imagotypes of Private Educational Institutions in Madrid (2023)

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

COLEGIO EUROPEO ARISTOS	
VERMONT ACADEMY AT LICEO EUROPEO (EE.UU.)	
LICEO EUROPEO	
CENTRO PROFESIONAL EUROPEO DE MADRID – ESTUDIOS PROFESIONALES SUPERIORES	
INSTITUTO EUROPEO DE FORMACIÓN PROFESIONAL	
EUROPA (Mejorada de Madrid, Centro de educación infantil y primaria)	
COLEGIO VILLAEUROPA	
CENTRO EUROPEO DE ESTUDIOS PROFESIONALES	
EUROPAINTERNACIONAL	

EUROPA Instituto de Educación Secundaria MÓSTOLES	
EUROVILLAS	
EUROPA Colegio de educ Infantil y primario Pinto	
EUROPA Instituto de Educación Secundaria RIvas Vacia madrid	
INSTITUTO EUROPEO DE FORMACIÓN PROFESIONAL	

Source: educacion.gob.es

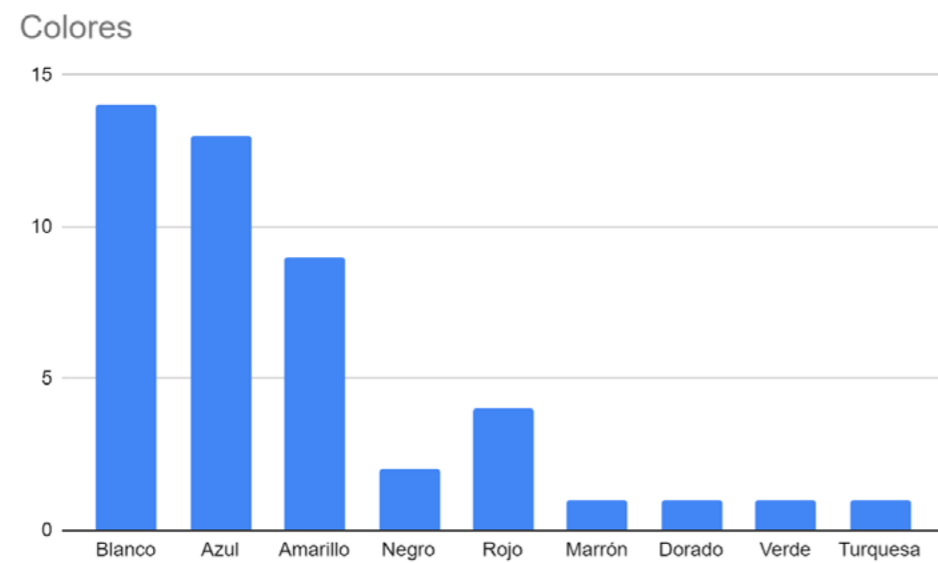## 3. RESULTS

Table 3: Fonts

Tipos de letra

María Dolores Gutiérrez Guerrero
The Impact of the European Union on Graphic Design: An Analysis of Its Brand
Presence in the Imagotypes of Private Educational Institutions in Madrid (2023)

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/
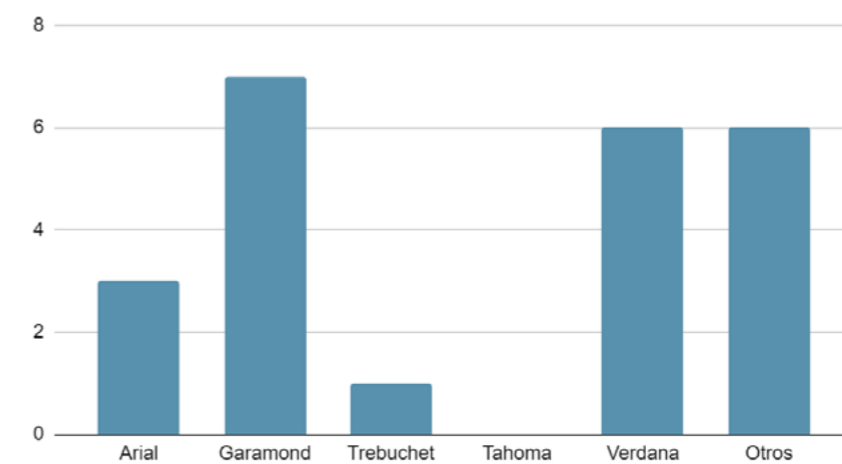
Table 4: Colours

Colores

Table 5: Iconography and symbols

Iconografía y símbolos

Garamond is the most commonly used typeface, characterised by its classical and elegant style, which is often employed to convey seriousness and sophistication—qualities closely associated with Europe and the EU. In second place are Verdana and Arial, which, in contrast to Garamond, are valued for their simplicity and readability. These typefaces are linked to modern, streamlined, and functional design, making them particularly suitable for digital formats. The least used typeface is Trebuchet, possibly due to its distinctive appearance, which diverges from the traditional and historical values typically associated with Europe.

There is a strong presence of white colour, followed by blue and yellow. This combination aligns with the colours representing the European Union. These tones may be present due to their associations: white conveys neutrality, blue represents stability and trust, and yellow communicates energy and positivity. As these are optimistic and universal values, it is unsurprising that many brands, in addition to using the name "Europe" or its derivatives, incorporate these colours to project an image of confidence and optimism.

The star is by far the most prominent symbol, appearing four times more frequently than any other element. In second place are the shields and other symbols, which, unlike the star, do not immediately appear to be associated with Europe or the corporate identity of the European Union. Other elements identified include the map, tower, key, lion, child, and sun, but their occurrences are sporadic and therefore not given significant emphasis.

4. CONCLUSIONS

The results reveal patterns and trends in the design of brand images that evoke the idea of Europe, thereby confirming the cultural and business connection between Spain and Europe. Specifically, these common features include:

The use of the name "Europe" or its derivatives in the branding of private educational institutions in Madrid.

A prominent presence of the corporate colours associated with the European Union, namely white, blue, and yellow. As previously mentioned, white conveys stability, blue represents trust, and yellow symbolises energy. These three values align with the European image, projecting security and efficiency.

Regarding typography, adherence to EU guidelines is also evident. The typefaces Garamond, Verdana, and Arial are the most commonly used in the analysed logos, and all are recommended for use alongside the EU emblem by the Spanish Service for the Internationalisation of Education (sepie.es).

In terms of symbols, stars and shields are the most frequently featured, which is consistent with their significance in the European Union's visual identity. Other elements, such as maps, towers, keys, lions, children, and suns, appear less frequently and lack a direct connection to Europe.

In conclusion, the analysed imagotype designs not only evoke Europe through their names but also seek to associate with the values of tradition, trust, and connection represented by the European Union through the visual elements mentioned above.

4.1. CRITICAL APPRAISAL
The selected methodology fulfils the objectives. The analysis conducted has produced results that have enabled the formulation of relevant conclusions. Additionally, this study servers as a preliminary trial for a larger-scale project, which could be expanded to a broader sample and allow for the observation of additional elements.

5. BIBLIOGRAPHY
- Airey, D. (2014). *Logo Design Love: A Guide to Creating Iconic Brand Identities* (2a ed.). Peachpit Press.
- American Marketing Association. (2021). *The importance of logos in brand marketing*. Recuperado el 15 de enero de 2024, de https://www.ama.org
- European Union. (n.d.). *Símbolos. European Union*. Recuperado de https://european-union.europa.eu/principles-countries-history/symbols_es
- García, F. J. (2012). *Diseño gráfico: Teoría y práctica*. Editorial Gustavo Gili.
- Hernández Sampieri, R., Fernández Collado, C., y Baptista Lucio, P. (2018). *Metodología de la investigación: Las rutas cuantitativa, cualitativa y mixta* (7a ed.). McGraw Hill. México.
- Krippendorff, K., y Wolfson, L. (1990). *Metodología de análisis de contenido: Teoría y práctica*. Paidós Comunicación.
- Rad, C., Pavic, M., Vrdoljak Raguž, I., & Pilav-Velic, A. (2014). Country of origin as a brand element: A literature review. *Procedia - Social and Behavioral Sciences*, 156, 368-372.
- Servicio Español para la Internacionalización de la Educación. (n.d.). *Uso del emblema*. Recuperado de http://sepie.es/doc/comunicacion/logos/use-emblemesES.pdf

Graphic Design

GRAPHIC DESIGN AND SUSTAINABLE DEVELOPMENT
SUPPORTING AGRICULTURE IN DEVELOPING COUNTRIES THROUGH AN ADAPTABLE DIGITAL ASSISTANT: DEMETER

Lucía Sanz Torres[*]

Abstract. This work aims to design a digital assistant that supports the sustainable development of agriculture in developing countries, especially focused on rural producers. This is a project that includes all the research and analysis of the current situation of farmers in these countries, the prototyping and design of a digital assistant and the development of an appropriate image for this fictitious project.

This project aims to defend graphic design as an effective tool within the action plans of the United Nations (UN) seeking to promote its Sustainable Development Goals (SDGs).

In the first part of the work the project, its objectives and the topic are contextualized. Here we justify the real need for a project of these characteristics and the role of graphic design in it. Then we move on to the development phase of graphic design applied to a digital assistant: from the first sketches to the final interface.

The evolution of this work corresponds to the graphic conclusions drawn from the research and its respective chromatic, typographic and conceptual application. Also, with the development of a virtual assistant prototype, the development of a corporate identity and the presentation of the final results.

Keywords: Graphic design, sustainable development, adaptable digital assistant, agricultural support, developing countries, digital innovation in agriculture; human-centered design.

Resumen. Este trabajo tiene como objetivo diseñar un asistente digital adaptable que apoye el desarrollo sostenible de la agricultura en los países en vías de desarrollo, especialmente de los productores del medio rural. Se trata de un proyecto que recoge toda la investigación y análisis de la situación actual de los agricultores en dichos países, del prototipado y diseño de un asistente digital y de la elaboración de una imagen adecuada para este proyecto ficticio.

Este proyecto pretende defender el diseño gráfico como una herramienta eficaz dentro de los planes de acción de la Organización de las Naciones Unidas (ONU) buscando impulsar sus Objetivos de Desarrollo Sostenible (ODS).

En la primera parte del trabajo se define el proyecto, sus objetivos y se contextualiza el tema, aquí se justifica la necesidad real de un proyecto de estas características y el papel del diseño gráfico en él. Después pasamos a la fase de desarrollo del diseño gráfico aplicado a un asistente digital: desde los primeros bocetos a la interfaz final.

La evolución del trabajo corresponde con las conclusiones gráficas extraídas de la investigación y su respectiva aplicación cromática, tipográfica y conceptual, con la elaboración de un prototipo de asistente virtual, el desarrollo de una identidad corporativa y la presentación de los resultados finales.

Palabras clave: *Diseño gráfico, desarrollo sostenible, asistente digital adaptable, apoyo a la agricultura, países en desarrollo, innovación digital en la agricultura; diseño centrado en el usuario.*

[*]**Corresponding author:** luuciasanztorres@gmail.com

1. INTRODUCTION AND OBJECTIVES

The world population, which will exceed 9 billion by 2050, faces a major challenge in agricultural production. According to the International Fund for Agricultural Development (IFAD), it will be necessary to double agricultural production, reduce food waste and create sustainable and efficient food systems (IFAD, 2024). In developing regions such as sub-Saharan Africa and parts of Asia, small-scale production accounts for up to 80% of total production, but most rural residents lack resources, finance, education and infrastructure.

Climate change particularly affects crops in these rural areas, where residents have limited options for adaptation. In response to these needs, the United Nations Sustainable Development Goals (SDGs) emerged in 2015 with the mission on ending poverty, protecting the planet and ensuring peace and prosperity for all by 2030. Their goal number 4, quality education, is of vital importance to ensuring sustainable development (UN, 2018).

Despite the efforts of organisations such as IFAD to support rural producers and connect them to markets, agricultural education has not been sufficiently integrated into their action plans.

It is necessary to promote agriculture in rural areas through an effective, practical and understandable educational system. This education would promote rural economic development, adaptation to more complex technologies and action effectiveness against climate change.

This paper is the result of a Bachelor's Degree Final Project developed from February until June 2024.

The conclusions obtained from the state of the art will guide the graphic development, highlighting the importance of a personalized user experience through artificial intelligence and the use of visual elements that facilitate user identification and trust.

1.1. OBJECTIVES

Main objective:
• To design a prototype of a customizable digital assistant that advises and supports farmers in rural areas of developing countries.

Secondary objectives:
• Use graphic design as an effective tool in UN action plans.
• Promote the UN Sustainable Development Goals through graphic design.
• Contribute to the DIGITALISATION of agriculture.
• Design an identity and corporate image suitable for the project and the assistant.
• Adapt the design of the digital assistant to the users.
• Develop an effective and understandable line of communication between the assistant and the user.
• Promote access to information for rural communities.

2. METHODOLOGY

To achieve the established objectives, it is necessary to propose a strategy that helps organize the work phases necessary to achieve an optimal result. This proposal consists of three fundamental phases that have helped carry out this project:

First is the research phase about the situation of farmers in developing countries, their needs and the active projects that are being carried out in terms of education. To do this we base ourselves on the reports published by International Fund for Agricultural Development (IFAD) and the United States Agency for International Development or any successor agency (USAID). Once the data obtained in the previous phase has been analysed, a strategy for developing a digital assistant prototype and defining the technical specifications of this work are established. The last phase corresponds to the final development of the project, in which the entire visual part of said assistant is created, its corporate image, web design and its possible applications in different formats.

During the research process of this project, several different alternatives were analysed to achieve the best result within the time constraints of the project.

Initially, the design of the assistant was thought to be 3D modeled in Blender. The Blender software is a tool for creating 3D graphics. This software enables the production of high-quality animations, simulations, rendering, and video editing (blender.org). After carrying out several modeling tests, it was concluded that the expected results were not being obtained. So, we switched to the Adobe Illustrator program, in which most of the graphic development of this project was carried out.

Figma is another graphical tool that allows you to create, prototype and collaborate on user interface designs in real time (figma.com). In our case was used to prototype the application, some graphic resources and images were processed in Photoshop and the final dossier was laid out in Adobe InDesign.

After researching the theoretical framework and the state of the art it is necessary to increase agriculture in rural areas of developing countries through an effective, practical and understandable agricultural education system.

This education would favor rural economic development, adaptation to more complex technologies and facilitate action against climate change.

There is a real need in the world for a project like this and graphic design can be used as an effective tool in the creation of a new training system to assist the most vulnerable farmers.

The aesthetic concept of this project is inspired by the classic symbols of agriculture. The figure of the Greek goddess Demeter has been used as a reference for the naming. The rest of the image has been decided to revolve around the symbol of this goddess: the bee. The bee has been used as a reference in the color palette and the creation of the geometry of the graphics, with a grid inspired by the shape of honeycombs.

3. RESULTS

Image 1: Own elaboration.

Image 2: Own elaboration.

Lucía Sanz Torres
Graphic design and sustainable development. Supporting agriculture in developing countries through an adaptable digital assistant: Dementer

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
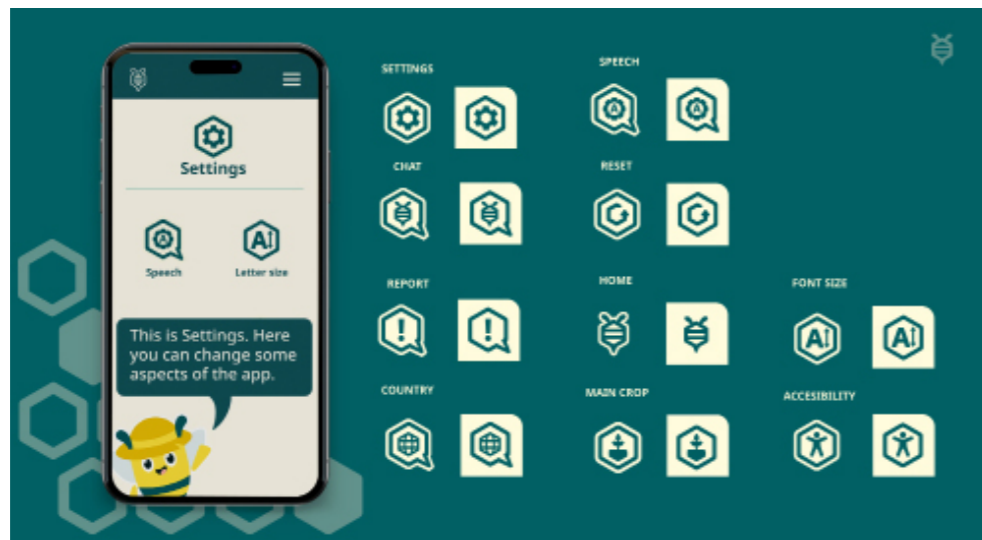ISSN 2952 - 1572. https://doi.org/

Image 3: Own elaboration.

Image 4: Own elaboration.

4. CONCLUSIONS

After completing the project, the objectives established at the beginning have been reviewed in order to design a prototype of an adaptable digital assistant, to be able to correctly transmit the values, mission and vision of the project and contribute to the support of farmers in rural areas.

It should be noted that in this project only a prototype could be developed since doing a detailed investigation requires much more time and resources. This project is intended to be continued in the future and opens a possible new line of action.

However, it is concluded that all established objectives have been achieved, creating a digital assistant that helps boost the crops of the most vulnerable farmers. Extensive research has been developed that supports the project, its technical aspects have been defended properly and the final graphic results have been successfully developed

4.1. PERSONAL APPRAISAL

It will end with a personal critique of the work, highlighting possible aspects to improve or develop in the future. Highlight aspects of

the work that have been surprising and should be highlighted.

This work has been a challenge from the beginning. Web design and development, as well as UX design, were not branches of graphic design that we had mastered. However, with time and dedication we have learned a lot about these disciplines and this knowledge has helped me have a more multidisciplinary vision of design.

As mentioned in the Resources section, a 3D design course was also carried out at Domestika. Before starting this project, we only had the most basic notions of Blender. However, and despite not having finally developed the 3D assistant, this research process has been very useful for me to improve my skills in Blender.

We can say that this task has been very enriching on a professional level and has served as practice for future jobs and working life.

Finally, one of my main personal motivations for carrying out this project was to demonstrate that graphic design can be used as a tool to intervene and improve people's lives. We feel very satisfied to be able to say that we have defended these ideas correctly.

5. BIBLIOGRAPHY

- Blender Foundation. (n.d.). Blender: The free and open source 3D creation suite. Blender Foundation. Retrieved from https://www.blender.org
- FAO | Organización de las Naciones Unidas para la Alimentación y la Agricultura. (n.d.). AboutFAO. https://www.fao.org/about/about-fao/es/
- Figma. (n.d.). Design, prototype, and gather feedback all in one place. Retrieved from https://www.figma.com
- IFAD. (2016, April). IFAD Strategic Framework 2016-2025 document. Enabling inclusive and sustainable rural transformation. https://www.ifad.org/documents/38714170/39132730/IFAD+Strategic+Framework+2016-2025/d43eed79-c827-4ae8-b043-09e65977e22d
- IFAD. (n.d.). Regions [Review of Regions]. Retrieved April 2024, from https://www.ifad.org/es/web/operations/regions
- Naciones Unidas (2018), La Agenda 2030 y los Objetivos de Desarrollo Sostenible: una oportunidad para América Latina y el Caribe (LC/G.2681-P/Rev.3), Santiago.
- U.S. Agency for International Development (USAID). (n.d.). About us. Retrieved from https://www.usaid.gov

Claudia Marichal
Fashion design & Cinema. Lingerie-inspired collection about the impact of
daddy issues on the perception of romance. Miss protagonist

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

FASHION DESIGN & CINEMA
LINGERIE-INSPIRED COLLECTION ABOUT THE IMPACT OF DADDY ISSUES
ON THE PERCEPTION OF ROMANCE. MISS PROTAGONIST

Claudia Marichal[*]

Abstract. This dissertation aims to create a romantic-themed fashion collection that uses pattern-making and tailoring techniques characteristic of lingerie. This project is born out of curiosity about the impact of psychological disorders defined as daddy issues in the romantic perception of love and relationships in the cinema of the 90s and 2000s. We have taken as aesthetic references the eight highest-grossing films of these two decades according to the website Filmaffinity, which serves us as a study of the image of love and the psychological nature of the relationships between the characters. The information obtained is the foundation for the creation of a fashion collection that applies traditional lingerie techniques to the design of outerwear. The result is a 17-look collection consisting of lingerie pieces, trench coats, blazers, and different dress silhouettes among others.

Keywords: Fashion design, aesthetics, romantic films, cinema, lingerie, pattern-making, psychology, daddy issues.

Resumen. El objetivo del presente trabajo es crear una colección de moda de temática romántica que utilice técnicas de patronaje y confección propias de la lencería. Este proyecto nace de la curiosidad por el impacto de los trastornos psicológicos definidos como las daddy issues en la percepción romántica del amor y las relaciones en el cine de los 90 y los 2000. Se han tomado como referentes estéticos las ocho películas más taquilleras de estas dos décadas según la web Filmafinity que además nos sirven para hacer un estudio de la imagen del amor y la naturaleza psicológica de las relaciones entre los personajes. La información obtenida nos sirve de base para crear una colección de moda que a su vez aplica las técnicas tradicionales de confección de lencería al diseño de ropa outerwear. El resultado son 17 looks que constan de piezas lenceras además de gabardinas, americanas y distintas siluetas de vestidos entre otros.

Palabras clave: Diseño de moda, estética, películas románticas, cine, lencería, patronaje, psicología, asuntos de papás.

[*]Corresponding author: claudiamarichal@alumnado.esada.es

Claudia Marichal
Fashion design & Cinema. Lingerie-inspired collection about the impact of
daddy issues on the perception of romance. Miss protagonist

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

1. INTRODUCTION AND OBJECTIVES

Romantic-themed movies have always had great impacts on their audience and that is why many of them have been a resounding success at the box office and have become cult movies. The romantic genre has proven to be a safe bet in the film industry as it is an emotion that we all identify with in some way. This justifies the subject of the present dissertation. In romantic genre films, it is common to find daddy issues, defined as "a term referring to women who have complex or confusing relationships with their fathers and how it impacts them into adulthood"(Rosen, 2022).

On the other hand, we consider daddy issues as a complex psychological affectation that since the 90s started to be present in all mass media with the "woke" generation, this term

Image 1: Moodboard. Letter to my father. Own elaboration.

is used to refer to a generation more aware, evolved, inclusive and politically correct (BBC News, 2017).

From that moment on, cinema also began to show this affliction subtly or clearly in female and male characters alike (Patterson 2022). The 1990s and 2000s are the main focus of this project and were a golden age for romantic comedies with several iconic films and TV shows that have had a significant impact on the genre (The Hawk Talk, 2023).

Some notable romantic comedies from these decades include "Notting Hill" (1999), "How to lose a guy in ten days" (2003), "Pretty Woman" (1990), and "Clueless" (1995). These films often feature unconventional romantic

pairings and a focus on the complexities of modern relationships (Ibid.).

Lingerie is utilized as a visual language to convey passion and longing, emphasizing the beauty and sensuality of the characters in question. The careful sourcing and selection of lingerie in these movies reflect the attention to detail in creating scenes that are both aesthetically pleasing and emotionally impactful. The art of lingerie-making involves specialized techniques and practices that distinguish it from regular clothing construction (Powell, 2016).

This project intends to represent, through the visual language of fashion design, the emotional stages of this type of relationship. Besides that, it seeks to give visibility to the mentioned "daddy issues" through the art of dressing. From a methodological point of view, we want to address the sexualized female characters present in those movies by using traditional techniques used for lingerie-making on outerwear pieces.

1.1. INITIAL HYPOTHESES
- The language of fashion design can be used to recreate cinematic content.
- Traditional lingerie techniques can be applied to the creation of outerwear garments.

1.2. MAIN OBJECTIVE
- Creating a fashion collection that uses pattern-making and tailoring techniques reminiscent of lingerie for outerwear garments.

1.3. SECONDARY OBJECTIVES
- To make a study on the concept of daddy issues in the romantic movies of the 90s and 2000s.
- To demonstrate that the language of fashion design can be used to recreate cinematic content.
- To apply lingerie techniques to other types of garments.
- To design a commercialisation plan for the collection.

2. METHODOLOGY

We studied various techniques originally used for lingerie making and adapted them to our outerwear garments in a usable way. The differences between these types of garments are what made this task a challenge but we even-

tually succeeded in adapting both the sewing and pattern-drafting techniques to our chosen designs. And this is the list of the movies used as a base for the inspiration of the collection:
- Pretty Woman, 1990.
- Sleepless in Seattle, 1993.
- Clueless, 1995.
- How to lose a guy in ten days, 2003
- The ugly truth, 2009.
- 13 going on 30, 2004.
- Mean Girls, 2004.
- Notting Hill, 1999.

2.1. TEXTILE RESEARCH AND TECHNIQUES
As a base, fabrics such as crepe satin, silks, linens, and also chiffons were researched as fabrics included in the collection.

In the looks that have been carried out all of these fabrics stand out, since with the shine that they preserve, we obtain that point of elegance in the garments that we seek; and its outstanding subtle elasticity, which provides a great comfort.

For one dress specifically a light neoprene was used to preserve shape but provide a lot of elasticity.

Different forms of both guipur and embroidered lace were used to give the collection that nostalgic reminiscence to lingerie.
- Delicate fluid fabrics like the ones we are using need special instructions for their regular maintenance, so they would have to be hand-washed or machine-washed with a delicate program for some of the garments. In any case this would be specified on the labels.
- Satin and elastic fabrics are quite delicate and need to be handled with care while sewing and ironing because stitches are usually permanently engraved in the fabric's grain. Before sewing a testing phase was conducted with each of the fabrics to make sure the right stitches, threads, and needles would be used.
- Some things are hand-sewn and artisanal, which requires special care and attention to detail. That entails more time invested and will be reflected in pricing.
- Wasteful pattern-cutting for some designs.
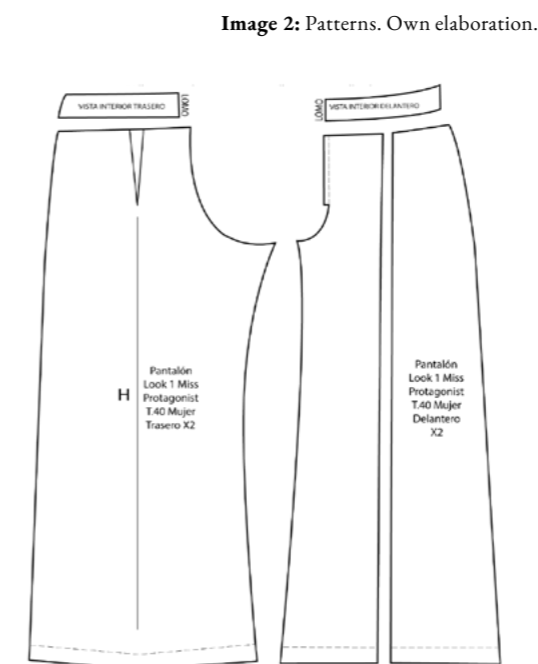- The intersection between detailed trimmings on heavy-duty fabrics

2.2. PATTERNS

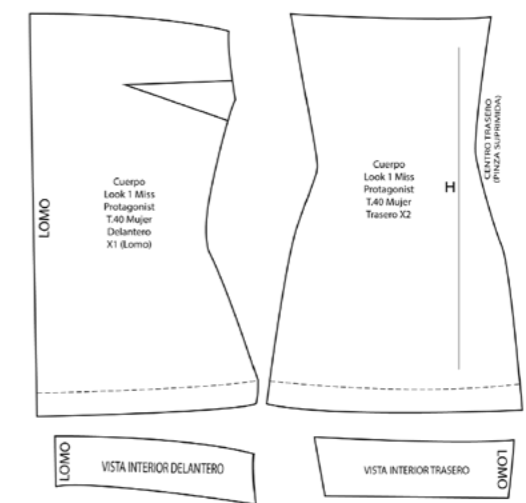**Image 2:** Patterns. Own elaboration.
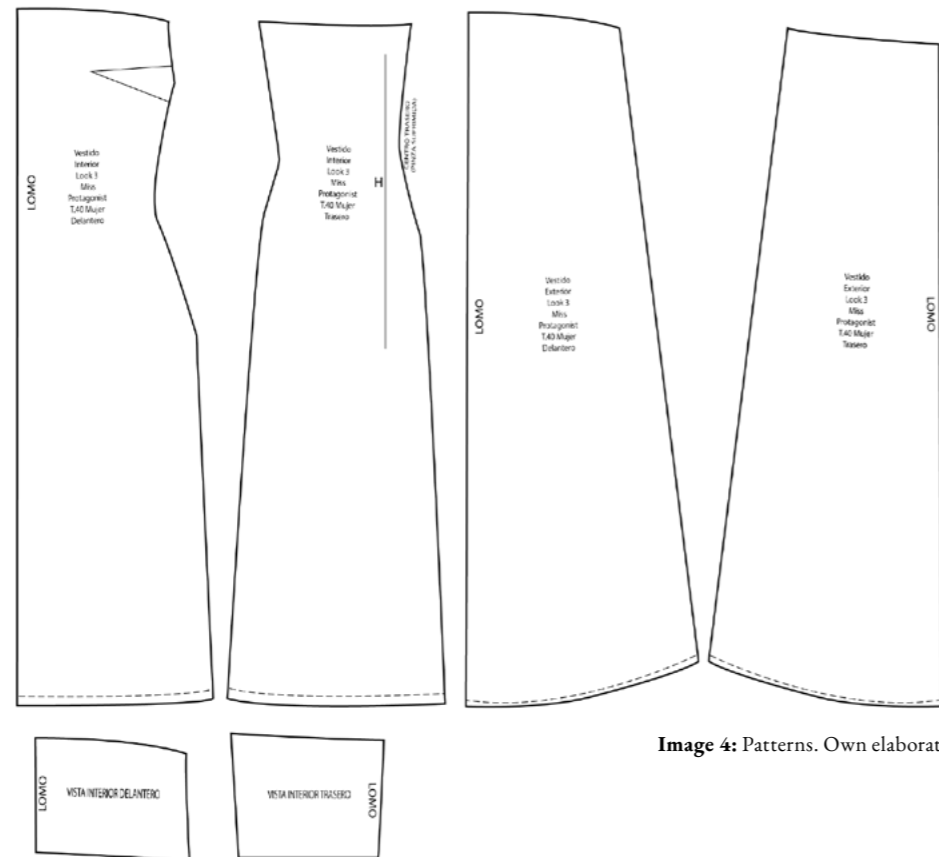

Image 3: Patterns. Own elaboration.

Claudia Marichal
Fashion design & Cinema. Lingerie-inspired collection about the impact of
daddy issues on the perception of romance. Miss protagonist

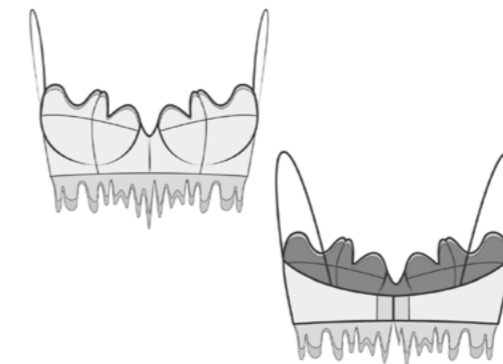**Image 4:** Patterns. Own elaboration.
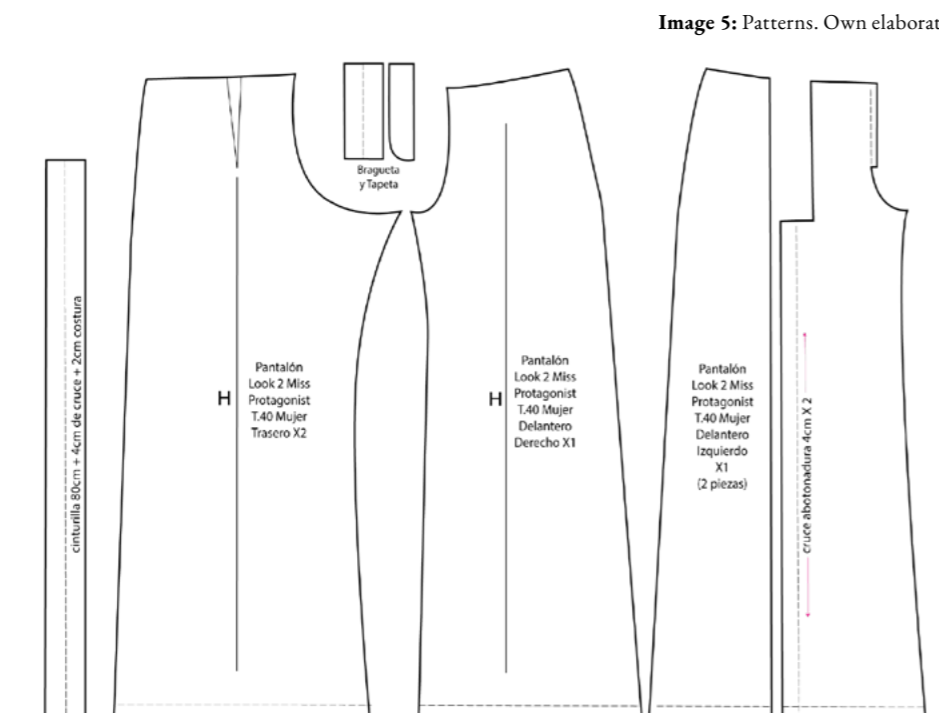
Image 5: Patterns. Own elaboration.

TECHNICAL SHEETS

COLLECTION:	Miss Protagonist	SEASON:	2024
DESIGNER:	Claudia Marichal	SIZE CHART:	36 / 38 / 40 / 42 / 44
GARMENT:	Brasierre	FABRICANT:	Claudia Marichal
DESCRIPTION:	Brassiere with lace inserts and trimmings with corsetted back.		

TEXTILES

Tul de encaje
con lentejuelas
100% Poliéster

STITCHES

Tejido remallado

Costura simple
remallada y pespunte
de carga

TRIMMINGS

Hilo coselotodo
Composición: 100% poliéster
Grosor: 100/2
Color: camel
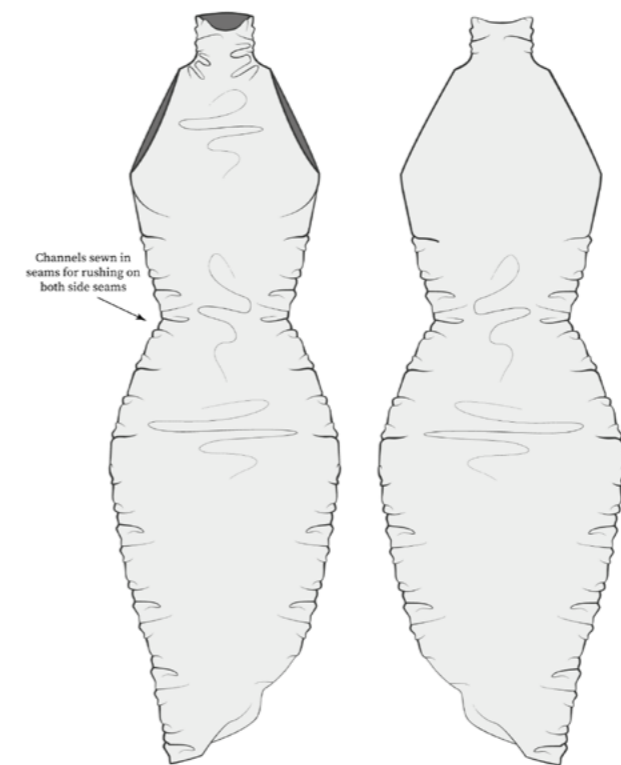**Hilo de overlock**
Composición: 100% poliéster
Color: negro
Bies de raso negro
Composición: 100% poliéster

Image 6: Technical Sheets.
Own elaboration.

COLLECTION:	Miss Protagonist	SEASON:	2024
DESIGNER:	Claudia Marichal	SIZE CHART:	36 / 38 / 40 / 42 / 44
GARMENT:	Trousers	FABRICANT:	Claudia Marichal
DESCRIPTION:	High waisted trousers with opening in the front of the left leg, closue with buttons.		
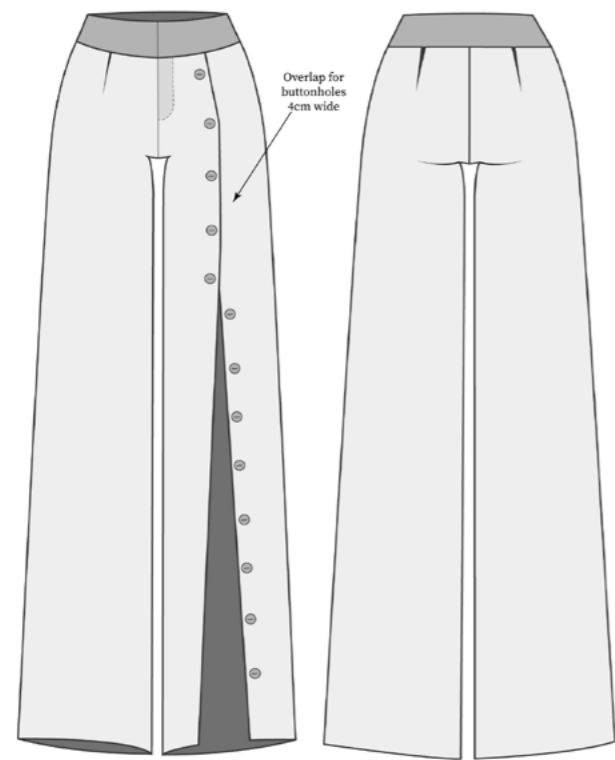
TEXTILES

70% Poliéster
30% Lino

Entretela Perchada
50%Viscosa
50%Poliéster

STITCHES

Tejido remallado

Costura simple
remallada y pespunte
de carga

Dobladillo simple

Costura embolsada
y semicargada

Overlap for
buttonholes
4cm wide

TRIMMINGS

Hilo coselotodo
Composición: 100% poliéster
Grosor: 100/2
Color: camel
Hilo de overlock
Composición: 100% poliéster
Color: nude
Botones imitación carey
Composición: 100% plástico

Cremallera
Composición: poliéster/plástico
Largo: 18cm
Color: camel

Image 7: Technical Sheets.
Own elaboration.

COLLECTION:	Miss Protagonist	SEASON:	2024
DESIGNER:	Claudia Marichal	SIZE CHART:	36 / 38 / 40 / 42 / 44
GARMENT:	Dress	FABRICANT:	Claudia Marichal
DESCRIPTION:	Skintight ruched dress with high neckline and assymetric hem.		

TEXTILES

Neopreno
95% Poliéster
5% Elastán

STITCHES

Tejido remallado

Costura simple
remallada y pespunte
de carga

Dobladillo simple

Costura embolsada
y semicargada

Channels sewn in
seams for rushing on
both side seams

TRIMMINGS

Hilo coselotodo
Composición: 100% poliéster
Grosor: 100/2
Color: negro
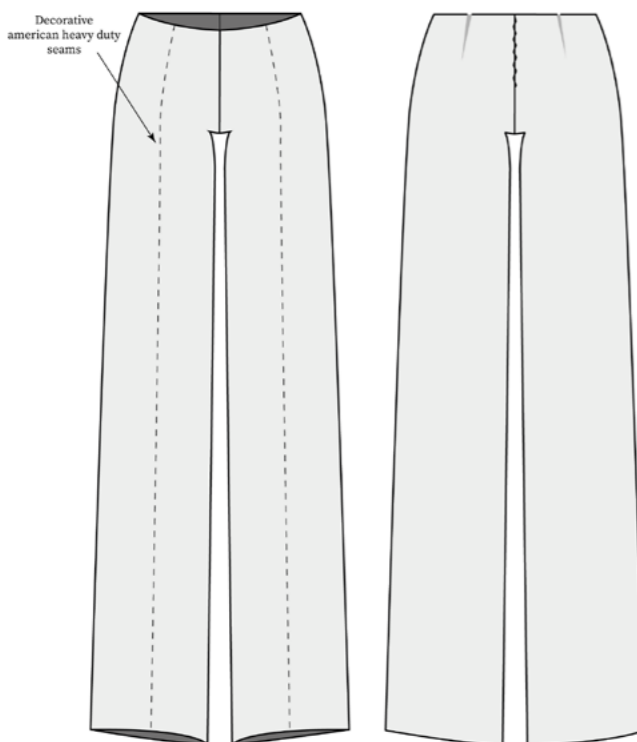**Hilo de overlock**
Composición: 100% poliéster
Color: negro
Cinta al bies elástica
Composición: 95% poliéster 5% elastán

Image 8: Technical Sheets.
Own elaboration.

Claudia Marichal
Fashion design & Cinema. Lingerie-inspired collection about the impact of daddy issues on the perception of romance. Miss protagonist

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

COLLECTION:	Miss Protagonist	SEASON:	2024
DESIGNER:	Claudia Marichal	SIZE CHART:	36 / 38 / 40 / 42 / 44
GARMENT:	Trousers	FABRICANT:	Claudia Marichal
DESCRIPTION:	Mid-waisted wide leg trousers with front seam.		
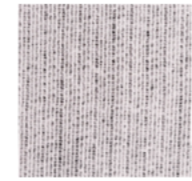
TEXTILES

Punto de Neopreno
95% Poliéster
5% Spandex
Rosado Maquillaje

Entretela Perchada
50%Viscosa
50%Poliéster

STITCHES

Tejido remallado

Costura simple remallada y pespunte de carga
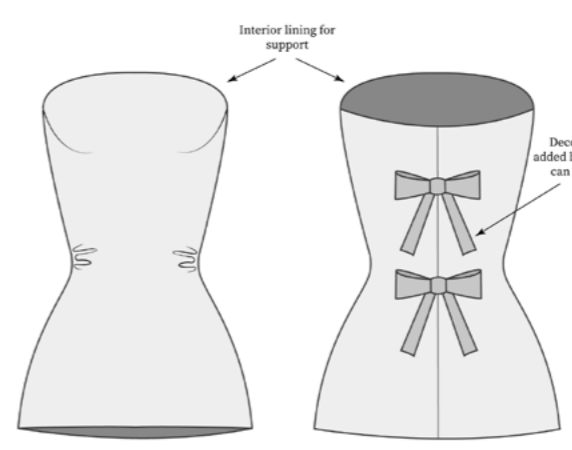
Dobladillo simple

Costura embolsada y semicargada

TRIMMINGS

Hilo coselotodo
Composición: 100% poliéster
Grosor: 100/2
Color: rosa
Hilo de overlock
Composición: 100% poliéster
Color: nude
Cremallera invisible
Composición: poliéster / plástico

Image 9: Technical Sheets. Own elaboration.

COLLECTION:	Miss Protagonist	SEASON:	2024
DESIGNER:	Claudia Marichal	SIZE CHART:	36 / 38 / 40 / 42 / 44
GARMENT:	Bodice	FABRICANT:	Claudia Marichal
DESCRIPTION:	Strapless bodice with tailored waistline and decorative bows.		

TEXTILES

Punto de Neopreno
95% Poliéster
5% Spandex
Rosado Maquillaje

Entretela Perchada
50%Viscosa
50%Poliéster

STITCHES

Tejido remallado

Costura simple remallada y pespunte de carga

Dobladillo simple

Costura embolsada y semicargada

TRIMMINGS

Hilo coselotodo
Composición: 100% poliéster
Grosor: 100/2
Color: rosa
Hilo de overlock
Composición: 100% poliéster
Color: nude
Cremallera invisible
Composición: poliéster / plástico

Image 10: Technical Sheets. Own elaboration.

Claudia Marichal
Fashion design & Cinema. Lingerie-inspired collection about the impact of
daddy issues on the perception of romance. Miss protagonist

Concept: Revista de Investigación e Innovación en Diseño, Vol. 3.
ISSN 2952 - 1572. https://doi.org/

COLLECTION:	Miss Protagonist	SEASON:	2024
DESIGNER:	Claudia Marichal	SIZE CHART:	36 / 38 / 40 / 42 / 44
GARMENT:	Maxi dress	FABRICANT:	Claudia Marichal
DESCRIPTION:	Maxi dress with tapered neckline.		

TEXTILES

Popelina
95% Algodón 5% Elastán

Chiffon
100% Poliéster

STITCHES

Tejido remallado

Costura simple
remallada y pespunte
de carga

Dobladillo simple

Costura embolsada
y semicargada

TRIMMINGS

Hilo coselotodo
Composición: 100% poliéster
Grosor: 100/2
Color: rosa maquillaje
Hilo de overlock
Composición: 100% poliéster
Color: nude
Cinta de raso
Composición: 100% poliéster

Layered fabric on
whole bodice

Ribbons are
hand-sewn on the
mannequin

Image 11: Technical Sheets.
Own elaboration.

Image 12: Final collection.
Own elaboration.

3. RESULTS

In this section, we add our finalized collection that takes form after thorough trend research and uses subtle design elements to reference the chosen theme.

4. CONCLUSIONS

The hypotheses presented at the beginning of this work have been validated.

Concerning the first: The language of fashion design can be used to recreate film content, we can say that this statement is fulfilled because everything from the pattern drafting and tailoring to styling and editorial through a study of poses and frames transmit that dramatic feeling present in the films of the genre studied.

The second hypothesis presented: The traditional techniques of making lingerie can be applied to outerwear, is also fulfilled. It has been proven that the techniques are applicable despite the significant differences between these two types of garments such as the thickness of the fabrics, the types of stitches used, and the finishes. Even so, we have managed to create a method that allows us to successfully adapt lingerie manufacturing techniques to outerwear pieces.

The objectives set at the beginning of the project have been satisfactorily achieved. We have managed to create a fashion collection that, as mentioned above, applies in an adapted way both pattern-making and tailoring techniques traditionally used in lingerie, especially in the design of closures and garment finishes.

We also succeeded in developing the second objective, which was to study the presence of "daddy issues" in romantic comedies of the 90s and 00s, from the recurrent cinematographic trends in these films to the analysis of psychological disorders related to the theme. As this was the chosen theme for the collection, having a deep knowledge of it has allowed us to evoke a coherent aesthetic.

About the third objective, we managed to demonstrate that film content can be recreated with fashion design from multiple perspectives, both through styling and the subtle way in which we evoke the feelings studied in the garments made.

The fourth objective spoke of applying various traditional lingerie techniques to the garments. This has been accomplished as can be seen in the bias binding, the elimination of darts during the pattern drafting process, the

Claudia Marichal
Fashion design & Cinema. Lingerie-inspired collection about the impact of
daddy issues on the perception of romance. Miss protagonist

handmade finishing for an invisible effect and of course also from the aesthetic point of view of the garments that despite being perfectly wearable as outerwear, visually are reminiscent of lingerie pieces through their details.

The fifth objective is to design and plan the marketing of the proposed collection. The proposed communication plan is suitable for future initiatives in case the collection is launched to the market.

Observing that all the objectives have been fulfilled, we can affirm that the methodology has been timely and effective. The results obtained have been satisfactory and respond to the initial predictions. With the initial design phase, the process of documentation, sketching, and research of data on fabrics and materials has been satisfactorily carried out. The production stage has also been developed without problems, from pattern making to the complete materialization of each of the garments. Finally, concerning the sales aspect, a communication plan has been designed with its corresponding market study.

In summary, the present work has achieved its objectives and has provided a clear and coherent view of the results. The findings obtained have important implications for the understanding and development of the subject. We consider it relevant to give visibility to the psychological disorders studied, especially how the presence of these problems is very present in popular culture because it affects a large part of the population. We hope that this work has contributed to giving visibility to this type of disorder and to taking advantage of the possibilities of fashion design and cinematographic language as tools for the communication of social problems.

Fashion and film are artistic tools that can complement each other and work in harmony, creating a balance of unparalleled emotions.

Image 13: Packaging mockups. Own elaboration.

Image 14: Editorial session. Own elaboration.
Photography by Alba Bargues

Image 15: Editorial session. Own elaboration.
Photography by Alba Bargues

Image 16: Editorial session. Own elaboration.
Photography by Alba Bargues

Image 17: Editorial session. Own elaboration.
Photography by Alba Bargues

5. BIBLIOGRAPHY

- BBC News. (2017, 27 junio). «Woke» and «post-truth» were added to the Oxford English Dictionary. https://www.bbc.com/news/newsbeat-40414375
- Ephron, N. (Director). (1993). Sleepless in Seattle. Tristar Pictures. https://www.filmaffinity.com/es/film344568.html
- Heckerling, A. (Director). (1995). Clueless. Paramount Pictures. https://www.filmaffinity.com/es/film167584.html
- Luketic, R. (Director). (2009). The Ugly Truth. Sony Pictures. https://www.filmaffinity.com/es/film110897.html
- Maguire, S. (Director). (2001). Bridget Jones´s Diary. Working Title Films. https://www.filmaffinity.com/es/film727857.html
- Marshall, G. (Director). (1990). Pretty Woman. Touchstone Pictures. https://www.filmaffinity.com/es/film514728.html
- Michell, R. (Director). (2022). Notting Hill. Polygram Filmed Entertainment. https://www.filmaffinity.com/es/film551332.html
- Patterson, T. (2022). How romantic comedies are evolving to reflect modern women. Harpers Bazaar.
- Petrie, D. (Director). (2032). How to lose a guy in ten days. Paramount Pictures. https://www.filmaffinity.com/es/film629998.html
- Powell, P. P. (2016). Lingerie design: a complete course. Laurence King.
- Rosen, P. R. (2022). Daddy Issues: Causes, Impact and How to Heal. Health Central. https://www.healthcentral.com/sex-and-relationships/daddy-issues
- The cultural impact of rom-coms; The Hawk Talk (2023-02-16). Warhawk News. https://warhawknews.com/4816/showcase/the-cultural-impact-of-rom-coms/
- Waters, M. (Director). (2034). Mean Girls. Paramount Pictures. https://www.filmaffinity.com/es/film368343.html
- Winick, G. (Director). (2023). 13 going on 30. Revolution Studios. https://www.filmaffinity.com/es/film572217.html