Design Council

Design Economy 2021

Scoping Project

Environmental and Social Value of Design

BOP Consulting

ual:

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1.

Introduction

This paper proposes a methodology for Design Economy 2021 that will provide data and stories on the environmental and social value of design in the UK, in addition to economic value. It envisages a programme of research over several years which, as well as articulating the social and environmental impact and value of design, will result in new capacities in the design economy, new kinds of evidence and a stronger orientation to understanding the links between design skills, action and social and environmental outcomes and, ultimately, changing practices.

This paper has been developed in early 2021 in the context of the global Covid-19 pandemic and Black Lives Matter. These challenges – which operate at multiple scales – exist alongside the ongoing and urgent challenge of the climate emergency. The commitment to the Sustainable Development Goals made by UN member states in 2015, along with the Paris Agreement treaty on climate change adopted in 2011, have set the stage for collaborative and individual action to address social and environmental issues at all scales across society. They have resulted in numerous initiatives, laws and regulations, collaborations, projects, types of research and forms of data-gathering across activism, civil society, academia, business and government, at international, national and local scales and across all sectors. Some, such as the World Economic Forum's (2020) work on stakeholder capitalism, are aimed at global business. Some – such as the Construction Innovation Hub's value toolkit, the Higg Index developed by the Sustainable Apparel Coalition or Julie's Bicycle's Creative Green Tools – are sector specific.

An emerging need within the design sector is to understand and assess the specific contributions that designers and those using design skills can make to address social and environmental challenges. This is not just a need of those working directly in the design sector. Those who are involved in commissioning, procuring, investing in and using designed things, those whose lives, well-being and futures are impacted by these designed things, as well as those involved in the enabling infrastructures shaping design practice, from educators and students to policy makers and business leaders, are also an audience. At the heart of this paper is an effort to understand and articulate the distinctive contributions of designers and design skills to social and environmental impact and value, both now and in the future, to provide an evidence base to inform action.

Against this background, the paper builds on the discussion of social and environmental value in the paper 'Moving Beyond Financial Value' (MOIN, 2020), and sets out the general approach, and some key assumptions underpinning the methodology. To develop the approach we reviewed academic literature on design in relation to social and environmental issues as well as 'grey literature' such as reports, frameworks and toolkits.

In the paper we establish a set of research questions we believe Design Economy 2021 could address, and describe the mixed-methods approach we recommend in order to answer these questions. Details of previous studies looking at design's social and environmental value, and a sample of the range of impact frameworks and metrics we have reviewed to make our recommendation about how design's social and environmental impact might be captured are included in the appendices at the end of this paper.

The paper takes up the suggestions made in MOIN (2020), and the Design Council's Design Economy 2021 brief, to use a mixture of methods, including deliberative processes to conceptualise value, alongside more instrumental methods to quantify value in specific cases, as well as an approach to

opening-up the methodology for designers to articulate and capture their own value into the future. Our aim is to put in place a medium-term foundation for seeing the 'bigger picture' insofar as the social and environmental impacts of the UK design economy are concerned.

To that end, we propose combining several elements:

- Establishing this project as a shared endeavour across the design economy, led by Design Council, rooted in a deliberative and anticipatory research methodology, and in a commitment to addressing equalities, diversity and inclusion (EDI) issues.

- Underpinning the analysis with a 'Theory of Change' and Impact Framework to articulate and specify social and environmental impacts and value of design, and recognise how these can reproduce unequal impacts and consequences.

- Involving stakeholders in the design economy

  – A sector-wide survey of designers and those using design skills, to establish a picture 'at scale', and to provide sufficient data for estimating gross impact and making projections about future potential value;
  – Demonstrator projects to build capacity in design organisations in understanding and assessing their own impacts and value;
  – Deliberative and anticipatory workshops to bring together diverse people from across the design economy to generate insights about how design contributions to social and environmental impact can be valued and what the future design economy might look like;
  – Anticipatory analysis showing how design's future value could be calculated.

2.

Approach

2.1. Dealing with design's pluralities

As noted in MOIN (2020), the different fields or disciplines of design exhibit a great deal of variety, and the value generated through such varied practices as urban design, architecture, fashion design, product design, digital design, service design and graphic design are multiple and non-commensurable, existing as they do in specific contexts and ways of creating impacts, which are valued in distinct ways. As such, a single measure or tool is unlikely to be able to capture the totality of design's value. In any case, capturing everything represents an impractically large task. If design might be found 'upstream' in every element of the human-made environment, its 'downstream' impacts and value would be too many to count and require specifying their spread and timeframes.

Therefore, the proposed approach to dealing with this diversity is twofold. In some respects, it is possible to map out the design community (designers, people using design skills, specialist design firms, organisations carrying out or commissioning design, other people using design practices), and therefore certain things are possible to measure relatively easily, such as the attitudes and practices of individual designers and firms. This can be done at scale through a survey. In other respects, there are likely to be significant differences across design disciplines and communities, in which case a closer look at a smaller number of sub-fields is warranted. This can be done through a research method that looks at specifics – such as case studies – however significant differences between sub-fields could also be teased out through a survey.

2.2. Scaling up and projecting forwards

Underpinning assessments of the economic value of design is a narrative argument or 'logic' that says that designers, and people using design skills, undertake design activities, which deliver design outputs, which create economic value. In estimating the economic contribution of design, the approach has not been to add up all the revenue generated by every single designed thing (an unmanageable task) – but rather to project forward from what is known about the numbers of people at work in design intensive roles and using design skills.

We suggest a similar projective approach is the most pragmatic way of establishing the social and environmental impact and value of design. The provisional Theory of Change outlined below has been designed with this research strategy in mind. The combination of research methods proposed to inquire into the different aspects of the value chain, or constellation of actors and activities through which value is co-created, should then allow for both 'scaling up' – estimating what the 'bigger picture' might be for the whole design economy on the basis of what can be established about part of it – and 'projecting forwards' – anticipating what could be achieved if the majority of individuals and firms across the design economy acted in the same way.

2.3. Future-proofing the methodology

The assessment of UK design's social and environmental impact and value captured in Design Economy 2021 will be a baseline that can be built on and further developed in future. It also represents the first time many designers, as well as those using design skills and organisations using design, will be asked questions about the relation of their work to social and environmental impacts and value. Therefore, the survey (in particular) is structured with room for the design community to grow into. It is ambitious in the data it asks for, assuming that although designers might not currently have this information to hand, in the future they will.

There are efforts underway in many government, business and civil society settings as well as in academia to address the shared challenges articulated in the UN Sustainable Development Goals (UN, 2015) and the climate emergency. From the World Economic Forum's (2020) work on stakeholder capitalism to activities in specific sectors such as construction, product design or fashion, at global, regional, national, local, organisation and individual scales, people around the world are grappling with the complex and intertwined issues of social and environmental value. So, by asking design professionals questions about how they understand and assess their social and environmental impacts and value, the Design Economy 2021 research can also operate as a trigger to prompt respondents to find out the answers to questions that they do not have at present. We suggest pairing the survey with a self-assessment toolkit – also based on the overarching framework of the Theory of Change and Impact Framework – that signposts designers to specific methods for measuring impact and value.

2.4. Aligning with existing models

Although previous research has identified that there is no single impact assessment or valuation tool used across the design community (MOIN, 2020), there have been multiple tools developed in the context of specific disciplines or sectors (see Appendix 3). We conducted a rapid 'deep dive' into two disciplines that are comparatively advanced in social and environmental impact monitoring and regulation – fashion and the built environment, alongside a review of core constructs (see Appendix 2 and Appendix 4). This revealed a range of possible approaches, all tailored to their particular industry structures, practices and norms and shaped by associated narratives, ways of working and histories. Some have ten years of data behind them, others are fairly new. Some are favoured by government tied to public procurement and social value, others by large corporates.

This raises a strategic question: should the Design Economy 2021 methodology simply adopt or align with one of these pre-existing framework tools? Should it splice together elements of all? Should it favour one and bolt on extras as needed to suit? We propose a way forward, while recognising the inherent challenges embedded in such an endeavour and acknowledging the limitations.

2.5. Focusing on the potential of design

The methodology asks primarily about the positive impacts (and value) rather than negative. This is not to ignore the negative social and environmental impacts of designing, which are well recognised (eg Papanek, 1970; Fry, 2009; Monteiro, 2019) (See also Appendix 4). Rather, the objective of this research is to identify design's potential for positive impact, and to show routes to scaling that up. However, it would be relatively easy to add an additional focus on negative impacts into the survey and the case studies. Many of the impact metrics are things external to design that might be affected by it – e.g. resource use – and impacts might be positive or negative.

3.

Key frameworks

To enable carrying out the analysis of the specific contributions of design to social and environmental change, we have identified the need for two frameworks. The first is a **Theory of Change** which at a macro level articulates the relations between design activities and social and environmental outcomes. The second is an **Impact Framework,** which enables specification of the contributions of design to social and environmental impacts and value. The two frameworks are complementary. The former emphasises temporality, enabling accounting for the activities over time through which designing leads to different kinds of social and environmental impacts, through the actions of designers (or people using design skills), design projects and design organisations. The latter is spatial in character and focuses on the specific kinds of impact associated with and resulting from designing. Both simplify what are complex social relations. But without such simplifying frameworks, it is difficult to generalise across the varieties of practices, organisations and contexts through which designers, design skills and designing takes place.

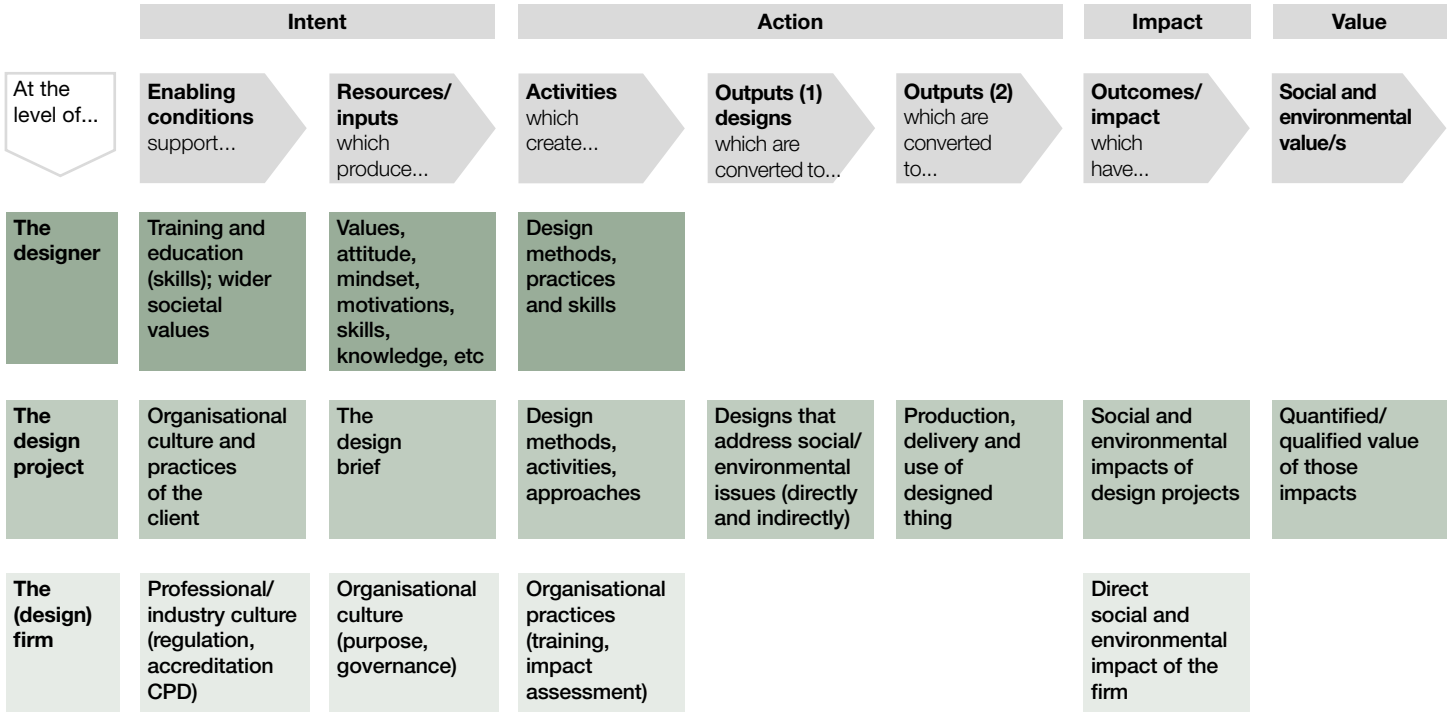
3.1. A Theory of Change to articulate how design produces social and environmental impact and value

In order to provide an overarching framework for investigating and assessing how design (broadly understood) generates social and environmental value, we have drafted a Theory of Change (see Figure 1). Any such theory is a working model to think with, rather than a depiction of reality (Baden-Fuller and Morgan, 2010). Indeed, theories of change have a complicated relationship to academic research and evidence and practice (e.g. Mulgan, 2016). On the one hand, anyone using design skills in an organisation to address a social or environmental issue has and operationalises a 'theory' about what the change they propose introducing will achieve. Such theories are often implicit, make assumptions that are sometimes not valid, transparent or shared, and rest on understandings of the world, and of knowledge, that are open to deliberation and contestation. On the other hand, academic research in the many disciplines that touch on social or environmental change can emphasise problematising or contextualising change and how it happens, which might provide the basis of such theories, and often do not translate effectively to the worlds of practitioners and are carried out at speeds that do not align with the pressures of organisational action and indeed with the climate emergency.

Aware of this enduring tension, we propose a provisional Theory of Change while being aware of the limitations of this approach, because one of the main purposes of Design Economy 2021 is to ask, "What should the UK design economy of 2050 look like?" We anticipate that this 'theory' and accompanying impact framework will and should continue to develop during the Design Economy 2021 research, through deliberation and contestation, in dialogue with the many professionals and researchers, as well as stakeholders, who want to understand and assess the contributions to and consequences of design for social and environmental impact and value. Further, building into this EDI perspectives will bring into view different and unequal consequences for some specific communities and groups.

Laid out for simplicity in a linear form – although we acknowledge the multiple connections and feedback loops inherent in social and environmental phenomena – this Theory of Change is a narrative setting out what shapes, influences and produces the social and environmental value of design. 'Design' here is understood as a realm of activity rather than simply as an artefact or plan.

Figure 1: Diagram summarising the draft Theory of Change to account for social and environmental impacts of design for Design Economy 2021



Source: UAL Social Design Institute (2021)

This Theory of Change describes the combinatory effects of the designer (or person using design skills), design firm (or organisation using design), the design project in delivering value and the discursive contexts in which issues form, agendas are set, resources are allocated, projects take place and value unfolds. In so doing it assumes that design has the potential to create positive social and environmental value(s), and it assumes a relationship between the intentions of designers, their actions, and the resulting outcomes – while also acknowledging that such a relationship is not linear and also that applying design skills can and does have negative impacts. Therefore, in attempting to understand the social and environmental value of design, it is important to understand each stage in this value chain[1] and their mutual connections. The proposed methodology enquires into each element in order to build a detailed composite picture.

The proposed Theory of Change aiming to articulate the social and environmental impacts and value of the design economy is, therefore, a provisional framework that will be explored and revised through the research in Design Economy 2021. It also provides a mechanism for estimating what the 'big picture' might be: if

[1] *We acknowledge the varied ways that social scientists conceptualise and analyse social, organisational and institutional practices which are ignored in the use of the term 'value chain'. But for simplicity, here we refer to value chain as a way of identifying the specific ways that value is realised across the value creating system of the design economy.*

we can understand how this relationship works in a specific number of cases, we can scale up projections for the sector as a whole. The Theory of Change rests on four main concepts: intent, action, impact and value, which we detail as follows.

3.1.1. Intent

The intentions, attitudes and concerns of designers (and those using design skills) in dialogue with managers, investors, commissioners or clients in different kinds of organisational setting provide an initial framing that sets design work on a course to delivering social and environmental value (or not). This is shaped and influenced by a broader set of discursive factors: for example, regulation, societal attitudes, education, and professional and industry cultures, histories and narratives. It is expressed through things like the designer's motivations, interests, knowledge, and skills, through the framing of the design brief and through the organisational logics of the design firm or organisation using design. It is therefore important to identify what the intentions, attitudes and concerns are as well as recognising that they are themselves social products.

3.1.2. Action

There is a widely-cited estimate that 80% of a product's impact is determined in the design phase (e.g. McAloone and Bey, 2009; Politowicz and Earley, 2009), which has become part of the EU's sustainable product policy (European Union, 2018). This foregrounds the work of designing, as the phase in the value chain where the specification for a final product, service, building, and so on, is determined as being the key moment where environmental impact is configured.

While there is a lack of agreement among academics in environmental design research as to whether this 80% figure is justified[2], it remains that case that it is likely that decisions made during designing have significant consequences for society and the environment. Designers and those using design skills (and non-designers) carry out a multiplicity of methods, activities, practices, processes and so on, in order to produce 'designs' (as in proposals or ideas). Some of these activities might be approaches that are specifically intended to create social or environmental value (for example, design for behaviour change or to reduce materials use); others may be core design practices (for example, prototyping). Designers are also understood to exercise a specific range of skills in designing, which might contribute more or less to generating social and environmental value. The resulting designs – the specification for the thing to be implemented, delivered or built – themselves embody a range of potential future impacts and value. These designs may directly address social or environmental issues (for example, an idea to tackle homelessness) or they may produce environmental and social value as a positive spill-overs (for example, housing that has a reduced carbon footprint). These designs may or may not be implemented, produced and used: in other words, the actual impacts may or may not be realised.

Alongside design skills and practices, design firms (and other organisations using design) may do other things outside of design projects that create social and environmental value: for example, by tackling social and environmental issues through changing business practices, and also by actively evaluating and learning from the experience of previous projects. So it is important to identify different forms of design action and uses of design skills, and recognise that resulting designs (proposals) may not be implemented or realised, and that the work of designing itself may also have consequences.

3.1.3. Impact

When we talk about the 'social and environmental impact and value of design', we do not typically mean the energy used to power the computer of the designer or produce the paper the plan is drawn on – although these are also important. Methods such as carbon-offsetting can aid estimating and addressing the carbon produced, for example, although these remain contentious. We also mean the 'downstream' impacts that result not from the design phase, but from production, use, disposal or re-use. For example, one study in architecture highlighted the environmental

[2] See discussion online among academics who research sustainable about this claim, its history, and any supporting evidence https://www.researchgate.net/post/Is-80-of-environmental-impact-determined-during-the-design-phase-or-not [Accessed 15 March 2021.]

impact during the occupation or use phase (Asdrubali et al, 2013). Given the plurality of design disciplines that make up the sector, the sheer quantity of things in the human-made world that are designed, and the diversity of impacts and value of those things over the course of their lives, this is potentially a very difficult thing to assess at scale. Further, advocates of the circular economy approach have highlighted the potential and implications for designers to practice circular design (e.g. Ellen MacArthur Foundation, 2014; Earley and Goldsworthy, 2018), which have shifted thinking on the timeframes and infrastructures through which such assessments can take place.

On the other hand, there are by now many established metrics and tools for identifying social and environmental impacts: indicators of a set of social and environmental outcomes that have been deemed important enough to count and in relation to which there are data infrastructures, expertise, requirements, regulations and narratives. Some design disciplines and professions are quite advanced in their approaches to assessing social and environmental impact, others less so. Although there is not one approach used across all design disciplines, there is a degree of similarity in the kinds of indicators used to estimate social and environmental impact, for instance in relation to emissions to air, water, land, biodiversity loss, resource use or waste production, as well as generation of knowledge and skills, employment opportunities, work and job quality, health and well-being, safety, resilience or social connections (See Appendix 3 for a list of the indicators used in some of the main frameworks and tools). In order to practically build a 'big picture' of such impact it will be necessary to work with a relatively constrained conceptualisation. However, this picture at scale can be complemented by more open-ended explorations of impact in a smaller number of cases. For the purposes of Design Economy 2021 we propose building on and integrating much of the previous work done to articulate and assess different kinds of impact and value (which as the next section shows, are often conflated).

3.1.4. Value

The last stage in the value chain is an assessment of how the various social and environmental impacts of design create value. As discussed in the 'Moving Beyond Financial Value' report (MOIN, 2020), and the introduction to this set of methodological papers, value is an assessment of the significance of something; it is a judgment made about the importance of an impact. As such, it is recognised that value dimensions are plural, and produced through social and deliberative processes. In the case of design, value might be generated through:

The process and experience of designing; for example, communities, stakeholders or employees feeling empowered and an increased sense of wellbeing through involvement in a participatory design project; the development of inter-personal skills that can be transferred to other contexts; new forms of social bridging and bonding developed through the process, etc, recognising unequal and inequitable involvement in designing by different groups and communities.

The outcomes of designing; for example, a reduction in greenhouse gas emissions as a result of the re-design of a domestic appliance; decrease in anti-social behaviour due to urban planning: changes in consumer behaviours due to user journey design, etc, recognising disproportionately negative consequences from outcomes designing for some groups and communities.

The wider activities of the design firm or organisation; for example, increasing diversity of the workforce as a result of new EDI policies; growth to knowledge economy and creative clusters; innovation resulting from the presence of design firms and organisation in business ecologies, etc. recognising unequal and inequitable involvement in organisational activities for some groups and communities.

Social and environmental value dimensions such as these might be expressed quantitatively (in monetary or non-monetary terms), where methods exist for translating social or environmental changes into numeric values. One visible example of this is carbon accounting, which puts a monetary value on carbon emissions, supported and enabled by a research base and practitioner expertise, as well as regulatory and data infrastructures.

These values might also be expressed qualitatively. Some value generated through design lends itself more easily to being translated numerically: for example, for some certain kinds of environmental impacts it is relatively clear how to quantify them, with established methods, forms of evidence and governance. However, there are tools increasingly available that allow a number to be put on a range of social values. Both approaches seem appropriate when trying to assess the value produced through design. While the price we are prepared to pay for a product or service gives us some indication of its value, the actual value to the consumer or beneficiary may be far more complex: much is lost in the translation to numbers. Our proposal is that rather than pre-determining in advance a set of metrics to translate impacts to quantified value, such as money, the Design Economy 2021 research opens up the question of whether, and how, to evaluate and quantify the impact and value of design through a deliberative process with relevant stakeholders based on a new Impact Framework.

3.2. Co-creating an Impact Framework to articulate and specify the contributions of design

In order to ask questions about the (positive or negative) impacts of design on society and the environment, we recommend establishing an appropriate set of impact metrics, that participants in the design economy can understand, relate to and engage with. This is an ambitious and complex task. To develop and iterate this framework, we propose combining existing frameworks and metrics and then refining them in dialogue with expert practitioners from different design disciplines, such as those included in Appendix 3.

Relevant frameworks we draw on in particular are the 'four capitals' structure developed in the Construction Innovation Hub's Value Toolkit[3] and the 'four pillars' in the WEF's (2020) stakeholder capitalism framework.

As we show in Appendices 2 and 3, in some specialist design domains assessing the impact and value of design is advanced (e.g. built environment and fashion) compared to, for example, graphic design or user experience design. Some frameworks such as the WEF (2020) focus on organisational reporting, whereas others such as those looking at design projects in the built environment focus on projects over time. Combining these into a novel framework for the whole design economy that addresses the specificities of design and then iterating this through deliberation with sector-specific experts, against the full range of design disciplines, and underpinned through EDI principles, will enable drawing in diverse perspectives and lived experience from across the UK.

In our provisional Impact Framework, we combine elements of the 'four capitals' approach in the Construction Innovation Hub's Value Toolkit with the 'four pillars' of the WEF proposal. We also reviewed UK public policy documents including articulations of natural capital[4] and social capital[5]. We were persuaded by the WEF's emphasis on governance, which can be seen as part of ongoing efforts (or an urgent need for them) in the corporate world to acknowledge and address Environmental, Social and Governance issues (ESG). While governance for a large corporation is very different in terms of scale, infrastructure, data and expertise to that of (for an example) an SME in the design economy, the principles of accountability and transparency associated with governance are shared. From the Construction Innovation Hub's Value Toolkit, we note the distinctions made between social capital (influence and consultation, EDI, and networks and connections) and human capital (employment, skills and knowledge, health and experience). We also noted the long-standing

[3] *https://constructioninnovationhub.org.uk/wp-content/uploads/2020/12/Value-Toolkit_Value-Definition-Framework_v1.0.pdf*

[4] *https://www.gov.uk/government/groups/natural-capital-committee*

[5] *https://www.ons.gov.uk/peoplepopulationandcommunity/wellbeing/bulletins/socialcapitalintheuk/2020*

emphasis on democratic accountability built into participatory design research and practice. To respond to the ambition of the Design Council to articulate the current and future value of design for economy, society and environment, we propose emphasising the governance aspects, understood as crossing scales and institutional forms, rooted in democracy and equity.

We therefore propose four types of capital linked to value creation to underpin analysis of the design economy.

Environmental Capital: The combination of renewable and non-renewable resources and assets (e.g. plants, species, air, climate, fresh water, oceans, land, minerals) that make up the connected ecosystems on which the design economy relies and which it impacts through materials use, waste and pollution in the phases of design such as materials selection, packaging, build/manufacture/implementation, transport/ distribution, use, disposal, and re-use.

Social Capital: The tangible and intangible resources on which the design economy relies and which it impacts, including skills, understandings, relationships that shape ways of living, knowing and being, recognising and addressing the fact that some groups and individuals are excluded and marginalised from being part of, contributing to and benefiting from the design economy.

Democratic Capital: The narratives, beliefs, norms and actions on which the design economy relies and which it impacts, through which stakeholders define, contest and agree purposes, equity, equality, transparency and accountability.

Financial Capital: The combination of assets and resources on which the design economy relies and which it impacts, with associated ways of understanding investment, returns, risk and resilience.

We recognise that the notion of 'capital' has been criticised for conflating subjective and objective dimensions is a way that is potentially tautological (McShane et al, 2016) and for 'freezing' social distinctions in a way that lead to perverse measurement approaches (Bourdieu, 1986). Yet, as with our proposal for the Theory of Change, we believe that the capital-based approach provides a useful heuristic at this stage given the Design Council's new focus in Design Economy 2021 on social and environmental impact and value, to guide future research. We would like to stress however that the proposed Impact Framework is subject to iteration – in particular in light of the findings from the demonstrator projects proposed as part of the methodological recommendations.

Within each of the four capitals, we propose specific characteristics, which can be monitored, evaluated and assessed using qualitative and quantitative means as a starting point for Design Economy 2021.

Environmental Capital

- Emissions to air, water, land, resource use
- Pollution through physical effects such as noise, vibration, radiation, electromagnetic fields
- Biodiversity loss (animal and plants), land use, habitat loss
- Contribution to climate change and global warming
- Generation of solid waste, hazardous waste and chemical management
- Fossil fuel depletion.

Social Capital

- Shared sense of identity which translates into collective action and respects the diversity of workforce/population
- A sense of common purpose and an ability to mobilise to achieve shared goals
- Work-life balance, health and well-being, and stakeholder, beneficiary, user and employee satisfaction
- Connections e.g. frequency of interactions/ size and diversity of social networks for stakeholders, customers, users, beneficiaries, citizens, residents, volunteers or staff
- Equality, diversity and inclusion (especially marginalised and vulnerable people)
- Reciprocity as measured by volunteering rates and participation in civic activities.

Democratic Capital
- Equality and equality in stakeholder involvement, consultation, participation and influence
- Quality of governance, decision-making and accountability as experienced by people
- Autonomy and dignity of stakeholders, customers, users, beneficiaries or staff
- Work and institutional culture that reflects the diversity of the local community
- Feeling of having agency and an ability to influence change through one's actions
- Civic engagement and participation in the democratic processes (on the local and national level)
- Institutional legitimacy reflected through citizens identification with and support for institutions.

Financial Capital
- Return on investment capital including savings
- Wealth generation and employment generation
- Management of assets
- Profit sharing with owners, staff, beneficiaries, customers and other stakeholders
- Oversight, management and reporting of risks and opportunities
- Inclusive growth as manifested through more equitable distribution of income and wealth
- Ethical and sustainable procurement.

The Impact Framework enables articulating the specific contributions of design to achieving impacts, and different forms of value in the design economy, in relation to each of these four capitals. First, there is recognition of the different phases relating to design, which we distinguish as design; implementation (or build/production) and use (also occupancy and re-use). An important distinction to be made in the analysis is between the designs, and what is implemented, which are rarely the same. A second distinction to be made is between the design project, and resulting designed thing (e.g. product, building, service, communication, interaction or system) and the organisation that commissioned or carried out the activity.

The proposed draft Impact Framework shown in Figure 2 suggests how to integrate these design-specific issues across the four types of capital or forms of value creation – social, environmental, democratic and financial. It distinguishes between projects (design, implementation and use) and organisations (strategy, operations and infrastructure). We propose that this framework is revised and iterated during the Design Economy 2021 project informed by the data and insights developed through the methods itemised below and through deliberative engagement with stakeholders from across the design economy.

In terms of indicators for each of these characteristics, for some of them there are existing methods and means of calculation that are accepted and widely used, usually at the organisational level, sometimes with accompanying data infrastructures (i.e. means and resources to gather, combine and analyse data). However for design projects – which might be thought of as temporary organisations – these are rarer, except in the case of construction in the built environment (see examples in Appendix 3). At this stage of developing the Design Economy 2021 methodology it is not possible, or appropriate, to define in advance these indicators. Rather, we propose that that through a series of steps outlined below, the provisional Impact Framework outlined here is developed, deliberated, and refined. However to aid clarity in communicating the framework we suggest some indicators in Figure 2.

Figure 2: Impact Framework summarising four types of capital through which the social and environmental impacts of design are realised in projects and organisations, with example indicators

Project Level	Social Capital	Environmental Capital	Environmental Capital	Financial Capital
Design	Skills development Equitable hiring	Global warming potential Emissions, waste, pollution	Quality of decision-making Diverse inputs	Life cycle social and environmental costing
Implementation	Connection between staff and stakeholders	Emissions, waste, pollution Resource use	Diverse feedback Autonomy and flexibility	Employment generation
Use	Health and well-being of users/ beneficiaries	Emissions, waste, pollution Resource use	Equitable dialogue with users/ beneficiaries	Equitable and ethical generation of wealth

Organisation Level	Social Capital	Environmental Capital	Environmental Capital	Financial Capital
Strategy	Connections between staff and stakeholders Common purpose	Emissions, waste, pollution Resource use	Stakeholder involvement Governance quality	Inclusive growth Uncertainty management
Operations	Work life balance Employee satisfaction	Emissions, waste, pollution Resource use	Agency and dignity in interactions	Ethical procurement Asset management
Infrastructure	Local employment Equitable HR practices	Bio-diversity loss Fossil fuel depletion	Diverse and inclusive engagement	Equitable (re)distribution Shared ownership

Source: UAL Social Design Institute (2021)

4.

Research questions

The proposed research questions are a set of overarching queries that the methodology is designed to answer. They are structured broadly around the four phases of the value chain, with a fifth set focusing on the future.

1. Intent

- What are the key enabling conditions that support the generation of social and environmental value through design?

- What are the attitudes, motivations and intentions of designers, design firms, and their clients, in relation to social and environmental issues?

2. Action

- What design mindsets, practices and skills are used to address social and environmental issues?

- What other organisational practices do organisations use to address social and environmental issues?

- What proportion of designs directly address, or indirectly take into account, social and environmental challenges?

3. Impact

- What sorts of positive social and environmental impacts are designers/ design firms responsible for?

- What are the significant barriers to achieving positive social and environmental impact through design?

4. Value

- What social and environmental value is produced through design work?

- How do design practices create social and environmental value?

5. The future

- What is the potential of design to generate social and environmental value

- How can we unlock this potential?

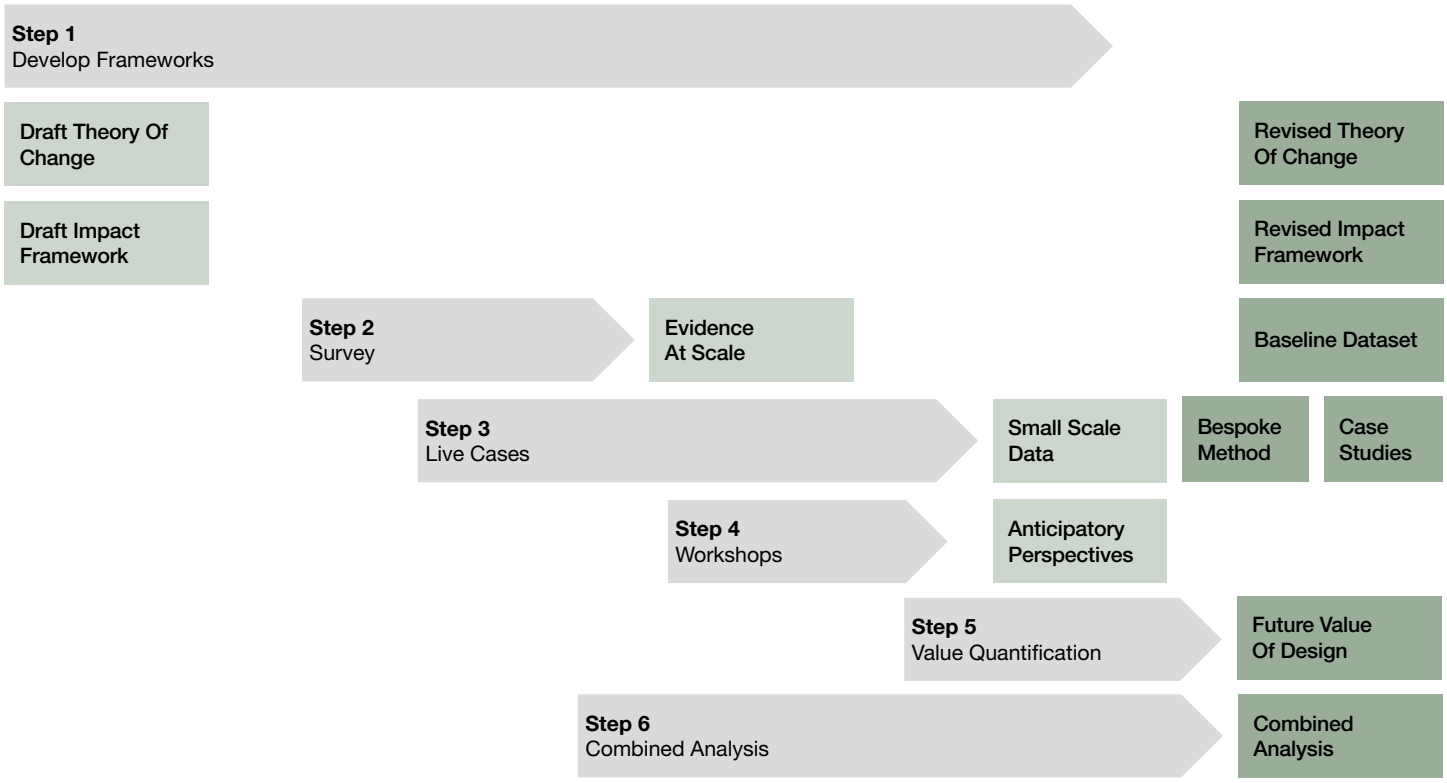
5.

Overview of methods

Answering these questions requires a mixed methods approach that acknowledges the complex and varied relationships between those using design mindsets, skills and practices and the contexts in which they are used – crossing all sectors of the economy. Combining the activities below will allow developing a broad, as well as nuanced, understanding of the intentions, actions, impact and value produced through people using design skills in different contexts, and insights into the potentialities of this to enable positive social and environmental change.

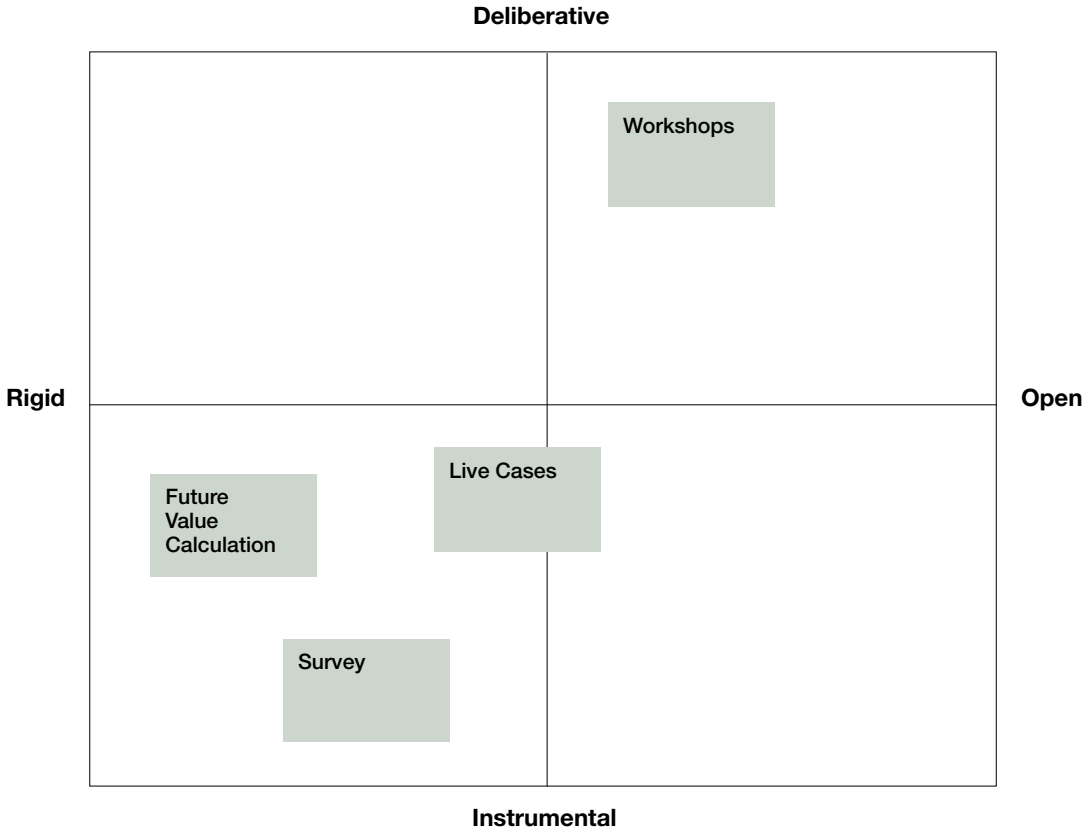
Below we propose the individual methods and show how their combination will result in broad and deep insights on the specific contributions of design to social and environmental impact and value in the UK Design Economy. Figure 3 shows how the methods link together. Figure 4 shows their specific characteristics, using the framework presented in the MOIN (2020) report.

Figure 3: Proposed methods to carry out the research



Source: UAL Social Design Institute (2021)

Figure 4: Mixture of methods used to carry out the research (based on MOIN, 2020)



Source: UAL Social Design Institute (2021)

Step 1
Develop, test and iterate frameworks to articulate social and environmental impact and value. The earlier section introduced two frameworks: a draft Theory of Change (Figure 1) and an Impact Framework (Figure 2) summarising and articulating four types of capital through which the social and environmental impacts of design are realised in design projects and organisations. While this step brings together aspects of existing frameworks and addresses some gaps identified in the MOIN (2020) report, it should be understood as provisional. Testing and iterating the Impact Framework through a series of deliberative stakeholder workshops spanning design sectors and disciplines, and underpinned by EDI principles, and using it to underpin live cases and the survey, will result in a refined or adapted framework for the UK Design Economy 2021 that is both grounded in literature and practice, and which can then be shared and used more widely.

Step 2
Capture data at scale across the design economy by conducting a survey of designers/people using design skills/organisations using design (which is also required by and could be combined with the other methodological proposals). This should ask questions relating to the phases of the Theory of Change: intent, action, impacts and value, i.e. research questions 1-4. This survey of design professionals working in design organisations as well as other kinds of organisation using design (commercial and public sector) would generate unique data about the range of ways in which design skills are used to shape social and environmental impact.

Step 3
Carry out live data gathering with design teams/ firms, resulting in a set of case studies. This is a complementary approach to investigating questions 1, 3 and 4, and allows deeper exploration of the relationships between the different elements of the proposed Theory of Change (intent, action, outcomes/ impacts and value) and Impact Framework (impacts through design projects and on organisations across four types of capital). We suggest starting with demonstrator projects in three disciplines – the built environment, service design and product design – because of their significant potential to generate social and environmental impact and value, as well as the distinct differences between them, representing three 'orders' of design (Buchanan, 2001). In future years, the research could be expanded to include other design disciplines and more widely across the UK regions and home nations.

For the demonstrator projects, we suggest sampling four firms in each sector – more if resources allow. Data gathering should take into account what those organisations already collect; however, we suggest structuring it in line with the proposed Theory of Change (what is referred to in the MOIN report as an impact pathway), and the Impact Framework developed in step 1. The approach with each live case study should include both a quantitative analysis (where possible for establishing impacts and value in numerical terms), as well as desk research (including a review of existing reports by the organisations about their social and environmental impacts, sustainability strategies and other organisational information), and a set of deliberative workshops (e.g. one at the beginning of the live data gathering and one at the end of a three-month period) with a small number of team members (e.g. 6-10 people from each organisation, engaging a range of perspectives based on EDI principles) to explore value generation more openly and thoroughly. Through this more exploratory approach to valuation, the live cases will draw out contributions of design beyond a pre-determined list of indicators, including the intangible value of design in terms of knowledge, ideas, connections, goodwill, that often spread beyond a project.

Step 4
Conduct a series of deliberative and anticipatory workshops, to draw on and share interim insights from the survey and live case studies, as a starting point for discussion with members of the public and expert practitioners, recruited and engaged with a commitment to EDI principles, about how the UK design economy might develop in the future. These workshops will help answer questions 4 and 5. The first workshop asks: What is the value produced through design, allowing testing and revision of the draft Impact Framework. The second is future-facing and asks: What could the social and environmental value of design be in future? What would need to change? What are the barriers to change? The third workshop asks: What forms of evidence will better support the Design Economy?

Step 5
Carry out analysis to quantify design's value by scaling up and projecting forwards. We anticipate that having generated a broad, baseline understanding of how designers and those using design in different organisations act in relation to social and environmental issues through a survey (step 2), complemented by nuanced, contextual understanding of social and environmental impacts in the live case studies (step 3) and deliberative workshops (step 4), another important task in this research can be undertaken. This will require revising the two frameworks (step 1) to account for the specific contribution of design to projects and organisations as proposed in the Impact Framework (Figure 2), located within a larger Theory of Change (Figure 1).

Bringing these together will enable identification of specific headline metrics for different design disciplines, on which to make projections in relation to specific UK social and environmental ambitions. Examples of related work – although not specific to design – is the quantitative analysis of social value related to different kinds of outcome such as employment, or mental health, include the HACT's Social Value Bank (see Appendix 3). An opportunity here is identify the current contribution of design, as well as prospective contributions in the future e.g. 2030

and 2050. Here, the Theory of Change and Impact Frameworks provide a provisional framing of how to conceptualise the relations between design activities and social and environmental impacts, to underpin any prospective value calculation.

Step 6
Combining the analysis. The survey (step 2) will provide a picture at scale. It should be a large enough dataset to start to see some patterns in relation to the Theory of Change for the sector as a whole. It should also permit cross-referencing with data on geographic location, design discipline, design saturation of an organisation, demographic data, and so on, in order to provide some insights factors in relation to social and environmental value. The live case studies (step 3) analysed through the Impact Framework will provide insights into the social and environmental impacts of design in more depth, as well as taking a closer look at the relationship between intent, actions, outcomes and value for different disciplines/ sectors through the production and analysis of small-scale data in the case study organisations. The workshops (step 4) will enable exploration of current and future value through design, grounded in the expertise of leading practitioners.

These approaches to data-gathering can then be combined, into an analysis that articulates the specific actual and potential contributions of design to societal and environmental impacts, which can be valued in different ways, by posing hypotheses that the data can answer, for example:

- To what extent do organisations with a higher degree of design saturation have a stronger orientation to working towards positive social and environmental impacts?

- What relationships exist between enabling conditions, intentions and actions, in relation to social and environmental impacts?

- Which organisation types, in which sectors, or which disciplines of design, are more oriented towards achieving social and environmental impacts?

- What barriers exist in which kinds of organisation towards addressing social and environmental issues?

- How are different social and environmental impacts valued, across different kinds of design context/setting?

The frameworks, and emerging insights from the survey (at scale) and case studies (close up) can also be used to inform the construction of a self-assessment toolkit for designers/ design firms. This will support them to undertake impact and value assessment of their own work, and submit their results to Design Council on an ongoing basis to create a living repository of impact and value data for the design economy and build capacity with design organisations and individuals across the UK.

6.

Equality, diversity and inclusion

This methodology inquires into issues of equality, diversity and inclusion both by ascertaining what kinds of intent and commitments designers and firms manifest in this regard, and by looking at the social outcomes of design work. As the Introductory Paper outlined, EDI principles and commitments should be built in throughout. In this paper we have integrate this in two ways. First, in terms of the underlying conceptual models such as the Impact Framework, equality, diversity and inclusion is a key constituent in building social or democratic capital through design. Second, in terms of the research methods, each of these should be underpinned by commitment to EDI in the recruitment and involvement of research participants, forms of engagement that are inclusive and non-exclusionary, as well as in the topics discussed, and in terms of the analysis of the data. For example workshops organised during the 'live data gathering' research phase will ask explicitly about EDI issues. Moreover, sampling of participants for the workshop series should aim for diversity in terms of race, religion, relative economic status, age, sex, gender, disability, and regional socio-economic context. Practical organisation and delivery of events and workshops should be inclusive and non-exclusionary.

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Credits

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BOP is a research and strategy consultancy specialising in culture and the creative industries. Over 20 years it has supported government bodies, leading arts and cultural organisations, property developers and international agencies through over one thousand assignments resulting in strategies, programmes and impact.

About the Social Design Institute, University of the Arts London
The Social Design Institute is one of UAL's new institutes. Its mission is to develop and use research insights to change how designers and organisations go about designing, resulting in equitable and sustainable outcomes. Its focus areas are the intersection of design and value, systems and public policy through original research, knowledge exchange and collaboration.

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Appendix 1. Previous studies

This section offers a summary of some of the key findings from academic research literature on design in relation to social and environmental impact and value, adding to the discussion in the MOIN (2020) report on social and environmental impact and value.

Design has, on occasion, been presented as offering viable solutions to the dual crises of climate emergency and social injustice (growing inequalities and discrimination on the basis of race, sex, age, health and other factors). For instance, Puckett and Gethering (2019) review some design solutions in a range of projects funded by the Technology Strategy Board; the collection edited by Tsekleves et al. (2021) looks at how design can address the global challenges arising in relation to social responsibility in the context of the UN's Sustainable Development Goals. At the same time, a barrage of studies has exposed design as complicit with corporate capitalism and a major factor in aggravating the socio-environmental crisis (e.g., Fry, 2009; Julier, 2017; Boehnert, 2018; Monteiro, 2019).

What is emerging from these debates is the need for a more systemic (going beyond the narrow boundaries of individual projects), critical (attentive to positive and negative aspects) and reflexive (aware of being conditioned by social contexts) understanding of the implications of designing. Without this, it is difficult to assess in comprehensive terms the social and environmental impacts of design across the whole Design Economy.

Our rapid review of extant literature shows that the current understanding of the social and environmental impacts of design has developed in a fragmented way. It can also be suggested that, historically, it has developed in two parallel tracts, following siloed approaches to measuring environmental impacts as separate from the social. Regarding the former, for several decades, design has been focused on reducing negative environmental impacts through redesigning specific qualities of individual products, usually following the waste hierarchy of reduce-reuse-recycle (Burall, 1991; Mackenzie, 1997). However, according to Ceschin and Gaziulusoy (2016), such approaches lack depth, promote green consumerism and focus predominantly on single issues. Therefore, they do not provide significant environmental gains.

A number of alternative approaches has since been developed. Amongst these, eco-design focuses on lowering environmental impacts throughout the life cycle of products from the extraction of raw materials to final disposal (Tischner and Charter, 2001; Millet et al., 2006). Biomimicry is an approach aimed at emulating patterns, strategies and processes found in nature within a design or business context, showing an attitude towards nature that is shifting from domination to participation (Biomimicry Institute, 2020). The term 'circular economy' means creating systems characterised by closed loops of technical 'nutrients' and open loops of biological 'nutrients' (Ellen MacArthur Foundation, 2014; Earley and Goldsworthy, 2018).

The main practical translation of these is through Life Cycle Assessments (LCA) undertaken in association with environmental management systems (Ecodesign Directive by the European Commission, 2005) which has now been adopted by most major companies, "especially for those producing energy using products" (Ceschin and Gaziulusoy, 2016). Whilst Environmental Life Cycle Assessment considers mainly environmental impacts along supply chains, in recent years Social Life Cycle Assessment methodologies have also been developed to assess the social impacts of products and services, and used in corporate social responsibility (e.g., by RISE1) to support a more comprehensive sustainability assessment of impacts, benefits and related trade-offs (UNEP,

2009; Sala et al., 2015). Nevertheless, there is still a need to further develop tools to support decision making at a managerial and strategic level.

In terms of the other parallel strand, the social impacts of design have been typically interpreted in a community-focused way (Chen et al., 2015) for instance, as improvement to the quality of life, especially for marginal groups of people who aspire to "longer-term, humanistic, and more sustainable ways of living" (Sanders and Simons, 2009, p.1). This opens up a whole range of possible design applications. For instance, social impacts can be said to be created through collaborative design processes (for instance, co-creation workshops where people make things together) aimed at enabling social interactions, integration, and empowerment (Hirscher et al., 2019). In broader terms, and looking at the forms of participatory design specifically directed at creating new social and relational forms, design for social innovation is an obvious example (Björgvinsson et al., 2012; Manzini, 2015). In a yet broader sense, one could look at the connection between design and activism (Fuad-Luke, 2009; Julier, 2013) or the more recently articulated connection between design and social justice (Costanza-Chock, 2020).

This reading is necessarily selective as there are multiple schools and traditions in design with claims to social impact (see, for instance, Scottish Executive, 2006). This said, it is premature to conclude that the sheer volume of texts concerned with the topic adds up to a robust body of evidence – the proverbial connecting of the dots and situating this understanding across interdisciplinary contexts and sectors is still very much a work in progress.
Thus, as indicated above, what emerges is a fragmented field which does not offer a holistic perspective. That said, the situation is gradually changing with overarching work done across design studies, behavioural science, environmental humanities, and sustainable management, to name just some. Recent attempts to synthesise these resulted in much progress in the area of Design for Sustainability (DfS) (Gaziulusoy and Ryan, 2017; Vezzoli et al., 2017; Ceschin and Gaziulusoy, 2019; Williams, 2019). Drawing on different disciplinary sources, DfS is characterised by its broad and holistic understanding of the role of design in environmental and social transformation towards sustainability. Crucially, it recognises that this transformation occurs at different levels; from materials to products, product–service systems, social organisations and socio-technical systems. The literature related to DfS is therefore useful in identifying general patterns of how design produces sustainability contributions, outside of definitional and methodological silos.

Significant developments in overcoming existing methodological limitations, including the silos dictated by the narrow impact agenda, come from recent work focused on social value. The concept of social value, as elaborated in the context of the built environment, focuses on a spectrum of outcomes encompassing environmental, economic and social contributions specified by those impacted by projects (UKGBC, 2020). More specifically, drawing on literature focused on well-being, the social value of architecture underpinning RIBA's Social Value Toolkit covers positive autonomy and emotions through connections with nature and other people, as well as offering opportunities for an active lifestyle and participation (Samuel, 2020). In contrast to the one-dimensional, quantitative language applied to impacts, value-centred approaches allow one to think of the effects of design in spatialised and ecological terms and as co-produced by multiple stakeholders. The focus on value leads to more integrated approaches to sustainability (Myrick, 2011; Marsden, 2013; Donovan, 2017) which emphasise the importance of engaging the community in the design process, while concurrently aiming to achieve sustainability goals at a more manageable scale (Ghavampour and Vale, 2019).

In general, what this emerging work points to is the need for more holistic concepts of analysis which could lead to more promising methodological approaches (see for instance, Crossick and Kaszynska, 2016). This is in line with the recommendations for DEDE as outlined in the MOIN report which highlights the need for a more holistic conceptualisation and assessment (MOIN, 2020). The current paper supports this, and shows how the need for more holism arises from the understanding of design and design research.

Appendix 2. Fashion and the built environment 'deep dives'

To inform the development of our methodology and complement the rapid literature review summarised above, we have taken two 'deep dives' into fashion and the built environment as exemplar sub-sectors of design with significant social and environmental impacts and relatively (compared to the other sub-sectors) well-established ways of monitoring and measuring these impacts. In order to gain practical insights into these areas, we have undertaken desk research and consultations with experts in the field[6]. This aspect of the project looked at the measures and tools used by design professionals in their daily practice. Below we summarise what we have established in relation to fashion and the built environment, before generalizing across the two sectors with a view to articulating key insights.

Key insights

- There is a variety of evidence to demonstrate the social and environmental impacts of design but not at an aggregate level across the Design Economy.

- Design activities can have positive and negative impacts on the environment and society.

- There is no one standardised approach, nor a set of indicators consistently used across the Design Economy, although this situation is changing with the efforts of campaigning organisations to make sustainability concerns and social value more prominent in organisational cultures, stakeholder relations and decision-making processes.

- It is very difficult – if not impossible – to aggregate the results of impact assessment at product level in fashion in order to get a result at company level or for the national economy; the same applies to individual projects in the built environment.

In fashion, most of the impacts come from the production and use phases (i.e., after design, but resulting in part from design decisions). In the built environment, the impact modelling is also selective, with most of the existing green building assessments focusing on narrow performance improvements against the baseline set by regulation and standards. Considerations specific to design – particularly in relation to systemic aspects (across the global ecology) and counterfactual approaches (e.g. what if no building was built in the first place?) – are rare.

- Some case studies (in the case of architecture, post-occupancy evaluation) show that social and environmental impacts do occur, but they continue to be evidenced on a case-by-case basis.

- SROI assessment is used by firms to establish their social and environmental impacts; it is voluntary and the fact that different frameworks are used by different organisations makes it difficult to add up the results.

- The situation is gradually changing with the growing adoption of relevant frameworks and assessment tools, e.g., the Higg Index in fashion and the National TOMs Framework for public procurement. Even though these do not have exclusive focus on design, the granularity of information will no doubt help to understand the role of good design as the existing datasets grow.

Fashion

There is not a common framework for assessing the social and environmental impacts of fashion used by design organisations and companies. Drawing from sustainability management, some companies map out their sustainability activities using certain tools, such as the one developed by Googins et al. (2007).

[6] *Professor Dilys Williams, Jeremy Till, Professor Flora Samuel, Joe Giddings, Dr Anna Sammarco, Dr Stine Hedegaard.*

There are some indexes (e.g., Higg Index and the Fashion Transparency Index) which different companies refer to in order to be classified on the basis of their sustainability performance. The Higg Index, developed in 2012 by the Sustainable Apparel Coalition (representing nearly 60% of the global footwear and apparel market), aims at creating a standard approach for the apparel and footwear industry to measure sustainability impacts (with a focus on brands, facilities and products), and driving behaviour for improvement (Radhakrishnan, 2014). The Higg Index (which includes a web tool) asks practice-based, qualitative questions to assess environmental (energy/greenhouse gas emissions, water, wastewater/effluent, air emissions, waste and chemicals management) and social impacts across the life cycle of an apparel and footwear product.

The Fashion Transparency Index was developed by Fashion Revolution in 2015 with the aim of reviewing and ranking 250 of the world's largest fashion brands and retailers according to how much they disclose about their social and environmental policies, practices and impacts (Fashion Revolution, 2020). Brands participating in the Fashion Transparency Index are asked to fill in a questionnaire based on 220 indicators to measure issues related to animal welfare, biodiversity, chemicals, due diligence, forced labour, gender equality, living wages, purchasing practices, waste and recycling, and more. Even non-participating brands receive points for information that has been publicly disclosed on their websites, through self-published annual reports and via third parties, and finally the Fashion Transparency Index uses a rating methodology to benchmark the public disclosure made by companies. Results of such measurements (undertaken through surveys, interviews, and experts' validation) are published by the Global Fashion Agenda in their yearly reports, which score fashion brands on a scale from 0 to 100. These are, however, not standardised approaches and are based on self-reporting.

In practice, companies internally set their sustainability ambitions and targets and then measure the impacts of their activities against them. To give some examples, luxury fashion group Kering (2019) has developed and uses the Environmental Profit and Loss (EP&L) tool to measure the impact of an economic activity on the environment (considering air pollution, land use, waste, water consumption and water pollution), applying financial metrics. Gucci uses a different iteration of the EP&L tool to measure its sustainability impacts, at material/product level (e.g., % chemical substances, % wasted materials, % material used, types of processes used, % energy used, types of energy used, CO2 and other gas emissions, emission of heavy metals, etc.). Burberry uses the Dow Jones Sustainability Index to assess their sustainability impacts in relation to products, the company and communities (this means that Burberry sets its sustainability strategy, objectives and targets – e.g., zero carbon emissions, use of renewable energy, number of people positively impacted by their projects, etc). High-street fashion manufacturer and retailer H&M is adopting a Biodiversity Footprint Assessment tool to identify the biggest impact areas of the business on biodiversity. When it is too difficult to get quantitative results some companies use a traffic light system, that is a non-numerical model, where they associate specific conditions to the colours green, amber and red.

The integrated nature of the fashion sector, with many vertical organisations that include nearly the whole supply chain from sourcing materials to design, production and retail, might in theory make it easier to determine the specific contribution of design to social and environmental outcomes. However, not only is there not a uniform metric, but also the tools used are varied and selective. Further, they do not comprehensively cover the spectrum of social and environmental impacts mapped out in research and educational settings. For instance, the Centre for Sustainable Fashion Framework outlines eight issues for fashion design for sustainability: Well-being (human and animal); modern day slavery; water stress; diminishing resources (human and natural); climate change; hazardous chemicals and pollution; land use and biodiversity loss; and consumption and waste (Williams, 2019). The fashion design sector thus presents a fertile territory for producing frameworks, tools, methods and datasets that might be relevant to other sub-sectors in the design economy (even though these

are necessarily contextually circumscribed and come with particular histories and interpretations of what matters as social and environmental impacts). The issue of practical implementation remains a challenge, as no framework with the attached methods and datasets has been comprehensively adopted to date.

Built environment

In architecture and the built environment, codification through building and other regulations have been the prime mechanisms by which social and environmental goals were set. For instance, with respect to environmental impacts, the government's Common Minimum Standards in the Government Construction Strategy asked that an environmental assessment be carried out for all public projects. In practice, however, this can be achieved by multiple means with a variety of different frameworks to choose from (Lami and Mecca, 2021). The fact that private firms and corporates are not subject to the same level of regulation compounds the difficulty of uniform assessment. Indeed, many of the measures used to ensure some levels of compliance are voluntary and relatively open-ended. For instance, Architects Declare and Construction Declares are initiatives of a network of architectural practices and construction companies committed to addressing the climate and biodiversity crises by signing up to an 11-point declaration.

Since 2015, and with the introduction of the UN Sustainable Development Goals, considerations of sustainability have figured more prominently in the discourses of architecture and the built environment. This is reflected in the introduction of sustainability indicators to the Architects' Journal ranking of top architectural firms, the AJ100, and plans for future regulation by the Architects Registration Board. However, the difficulty remains in the fact that the overarching indicators – such as Sustainable Development Goal, which aims to "make cities and human settlements inclusive, safe, resilient and sustainable" and tracks sustainable development within cities with targets and indicators at a global level – are based on high-level statistical data and with little reference to design specifically. The same problem – namely the difficulty of homing in on design across the lifecycle – applies to bottom-up approaches.

Current assessment methods do not look at the lifespan of individual buildings across all the stages – from raw material extraction, to maintenance, occupation/use and 'end of life' scenarios – and even less, the role that design plays across these stages. In other words, assessment is selective and, currently, largely dominated by greenhouse gas emissions of buildings (Méquignon and Haddou, 2014) and the energy demand for operation (Ramesh et al., 2010). That said, approaches such as the Building Research Establishment Environmental Assessment Method (BREEAM) are becoming prevalent in construction. BREEAM sets standards for the environmental performance of buildings through design, specification, construction and operation and thus presents a more holistic approach (while remaining voluntary).

With regard to social impacts, the public procurement measures introduced with the 2012 Social Value Act had an impact on how the sector demonstrates its social value. However, rather than affecting the design aspect of projects, this has driven changes in how organisations operate in terms of their hiring practices (the jobs created during construction). Initiatives such as the Social Value Portal's National Themes, Outcomes and Measures (TOMs) Framework, whose aim is to provide a minimum reporting standard for measuring social value across procurement and management using a variant of the Social Return on Investment (SROI) approach; RIBA's Social Value Toolkit for Architecture; and the guidance issued by the UK Green Building Council all have potential to lead to significant changes in terms of both actual practices and our ability to understand the social and environmental impacts of design through harmonised frameworks and large datasets. For now, however, the data remains very fragmented with different evidencing methods being used by different organisations, and it remains methodologically difficult to isolate the effects of design from the overall effects of projects.

Appendix 3. Impact indicators / metrics review

This is a brief and non-exhaustive overview of some of the leading approaches to assessing the impact and value of design and/or business used or disseminated in the UK. Some of them focus specifically on design sectors (e.g. construction and built environment, product design) whereas some are more general, about organisational action.

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BREAAM
Sector Built environment

Focus Social and environmental value

Background BREAAM is an international sustainability assessment method for planning projects, infrastructure and buildings with certification. It recognises and reflects the value in higher performing assets across the built environment lifecycle, from new construction to in-use and refurbishment.

Source *https://www.breeam.com/*

Key constructs
- Management
- Energy
- Health and wellbeing
- Transport
- Water
- Materials
- Waste
- Land use and ecology
- Pollution

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Construction Leadership Council Value Toolkit
Sector Built environment

Focus Social and environmental value

Background Developed by Construction Leadership Council, this framework guides the identification, organisation and communication of the whole-life outcomes achieved through specific projects, programmes and portfolios in the built environment.

Source *https://constructioninnovationhub.org.uk/wp-content/uploads/2020/12/Value-Toolkit_Value-Definition-Framework_v1.0.pdf*

Key constructs
This value toolkit has four types of 'capital' for defining value sought/ produced through a construction project.

- Natural
  - Air
  - Climate
  - Water
  - Land
  - Resource Use
  - Biodiversity

- Human
  - Employment
  - Skills and Knowledge
  - Health
  - Experience

- Social
  - Influence and Consultation
  - Equality and Diversity
  - Networks and Connections

- Produced
  - Life Cycle Cost
  - Return
  - Production
  - Resilience

—

European Ecodesign Directive
Sector Energy-using products

Focus Environmental impact

Background Developed by European Union, this directive established a framework for the setting of ecodesign requirements for energy-related products.

Source *https://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/ecodesign_en*

Key constructs
In so far as they relate to product design, significant environmental aspects must be identified with reference to the following phases of the life cycle of the product:

- raw material selection and use;
- manufacturing;
- packaging, transport, and distribution;
- installation and maintenance;
- use; and
- end-of-life, meaning the state of a product having reached the end of its first use until its final disposal.

For each phase, the following environmental aspects must be assessed where relevant:

- predicted consumption of materials, of energy and of other resources such as fresh water;
- anticipated emissions to air, water or soil;
- anticipated pollution through physical effects such as noise, vibration, radiation, electromagnetic fields;
- expected generation of waste material; and
- possibilities for reuse, recycling and recovery of materials and/or of energy, taking into account Directive 2002/96/EC.

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Higg Index
Sector Fashion

Focus Social and environmental value

Background Developed by the Sustainable Apparel Coalition based in the US, the Higg Index is a suite of tools that enables brands, retailers, and facilities of all sizes — at every stage in their sustainability journey — to accurately measure and score a company or product's sustainability performance.

Source *https://apparelcoalition.org/the-higg-index/*

Key constructs
Higg Product Impacts:
- Global warming potential
- Nutrient pollution in water
- Water scarcity
- Fossil fuel depletion
- Chemistry

Higg Facility Impacts - Environmental
- Environmental Management Systems
- Energy Use and Greenhouse Gas Emissions
- Water Use
- Wastewater
- Emissions to Air (If Applicable)
- Waste Management
- Chemical Management

Higg Facility Impacts - Social and Labour
- Recruitment and Hiring
- Working Hours
- Wages and Benefits
- Employee Treatment
- Employee Involvement
- Health and Safety
- Termination
- Management Systems
- Empowering People and Communities

Full value chain assessment looks at:
- Animal Welfare
- Biodiversity/Land Use/Habitat loss
- Deforestation
- Energy/Fuel Use (or Fossil Fuel Depletion)
- Greenhouse Gas (GHG) Emissions
- Air Emissions/Air Pollution (non GHG)
- Solid Waste
- Hazardous Waste
- Chemical Hazard/Mgmt
- Water Use/Water Scarcity
- Wastewater/Water Pollution/Eutrophication

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Julie's Bicycle's Creative Green Tools

Sector Arts and culture

Focus Environmental impact

Background Julie's Bicycle is a UK based organisation focussing on reducing the environmental and carbon impact of the arts and cultural sectors. It provides a free-to-use digital platform for organisational reporting, consultancy, certification, awards and community. The Creative Green Tools are used by 5,000 organisations in 50 countries worldwide. Julie's Bicycle's carbon and environmental calculators are used to record, measure and understand the impacts of their venue, office, tour, production, event or festival.

Source *https://juliesbicycle.com/reporting/*
Key constructs
Environmental impacts of formats common in the arts sector including venue, office, tour, production, event or festival.

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Life Cycle Assessment (LCA)

Life cycle assessment is an environmental management approach to evaluate the impact of a product, a system, or an activity on the environment. Analysis is done over the entire 'life cycle' of the product or service, from production, pre-manufacture, production/implementation, use, and disposal of the product, including supporting infrastructure. There are numerous books and frameworks for carrying it out, often rooted in engineering and sustainability management, and adapted to specific industry sectors and with associated consultancy, training and expertise. Carrying out an LCA is resource intensive. In order to carry out LCA, organisations have to analyse and quantify aspects of their materials use, which may be very specific or shared with other sectors or organisations. Underpinning LCA is the quality of the underlying Life Cycle Inventory, with datasets about materials, processes, energy and transport, some of which are sector-specific. For an overview of LCA within sustainable product development, see Su (2020). See also these LCA services by commercial providers.

Examples include:
- Sphera. *https://sphera.com/life-cycle-assessment-lca-database/*
- Ecochain *https://ecochain.com/knowledge/life-cycle-assessment-lca-guide/*

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National Themes Outcomes and Measures (TOMs) Framework

Sector Public and private

Focus Social value

Background Produced by the UK Social Value Taskforce, this framework aims to bridge the gap between the public and private sectors, and to provide a minimum reporting standard for measuring social value to embed it into their procurement and management processes.

This framework and guidance was produced in response to the Social Value Act. It provides outcomes for specific stakeholders (direct and indirect) and suggests indicators or measures to assess these outcomes, as well as proxy outcomes. These can be quantified and monetised, resulting in numerical values for benefit to the individual, government and communities. The emphasis on the government in this framework comes from the origins in the specific legislation, which may not be a good fit for many organisations in the design economy which are business-facing.

Source *https://www.local.gov.uk/sites/default/files/documents/National%20TOMs%202019%20Guidance%201.0.pdf*

Key constructs
Jobs: Promote Local Skills and Employment:
- More local people in employment
- More opportunities for disadvantaged people
- Improved skills for local people
- Improved employability of young people

Growth: Supporting Growth of Responsible
- Regional Business
- More opportunities for SMEs and VCSEs
- Improving staff wellbeing
- A workforce and culture that reflect the diversity of the local community
- Ethical procurement is promoted
- Social Value embedded in the supply chain

Social: Healthier, Safer and more Resilient
- Communities
- Crime is reduced
- Creating a healthier community
- Vulnerable people are helped to live independently
- More working with the Community

Environment: Protecting and Improving Our
- Environment
- Climate impacts are reduced
- Air pollution is reduced
- Better places to live
- Sustainable Procurement is promoted

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RIBA Social Value Toolkit

Sector Architecture

Focus Social value

Background Developed by RIBA, the Social Value Toolkit provide a practical tool for concrete discussions about the value of architectural design with non-architects. It includes data-gathering through surveys as well as proposing how to monetise the social value created through architecture.

Source *https://www.architecture.com/-/media/GatherContent/Social-Value-Toolkit-for-Architecture/Additional-Documents/RIBAUoR-Social-Value-Toolkit-2020pdf.pdf*

Key constructs
The social value of architecture is defined as
- fostering positive emotions, whether through
- connections with nature or offering opportunities for an active lifestyle,
- connecting people and the environment in appropriate ways
- providing freedom and flexibility to pursue different lifestyles (autonomy).
- participation, supporting communities to help design and build their homes and neighbourhoods.

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Social Return on Investment (SROI)

Focus Social value

Background Produced by Social Value UK, the national network for people interested in social value and social impact, this toolkit includes training, technical resources and reporting. It enables measuring, managing and accounting for social value or social impact. SROI assess change in ways that are relevant to the people or organisations that experience or contribute to it.

Source *https://www.socialvalueuk.org/resources/sroi-guide/*

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Social Value Bank

Focus Social value

Background Produced by HACT, the UK housing sectors ideas and innovation agency, this is a methods bank that enables housing providers to provide a basic assessment of social impact, to provide evidence of value for money, and compare the impact of different programmes in response to the Public Services (Social Value) Act 2012. The values can also be used within a full Social Return on Investment (SROI) or Cost-Benefit Analysis.

Source *https://www.hact.org.uk/social-value-bank*

Key constructs
- Employment
- Local environment
- Health
- Financial inclusion
- Youth
- Other

Activity values are those where the social value is obtained by the person simply undertaking an activity. An example of an activity value might be the 'frequent mild exercise' value. In this case, if we run an exercise club we can count that amount of social value for each person who shows up regularly. You are therefore typically able to measure the average amount of social impact delivered through activity values simply by referring to records of attendance.

Outcome values are values that can be applied when we have evidence that something has changed for someone. For some outcomes your records may be enough (e.g. number of people moved into employment) for others, you need to ask participants questions before and after the activity. For example, you might run some budgeting skills sessions with the aim of increasing 'financial comfort'. To apply the value you need to know that they have moved from a state of low financial comfort to higher financial comfort.

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UK Green Building Council Social Value Framework

Sector Built environment

Focus Social and environmental value

Background Developed by the UK Green Building Council, this framework defines social value for the built environment in a way which is applicable for every project or place. It includes a high-level process and principles for delivering social value across the asset lifecycle.

Source *https://www.ukgbc.org/ukgbc-work/framework-for-defining-social-value/*

Key constructs

Social
- Community networks
- Community engagement
- Local identity
- Diversity of building uses
- Security and safety

Economic
- Employment
- Skills
- Small businesses
- Affordable housing
- Physical resilience

Environmental
- Sustainable transport options
- Green spaces
- Air quality
- Resource use and waste
- Biodiversity and urban greenery

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World Economic Forum - Stakeholder Capitalism Sector Business

Focus Social and environmental value

Background Produced by the World Economic Forum, Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation. (September 2020) offers an integrated framework for business including metrics with four pillars.

Source *http://www3.weforum.org/docs/WEF_IBC_Measuring_Stakeholder_Capitalism_Report_2020.pdf*

Key constructs

Governance
- Governing purpose
- Quality of governing body
- Stakeholder engagement
- Ethical behaviour
- Risk and opportunity oversight

Planet
- Climate change
- Nature loss
- Freshwater availability
- People
- Dignity and equality
- Health and wellbeing
- Skills for the future

Prosperity
- Employment and wealth generation
- Innovation of better products and services
- Community and social vitality

Appendix 4. Review of core constructs

This section summarises some of the academic literature relating to core constructs associated with measuring and articulating the social and environmental impacts and value of design in the Design Economy. This summary shows that there is extensive research about these constructs, which have distinct histories and ways of understanding the actual or potential contribution of design to addressing social and environmental issues. They are rooted in different theories of what can be known and how change happens. Acknowledging these histories and different ways of understanding 'impact' and 'value' will enable more nuanced understanding of the mechanisms and pathways of change attributed to design. This review shows that terms like 'resilience' can be understood though different lenses, and rely on different understandings of what counts as evidence and what is associated with the construct. The implication is that any effort to select some terms over others (eg well-being) for inclusion in a framework comes with inclusions, exclusions and histories.

Resilience

In its broadest sense, resilience signifies the capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or future development of the system (Masten, 2015). The concept evolved in parallel across ecology (Folke et al., 2002), psychology (Herrman et al., 2011) and social sciences (Adger, 2000). In recent years, resilience has emerged as a boundary concept to integrate the social and natural dimensions of sustainability (Ollson et al., 2015). In this context, both the terms socio-ecological resilience and socio-ecological sustainability are often used (Cockburn et al., 2020). Understood in this sense, resilience characterises responses across natural, human and hybrid systems; the responses in question are the ability to adapt (bounce back) but also to transform (bounce forward).

Socio-ecological resilience – as it is understood here – is a concept that spans a range of issues, including those associated with sustainability. Resilience can be linked with design in a number of ways. So-called ontological design (Escobar, 2011) recognising a plurality of worlds, is informed by socio-ecological thinking insofar as it considers equilibria, thresholds, feedback mechanisms, self-organisation and function across human and non-human systems. Design for resilience (Baek et al., 2015) and design for sustainability (Ceschin and Gaziulusoy, 2019) share a more applied concern for the socio-ecological implications of design. On a smaller scale, and with an emphasis on social relations and institutional arrangements, design for social innovation (Manzini and Till, 2015; Thorpe and Rhodes, 2018) aims to "develop personal and collective capacity to respond to and influence change, to sustain and renew the community, and to develop new trajectories for the communities' future" (Magis, 2010, p.402).

The construct of socio-ecological resilience can thus be operationalised though design in a number of ways, including a framework for evaluating the social and environmental impacts of design. Spanning social and environmental concerns, this may build on social memory and peer learning as indicators of social capital, and biodiversity and protection of local environmental areas as indicators of natural capital (Roberts et al., 2016). The crucial factor is that operationalising this construct allows us to break away from the siloed thinking dictated by the measurement approaches developed in relation to social and economic impacts.

Well-being

Well-being has moved onto the agenda of government and other agencies in the last decade. The Office for National Statistics now routinely measures national well-being in the UK with an emphasis on subjective well-being (ONS, 2020).

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Well-being

Well-being has moved onto the agenda of government and other agencies in the last decade. The Office for National Statistics now routinely measures national well-being in the UK with an emphasis on subjective well-being (ONS, 2020). In contrast, multidimensional frameworks have gained traction in France and elsewhere (Stiglitz et al., 2009; UNDP, 2014). Notably, measuring well-being and progress is a key priority that the OECD is pursuing as part of its Better Life Initiative through various streams of research and on-going work (OECD, 2021). The OECD well-being evaluation focuses on current and future well-being, with current well-being broken down into three domains – material conditions, quality of life and sustainability – while future well-being

is analysed in relation to four capital dimensions; natural, economic, human and social.

Constructs such as the OECD's link objective social determinants of well-being (e.g., health and employment opportunities) with intersubjective categories (such as community identity) and subjective well-being at individual level. This holistic understanding, touching as it does on the notion of socio-ecological resilience defined above, can have multiple translations across design. In the context of urban design and regeneration, well-being has been linked with the concept of 'liveability' (Kashef, 2016) and increasingly focuses on improved mental health (WHO, 2017), not just in relation to green spaces but also the role of social relationships (Anderson et al., 2016). Approached through this broad lens, design can be used to improve the personal and societal well-being and happiness of people (Petermans and Cain, 2020). Furthermore, the construct of well-being relates to design research and practice for health (Tsekleves and Cooper, 2017), design for social innovation (Manzini, 2015), co-production in service delivery (Cottam and Leadbeater, 2004), infrastructuring (Thorpe and Rhodes, 2018), design for conviviality (Lizarralde and Tyl, 2018) and design for co-habitation (Smith, Bardzell and Bardzell, 2017).

Mindset re-framing and behaviour change

Mindset re-framing and behaviour change came into prominence prompted by the growing realisation that some of the most pressing global issues (e.g. the climate emergency or growing social inequalities) are 'wicked problems' (Rittel and Webber, 1973). One particularly cogent example in this context is the challenge associated with the de-growth agenda (Weiss and Cattaneo, 2017), namely finding a new settlement where reducing production and consumption is the accepted objective. Needless to say, changing consumer behaviours is difficult, and telling most people that they should take satisfaction from having less stuff is a hard sell (pun intended). It is even more challenging to convince those who stand to gain financially from producing more stuff. Faced with a multitude of crises that require "large-scale behaviour change and places significant psychological burdens on individuals" (Bavel et al., 2020), decision makers called on the social and behavioural sciences in search of approaches to help align individual and collective interests. This, however, has largely resulted in dissatisfying and unimaginative approaches that Shove (2009, p.1273) criticised as the "typically restricted models and concepts of social change" and the "dominant paradigm of 'ABC' – attitude, behaviour, and choice".

It could be said that the ambition of design to challenge the status quo – be it through frame innovation (Dorst, 2015) or reconfiguration, cross-appropriation, and articulation involved in the "disclosure of new worlds" (Spinosa, Flores and Dreyfus, 1997) – escaped the restrictive understanding of change and transformation criticised by Shove. While the potential of these is clear, the challenge of operationalisation and practical implementation remains significant. A number of researchers (Niedderer, Clune and Ludden, 2018) have started to explore the role of design to change user behaviours and improve a range of social and environmental issues, and developed different approaches, such as Design for Sustainable Behaviour (DfSB) (Lilley, 2009; Bhamra et al., 2011) and Design with Intent (Lockton, 2013), but it is not clear yet whether these can match the ambition. Moreover, the question of connecting the dots has been the focus of transition design (Irwin and Kossoff, 2017). However, the reframing ideas and the pragmatics of implementation do not – yet – meet. As pointed out by Niedderer et al. (2014), there is a need to develop assessment metrics and techniques for a systematic analysis and evaluation of DfSB.

Equality, Diversity and Inclusion (EDI)

Inclusion has been the main interface between design and EDI. The construct of inclusion has been operationalised in design to ensure that products, services, interfaces and environments are not only easier to use for those with special needs or limitations, but also are better for everyone (Coleman, Clarkson and Cassim, 2008). In particular, there is a long-standing discussion of 'inclusive design' and 'design for all' in the context of the built environment to create inclusive spaces that meet accessibility needs. EDI in this context is operationalised through design because of its effort to remove the barriers that create undue effort and separation and to enable people to participate equally, confidently and independently in everyday activities (Fletcher, 2006). In the UK, accessibility is also built into some design sectors through regulation, assessments and training e.g., in relation to disabled access in the built environment and in graphic communication and web design.

In management and organisational theory, the implementation of the EDI agenda often comes down to "improv[ing] engagement with different groups in society and build[ing] diverse needs and interests into [...] design, delivery and communications" (Department of Energy and Climate Change, 2012, p.1). Thus it seems to have become an imperative that diversity should be handled (or managed) in a way that promotes the highest degree of inclusion and, with it, the highest degree of equality possible. The most common term used in this context is 'diversity management'. In this context, design has been used as a tool to manage organisational change through various implementations of so-called co-design (Salmi and Mattelmäki, 2019). Using the iterative process imported from the tradition of design (Ehn, 2008; Björgvinsson et al., 2012) is promising as a way of operationalising the EDI triad in organisational contexts. For instance, political scientists Durose and Richardson (2016) show how design can be used to facilitate co-production in public policy, and thus indirectly address the goals of EDI.

Overall conclusions

In line with the lessons drawn from the rapid literature review and the two sector deep dives, this discussion demonstrates that there are different ways of conceptualising the social and environmental impacts of design. These rest on different ways of understanding activity and change, different forms of data gathering and analysis, and different applications of these constructs. The implication is that picking one construct, over others, is not simple or neutral – they come with intellectual histories and specificities which may not be easy to transfer across the diverse forms of practice in the design economy.

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