

# Exploring Visual Analysis in Design Research: Insights from Workshops with PhD Students at the University of Porto, 2022

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## ABSTRACT

This paper discusses two workshops on visual analysis conducted with research students from the PhD in Design at the University of Porto in 2022 within a curricular context. The objectives were to extract significance from visual information and to use visual methods for more effective research communication. The workshops focused on visual ethnographic analysis of photographs. Through hands-on exercises and joint theorising, two doctoral projects gained insights. The first project aimed to explore the contributions of informal dwelling to the city of Porto's visual and semantic identities using visual ethnography. The workshop's goal was to refine the research universe's definition. The second project, 'Pulse Approach', proposed a design project management tool based on ancestral wisdom from Portugal and Brazil's southern communities. The workshop aimed to clarify the research concept and facilitate an exploratory immersion for the transformative social design concept. In both workshops, clusters of images were analysed to identify themes, patterns, and connections. Visual methods allowed researchers to engage better with participants, validating their self-expression through selected photographs. Visual data brought participants' experiences and perspectives to life for analysis and interpretation, providing multidimensional feedback as triggers of memories and feelings. The workshops provided insights into collaboration and interdisciplinary approaches in design research, demonstrating the potential of visual methods for supporting research outcomes. Working with students from different disciplines brought diverse perspectives and insights. In the first workshop, colleagues helped interpret samples from the photographic collection, contributing to a suitable selection for analysis and communication. The process refined typological classifications, leading to a central definition for the research object. The second workshop, a collaborative work of sensorial and exploratory immersion, identified core concepts and terminologies from research images collected through fieldwork, based on feelings, impressions, and perceptions expressed by the focus group. It clarified the meaning of the concept and proposed a taxonomy of approaches to project management templates. Both workshops confirmed that a collective, exploratory use of visual methods for research analysis and communication enhances data, leading to new knowledge and tangible outcomes for research projects.

**Keywords:** Design Research, Visual analysis and PhD workshops.

## 1 Introduction

This paper delves into the study of two workshops on visual analysis conducted in 2022 within the academic context of the PhD in Design program at the University of Porto. These workshops were designed to enhance research students' abilities to derive significance from visual data and employ visual methods as tools for research communication. As the academic world increasingly recognises the value of visual ethnographic analysis (Rose, 2022), these workshops sought to provide a hands-on learning experience to students, bridging the gap between theory and practical application. The main objective was to equip doctoral students with the skills and perspectives necessary to progress in their research endeavours.



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The first project, centred on unravelling the contributions of informal dwellings to the visual and semantic identities of Porto, adopted visual ethnography as a means of inquiry. The primary objective was to create a working definition of the scope of the research. In parallel, the second project, named 'Pulse Approach', introduced a novel design project management tool grounded in the ancestral wisdom of southern communities in Portugal and Brazil. Here, the aim was to clarify the research concept and facilitate an exploratory immersion into the transformative realm of social design. Throughout both workshops, clusters of images became the focal point of analysis, revealing thematic threads, patterns, and interconnections. Implementing visual methods in these workshops not only offered researchers a novel lens through which to engage with their participants but also validated the self-expression encapsulated within the selected photographs (Harper, 2012).

Visual data breathed life into participants' experiences and perspectives, serving as a rich canvas for analysis and interpretation (Pink, 2022). Moreover, these workshops provided valuable insights into the collaborative and interdisciplinary dimensions of design research (Groat & Wang, 2013). The presence of students from diverse academic backgrounds infused fresh perspectives and a rich tapestry of insights. In the first workshop, colleagues lent their interpretive skills to select and refine samples from a photographic collection, ultimately contributing to a more informed and focused analysis of the research object.

The second workshop, a collaborative endeavour marked by sensorial and exploratory immersion, uncovered core concepts and terminologies from research images collected during fieldwork. These concepts were distilled from the feelings, impressions, and perceptions expressed by the focus group, leading to a clarified understanding of the research concept and the proposition of a comprehensive taxonomy of project management templates.

In synthesis, both workshops underscore the vast potential of collective, exploratory deployment of visual methods in research analysis and communication. Such methods do more than enhance data quality; they shed new light on knowledge and tangible research outcomes.

## **2 Methodology**

### **2.1 The Objectives of Workshops**

The primary objectives of both workshops were twofold: firstly, to extract meaningful insights from visual information, particularly in the context of two distinct doctoral projects, and secondly, to employ visual methods as a means of conveying the research findings and observations more effectively. These workshops provided an opportunity for students to actively engage in the exploration of visual analysis techniques. The participant group consisted of approximately seven research students who were actively pursuing their doctoral degrees in the field of Design. The primary focus of these workshops revolved around the practice of visual ethnographic analysis, specifically applied to the examination of photographs. The workshops employed a hands-on approach, complemented by collaborative theoretical discussions within the student cohort, as the predominant mode of instruction and interaction.

### **2.2 Data Analysis and Interpretation**

In both workshops, clusters of images were strategically placed throughout the studio space. Participants were tasked with identifying recurring themes, patterns, and connections within these visual datasets. Basic tools such as paper, pens, and scissors were provided to encourage hands-on engagement with the materials. Visual methods not only allowed for the integration of researchers' perspectives into the analytical process

but also facilitated more meaningful engagement with the participants. It validated participants' self-expression through their selection of photographs, effectively bringing their experiences and perspectives to life as source material for analysis and interpretation. This multidimensional feedback acted as a catalyst, evoking memories and emotions among participants. Conversations and notes served as valuable cross-referencing tools, enhancing the rigour of the analytical process. The workshops also provided a fertile ground for exploring collaboration and interdisciplinary approaches within the realm of design research. Engaging with students from diverse academic and cultural backgrounds enriched the research process, bringing forth an array of perspectives and insights.

### **3 Project 'Visual and Semantic Identities of the City of Porto'**

The first project explores the contributions of informal dwelling toward the production of public space, in the city of Porto. It approaches architecture as visual culture and interrogates its semantic and aesthetic roles in public space, as well as its mediation through photography and graphic design. Acknowledging the fact that the production of public space is increasingly driven by market imperatives (Stierli 2016; Sorkin, 2002) and dominated by corporations and political decision-makers (Sklair, 2006), the project regards informal dwelling as a form of unmediated, and often unauthorized participation of residents in the production of cities (Rebelo, Alvelos & Domingues, 2023). It argues that such practices inscribe residents' meanings in public space, contributing to more meaningful, democratic, and diverse dwelling environments. Delving on the current nature of residents' relationships with built environments in Western contexts, it advocates for cultivating active citizenship, beyond consumerism and spectatorship.

Primarily based on visual ethnography, fieldwork involves documenting informal participation in the production of public space, through photography and informal conversations with residents. Dissemination is a key aspect of the project's development, as it aims to contribute to the expansion of the iconographic repertoire that currently dominates the city's visual representation, by inscribing practices and aesthetics of informal dwelling, in the city's political perception. Such objectives are achieved through a series of workshops, an exhibition, and an online archive.

The workshop's main objective was to work on the conceptual definition of the research object. Given the elusiveness of the phenomenon under study, this task was challenging. One of the most defining characteristics of informal dwelling is the fact that it can not be easily defined or categorized. Often defined by what it is not - not regulated, not designed, as "a state of exception from the formal order of urbanization" (Roy, 2005), its marginal statute is acquired when formality becomes a dominant mode of dwelling production. Definitions relying on neat distinctions do not account for the phenomenon's diversity, nor for its frequent overlapping with formal modes of construction. Rather than providing abstract concepts, this investigation aims at devising a contextual definition from the observation of reality.

The workshop was conducted after the achievement of an exploratory research stage, which involved the photographic documentation of examples of whatever material aspects of the city were perceived as informally produced or as displaying informal aesthetics, such as patchwork of tiles in walls and "no project" façades as seen on Figure 1, Figure 2 and Figure 3. This exploration aimed at broadening the scope of the research universe beyond housing proper, to include other spatial productions considered as potentially relevant regarding the research objectives. The identification of such productions was done quite intuitively, especially in early expeditions, following what Sarah Pink (2021) refers to as the "ethnographic hunch". In these surveys, photography acts as the first instrument through which reality is filtered, keeping what intuitively seems significant. This mode of selection, mostly aesthetically oriented, is later

complemented by an analytical mode of attention, supported by conceptual considerations. These approaches complement each other, providing different types of insights.



**Figure 1:** *Mixed decoration of the façade with tiles and drawings, 2023. Source: Authors.*



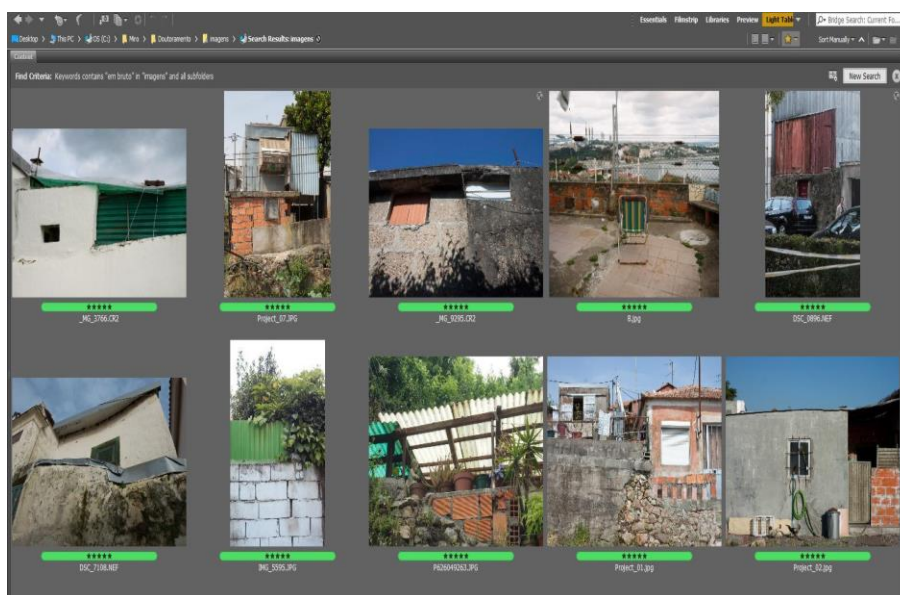
**Figure 2:** *Wall with patchwork of tiles, 2023. Source: Authors.*





**Figure 3:** “No project” façade, 2023. Source: Authors.

The collected material, depicting a wide variety of situations, had been the object of visual analysis, from which a set of functional, processual, and aesthetic typologies emerged. The workshop provided the possibility to include other researchers in the interpretation of this material, enabling insights that contributed to refining the conceptual definition of the research object, intimately entwined with the circumscription of the research universe, represented in the photographic collection. In the workshop’s first session, the researcher briefly presented the research project to participants, as well as the workshop’s objectives. Following this, samples from the photographic collection were displayed and discussed (Fig. 4). The collective observation and interpretation of these samples challenged the adequacy of the term *informal* in regard to certain examples. These objections raised interesting questions regarding a general definition of informal dwelling, evincing the diversity of the phenomenon under study, and the inadequacy of available terms to fully encompass this diversity. On the other hand, this constituted an obstacle that obstructed further analysis.



**Figure 4:** Taxonomy exercise conducted in workshop session 1 - 1st April 2022. Source: Authors.

While providing a general definition was not particularly helpful to the development of this research, which addresses a specific case study and pursues specific transformation goals, gaining awareness of this fact, on the contrary, was an important result of the discussion. It was suggested that a central type definition of the research object could prove more useful. Rather than limiting the research universe by establishing a common element verifiable in every instance of the designated phenomenon, a central type definition aims at a central case concept, “trying to grasp primarily the main features of the typical, most flourishing or less controversial cases.” (Barreto, 2008). Such a definition could be devised by reducing the data set, excluding misleading images, and keeping only the most typical examples of each typology. It was also suggested that elaborating a checklist could be useful as a screening strategy. A second session was scheduled in order to work with the reduced data set.

Between sessions, the researcher worked on reducing the image set, which led to a refinement of the definition of the research object. After excluding images identified as misleading, two screening questions were elaborated as follows:

- 1) Do the constructions or spatial configurations documented in the image denote the absence of formal design?
- 2) Do the represented constructions or spatial configurations present aesthetic characteristics that can not be identified with architectural traditions, either erudite or popular?

These questions correspond to defining aspects of the research object’s working definition and they also illuminate the project’s perspective, by stating the two angles from which research objects are examined: practices and aesthetics.

In the context of this investigation, informal dwelling thus designates dwelling construction and environments that are entirely or partially produced without formal design and simultaneously present aesthetic characteristics that are not inscribed in architectural traditions. This means that objects and situations fulfilling these criteria constitute the core of the research universe. Examples that only partially correspond to these criteria constitute its periphery. Once this position is clarified, they can become useful to the comprehension of the research universe, without being disorienting. For the moment, they were moved to a separate location and excluded from the workshop image set.

For the second session, the refined image set was printed and spread over large tables. Participants were invited to select and regroup images that they associated with pre-established aesthetic categories, proposed by the researcher (Fig.5). During this process, formal aspects of architectures and spaces depicted in the images were discussed and intuitive reactions were verbalized, providing the researcher with information on external perceptions of the images. This allowed for testing the soundness of the typologies, some of which were not evident for the participants, and contributed to the identification of the most representative images for each typology.



**Figure 5:** Regrouping of images according to pre-established categories *session 2 -7 April 2022*. Source: Authors.

The term “informal dwelling” is far from being self-explanatory. In terms of communication, it is more efficiently clarified by visual documentation rather than conceptual definition. Nevertheless, the original image set did not achieve this. Probing external perceptions enabled the identification of a core set of images for communication purposes. Collective interpretation and discussion significantly contributed to the circumscription of a central image set, and its harmonization with the conceptual definition of the research object, reinforcing its adjustment to the research context and objectives. Such delimitation was an indispensable step in the research progress, allowing the researcher to move forward to in-depth forms of analysis, with an enhanced focus, and stabler grounds.

#### **4 Project ‘Pulse Approach: Proposal for a Design Project Management Tool’**

The second project, 'Pulse Approach,' is oriented towards addressing an existing theoretical gap that exists in the intersection of design project management (Brown, 2010), contemporary spirituality (Capra and Luisi, 2014), and *Souths* communities (Gutierrez, 2015b, 2021 in Fry and Nocek; Escobar, 2018) from Portugal, Brazil, and countries within the Community of Portuguese Speaking Countries. The primary focus of this research revolves around design project management, an area that currently needs recognition of the dimensions of spirituality. Our proposal posits that the spiritual dimension should constitute a fundamental component within the strategy of design project management aiming for comprehensiveness. Such a strategy should be multidimensional and systemic and acknowledge spirituality within an expanded, integrated, and contemporary framework. This deficiency in recognising the spiritual dimension within design project management is a notable research gap. Up to the present, this study has yet to identify the existence of comprehensive design project management approaches that reference *Souths* communities from Portugal, Brazil, and/or countries within the Community of Portuguese Language Countries.



In the pursuit of defining the concept of transformative social design, a series of three co-design workshops were conducted on the dates of April 28th, May 5th, and May 19th, 2022. These workshops were conducted with a focus group comprising fellow students from the Doctoral Programme in Design at the Faculty of Fine Arts, University of Porto. During these sessions, various concepts, issues, terminologies, and words were presented, studied, discussed, and identified by analysing research images collected during fieldwork.

The concepts and issues presented, studied, and discussed encompassed the following areas:

- I) A succinct summary of the research work.
- II) The formulation of the research question.
- III) Identification of theoretical research gaps.
- IV) Introduction and exploration of reference models for design project management, including Design Thinking (Brown, 2010) and spirituality-oriented management, Teoria U (Scharmer, 2009).
- V) In-depth examination of key concepts such as ‘design for social innovation and sustainability’, ‘design for transformative social innovation’ (Escobar, 2018), ‘*Souths* communities’, and the introduction of the term ‘contemporary spirituality,’ which was specifically defined within the context of the study.
- VI) The formulation of questions aimed at defining the new concept of transformative social design, considering the nature of the research and the insights, analyses, and systematisation derived from field studies and a comprehensive bibliographic review.

To facilitate the analysis of the study by the focus group, the researcher presented investigative images gathered through fieldwork conducted both online and in face-to-face settings in collaboration with the *Souths* learning communities of Brazil and Portugal. Additionally, sensory immersions were facilitated through the use of music that resonated with the cultural context of each community under study. Discussions and inquiries arose due to the insights gained through the observations, participatory experiences, and learning interactions with these communities (see Figures 6 and 7).



**Figure 6:** Researcher presenting images gathered through fieldwork in Workshop 3 – 19 May 2022.

Source: Authors.





**Figure 7:** Focus group analysing the conclusions reached from analysis, Workshop 2 – 05 May 2022.

Source: Authors.

The image display, as well as the collective experience, studies, and discussions, were conducted through a participatory, collaborative, and collective approach. The workshops were designed with an emphasis on fostering a meaningful learning experience within the *Soubs* communities while also considering the emotions, impressions, and perceptions of the participant group. As part of the effort to generate knowledge, various words and terminologies related to analysing the displayed images emerged (Figures 8-9).



**Figure 8:** Researcher assigning a category to an image cluster, Workshop 2 – 05 May 2022. Source: Authors.



**Figure 9:** Post-it exercise of categorisation – 05 May 2022. Source: Authors.

Through this participatory, collective, collaborative, and sensory exercise, it became possible to contemplate and arrive at a conclusion regarding the nomenclature and essence of the concept known as *transformative social design*. This concept is fundamentally centred on facilitating participatory experiences and learning engagements rooted in the wisdom and philosophies of *Souths* communities. It represents a design approach that places a strong emphasis on the acts of observing, listening, and learning from the beings, wisdom, knowledge, and practices of South communities, with the overarching goal of empowering transformative processes.

## 5 Conclusions

The workshops on visual analysis conducted with PhD students in the Design program at the University of Porto in 2022 have yielded significant insights into the realm of design research and the employment of visual methodologies. These workshops, rooted in a hands-on approach and collaborative engagement, have played a pivotal role in shaping the research landscape for the participating doctoral projects. They not only allowed for the incorporation of researchers' perspectives into the analytical process, but also facilitated deeper engagement with participants. The multidimensional feedback generated from this process acted as a catalyst, evoking memories and feelings, and enriching the research endeavours. Furthermore, these workshops have underscored the significance of collaboration and interdisciplinary approaches in doctoral design research. The inclusion of students from diverse academic and cultural backgrounds has enriched the research process, bringing forth a range of fresh perspectives and insights.

The first workshop, characterised by collaborative interpretation, demonstrated the potential of contributions by colleagues in selecting and refining samples from the photographic collection. This collaborative effort significantly contributed to identifying suitable images for analysis and communication, thereby enhancing the accuracy of emerging typological classifications, and leading to the adoption of a

central definition for the research object. The second workshop, marked by sensorial and exploratory immersion, facilitated the emergence of core concepts and terminologies rooted in analysing research images collected through fieldwork. These concepts, emanating from the feelings, impressions, and perceptions expressed by the focus group, have been instrumental in clarifying the research concept and proposing a taxonomy of approaches to existing project management templates.

In sum, the collective and exploratory deployment of visual methods in the analysis and communication of research findings, as exemplified by these workshops, underscores the potential of harnessing enhanced data to generate new knowledge and plan tangible outcomes for research projects. The insights gained through these workshops are not only valuable to the participating doctoral projects but also contribute to the broader discourse on the effective integration of visual methodologies in design research. Both workshops underlined the potential for the development of doctoral studies in a collaborative environment, as opposed to a prevailing practice of individual research. Further workshops will be conducted with this collaborative premise in mind, aiming at a set of recommendations that may be of use in further doctoral contexts.

## 6 Declarations

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### 6.3 Informed Consent

Susana Barreto, Heitor Alvelos, Ana Rebelo and Luciana Lopes have read and understood the information provided above and freely give their informed consent for the publication of research work related to the project titled "Exploring Visual Analysis in Design Research: Insights from Workshops with PhD Students at the University of Porto, 2022". Statement copy available upon request.

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