Perceived Design Value

design is a method of creating happy and satisfied societies

The socio-economic impact of Design

Aija Freimane

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Summary of the postdoctoral study 'Identification system of design's socioeconomic impact towards transformation to a knowledge-intensive economy in Latvia', supported by a fellowship grant from the European Regional Development Fund's Growth and Employment Program for Latvia (1.1.1.2/VIAA/1/16/125).

design adds value. *I was curious how to witness it.*

Does design add value?
How does design add value?
Who perceives design's added value?

preface.
does design add value?

Design professionals say that ‘design adds value’, but no evidence-based indicators have shown this. The postdoctoral study ‘Identification system of design’s socio-economic impact towards transformation to a knowledge-intensive economy in Latvia’ is a global–local case study that aimed to overcome this gap by proposing indicators of design’s socio-economic impact based on perceived design value attributes.

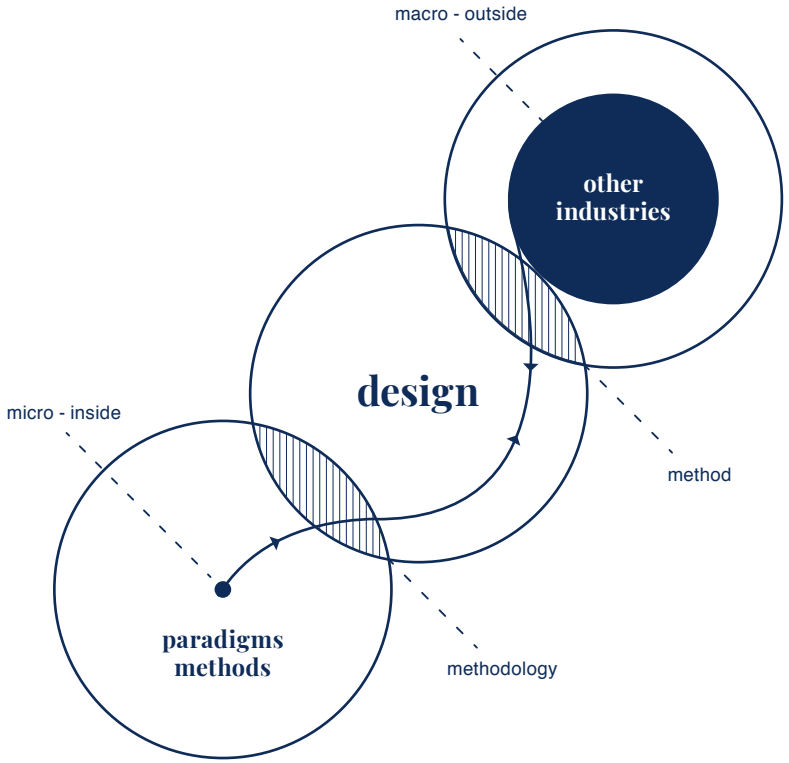
The objective of this research was to decode design’s value by identifying aspects perceived by users that may help businesses, government and society apply design more deliberately. The study clarifies how design adds value by recommending indicators of perceived value as a result of design’s socio-economic impact from the viewpoint of five generations[1] and four socio-economic class groups[2] of users. It characterises perceived design value attributes, evaluates and integrates them into perceived design value indicators and with the results, contributes to design theory and the development of design sociology.

Design in the 21st century is neither the subject nor object; rather, it is a method for defining why one or other solution or design intervention is needed, who the beneficiary will be and how to resolve the defined challenge for the most sustainable, socially responsible and innovative result. Design is presented in products, services, processes and systems and is integral to everyday life. As a human-centred activity, design impacts end results, and hence, is a key factor in creating happiness, satisfaction and wellbeing, in line with social interaction and an emotional attachment to certain products and services.

1 WMFC, ‘Generational Differences Chart’, accessed 26 August 2020, http://www.wmfc.org/uploads/GenerationalDifferencesChartUpdated2019.pdf

2 Mike Savage, Social Class in the 21st Century (London: Penguin Random House UK, 2015).

design, as a discipline among other disciplines is a method, whereas design itself is a complex system, thus explained as a methodology of paradigms and methods.



I propose defining design as a method of moving towards the happiness and satisfaction that are end results of a feeling or experience created by positive emotions and memories when products, services or systems are used in line with a social interaction, thus reflecting the other saying, ‘Design makes the world a better place’.

design is a method of identifying a real need and provides solutions that result in happiness and satisfaction.

Design is recognized as an approach to problem solving aimed at creating a better future or solution and providing satisfaction. It has an impact on not only technological and non-technological innovations and the economy but also on society at large. The need to measure the socio-economic impact of design and its role alongside other intangible assets in value creation has been identified by the European Commission.[3] The sayings 'good design always creates good value' and 'design adds value' make the statement that design impacts society and contributes to the economy, but they do not provide reliable and evidence-based tools that demonstrate that fact.[4] Design added value has been discussed from the professional designer's viewpoint and stated as a benefit to businesses as design maturity matrices,[5] but there's little evidence from the perspective of the design user or the value recipient.

Designers, companies and producers embody design value according to their own values, perceptions and/or professionality, and these factors make an impact on people's lifestyles. Design recipients perceive design value according to their individually subjective values, attitudes, senses or perceptions, as well as according to cultural narratives. Perception and cultural narrative guide people's actions around information that is translated from and created by objects and services.[6] While design action and the results thereof impact the economy as well as the environment and society, in the long run, they transform human lifestyles, habits, values and behaviours. In the material world, design as quality and the usage of products and services impact our sense of happiness and satisfaction; however, the value that design's products and services bring to society and the economy is not clear. Individual citizen expectations are important indicators of customer perception,[7] which manifests as perceived design value and satisfaction and/or happiness.

3 European Commission Staff, 'Implementing an Action Plan for Design-Driven Innovation' (Commission Staff working document SWD(2013) 380 final, 23 September 2013).

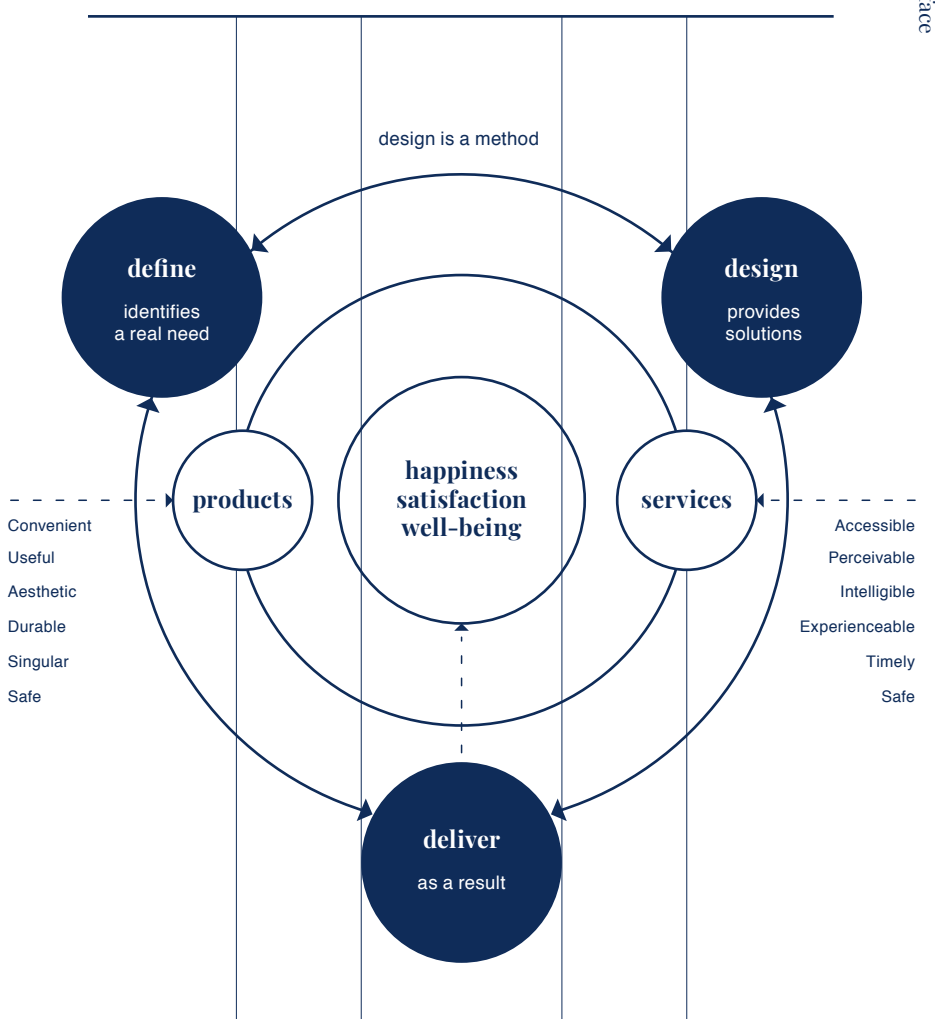
4 Michael Thomson and Tapio Koskinen, Design for Growth & Prosperity: Report and Recommendations of the European Design Leadership Board (DG Enterprise and Industry of the European Commission, 2012).

5 Aija Freimane, 'How to Witness Design', in Proceedings of the 20th International Conference on Engineering and Product Design Education (E&PDE 2018), eds. Erik Bohemia, Ahmed Kovacevic, Lyndon Buck, Peter Childs, Stephen Green, Ashley Hall, and Aran Dasan (The Design Society, Institution of Engineering Designers, 2018), 211–17.

6 Randolph Blake and Robert Sekuler, Perception (McGraw-Hill Publishing Company, 1990).

7 Debanjan Mitra and Scott Fay, 'Managing Service Expectations in Online Markets: A Signaling Theory of E-tailer Pricing and Empirical Tests', Journal of Retailing 86, no. 2 (2010): 184–99.

happy and satisfied societies and humans should be the purpose of design actions and their end results.



Correlation of the study's results

- design definition
- triple design process
- perceived value indicators of design's socio-economic impact

the triple design process is an analytically based iterative design approach in constantly changing contexts, markets or technologies as a response to the expansion of agile and lean tactics.

The triple design process takes design forwards from the slow reflection process in double diamond waterfall tactics[8] and design thinking to a knowledge-intensive design process.

8 British Design Council, 2005, www.designcouncil.org.uk

an analytically informed design-led process asks for *design mindfulness* where the user-centred approach is a core mindset while being in an absent present.[9]

9 Absent present denotes that people may be physically in one place while their social attention and communication are focused elsewhere (Lee Rainie and Barry Wellman, Networked: The New Social Operating System (Cambridge, MA: MIT Press, 2012).

The triple design process is performed in three phases—define, design and develop—and allows engagement in every phase by moving around and examining why an intervention is needed. The design phases might overlap and be performed in a noticeably short time, which may be the result at every phase.

define

In the define process, design research and data analyses of the local/global situation as context along with general user studies and analyses are performed to define the intervention niches with the most effective impact. The process addresses why and for whom to design and what problem or challenge is faced.

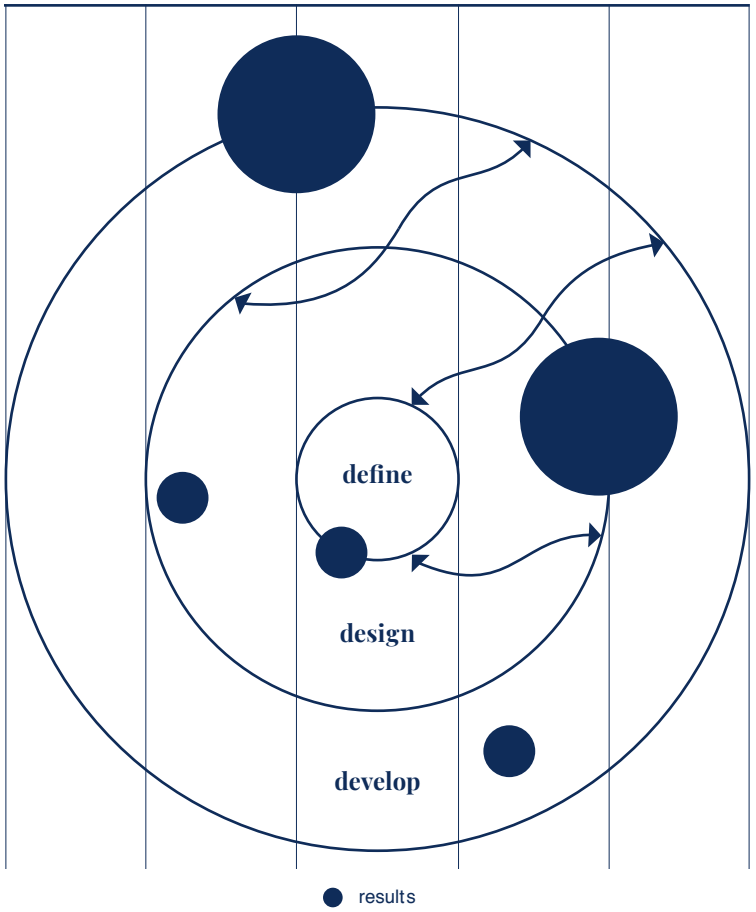
the design result in *a triple design process* may well be found in the *define* phase, thus shifting the emphasis on design as an end result to a role at the forefront.

design

The design process is an active, inventive, hands-on phase to iterate what and how and to work out possible solutions, combining ideas with the information acquired from the define phase. The result takes shapes as a forecast of future contexts through re-reflection, visualising, constructing, prototyping and testing methods.

develop

The develop process brings something into existence by addressing what, how and for whom the solution is designed. This phase deals with an implementation and re-reflection, elaboration and delivery of the design solution. According to agile tactics, develop embraces both the define and design processes.



A triple design process (presented at Design Principles & Practices conference in St. Petersburg, Russia, 1 March 2019).

the triple design process demonstrates an overlapping iterative approach and a fluctuating interdependency to address a defined need with respect to multi-solutions that may well be more than one end result.

design added value– perceived design value indicators code book

User (consumer) choices and beliefs are affected and perceptions are formed from the perceived value of design that corresponds to total customer values[10] as benefits and arise from personal perceived values through consumption, usage, experience and acquisition, as well as visual, perceptual and symbolic values.[11] Perceived design value indicators respond to the subjective value[12] as satisfaction with products and services through epistemic, emotional, social, conditional and functional values, thus giving focus to the saying that design adds value from the user's perspective.

Perceived design value indicators as design's added value were decoded by involving respondents as product/service end users.

people were asked to describe the product/service qualities that bring positive experiences, satisfaction and a sense of well-being and emotional attachment to the usability and aesthetic qualities of the product or service.

10 Philip Kotler and Joanne Scheff, Standing Room Only. Strategies for Marketing the Performing Arts (Cambridge, MA: Harvard Business School Press, 1997).

11 Marco Bevalo, Alex Gofman, and Howard Moskowitz, Premium by Design: How to Understand, Design and Market High End Products (Surrey, UK: Gower Publishing, 2011).

Perceived design value attributes demonstrate people's perceptions as seeing and feeling certain qualities of the products and services they use. Although they were not consistent, the perceived design value attributes were descriptive, involving a mixture of nouns and adjectives. To decode perceived design value indicators, perceived design value attributes were grouped according to their meaning, and one overall descriptive adjective was chosen for each group that would best describe and embody that meaning. The top five attribute groups were developed as perceived design value indicators as a result of the identification system of design's socio-economic impact.

Perceived design value indicators were analysed within each generation and socio-economic class group to find the differences and preferences of product and service qualities. However, perceived design value attributes describing an aesthetic quality were not coded separately but under one common indicator—aesthetic—because people describe aesthetic experiences based solely on individual perceptions, and the descriptions range from purely visual qualities to emotional and functional ones.

12 Patrick Bondy, The Internet Encyclopedia of Philosophy, Cornell University, ISSN 2161-0002, https://www.iep.utm.edu.

A perceived design value attribute that was the least valued perceived product and service design indicator by respondents was ‘product and service safety’. Later, during the perceived design value indicator validation phase,

> *‘safe’* as an indicator correlated to the external context and made an impact on the respondent’s everyday life.

Perceived design value attributes that were not included in the perceived design value indicators code book are as follows:

Quality

which was excluded because it is used to describe general qualities and perceptions of a product and service.

professional

service was left aside because the term is related to the training and education of the service provider.

Although both ‘quality’ and ‘professional’ are related to the perception of products and services, and as perceived design value attributes were named as the most important to the users, they should be regarded as general rather than specific and detailed indicators.

intuitive

which is assigned as a perceived design value attribute to both the indicators ‘convenient’ as a product indicator and ‘intelligible’ as a service indicator.

needed

was assigned to the indicator ‘useful’ because it refers to practical purposes.

safe

as a common product and service indicator was included in the perceived design value indicator code book and assigned to both products and services.

‘Safe’ was particularly valued as a product indicator among Generation Z and Baby Boomers, and the emergent service sector, traditional working class and new affluent workers’ socio-economic class groups. Generation Z valued ‘safe’ as a quality that brings positive experiences, satisfaction and a sense of well-being. For Baby Boomers, ‘safe’ is a quality that brings positive experiences, satisfaction and a sense of well-being and product usability.

‘Safe’ as a quality that that brings positive experiences, satisfaction and a sense of well-being was valued by the traditional working class and new affluent workers and as product usability by the emergent service sector and new affluent workers socio-economic class groups.

perceived design value indicators

products	services
convenient	accessible
useful	perceivable
aesthetic	intelligible
durable	experienceable
singular	timely
	safe

Perceived design value indicators are defined as follows:

Description

Describes the connotations of perceived design value indicators that are based on the meanings of certain adjectives and followed according to the definitions in the Oxford English Dictionary[13], Roget's Thesaurus of English Words & Phrases[14] and the Concise Oxford Dictionary.[15]

Attributes perceived by users

Describes people's perceived qualities held by the products and services they use as seeing and feeling design added value.

Design as paradigm

Refers to design as a methodology and overarching strategy and rationale of design described in paradigms (theories and principles) and methods, but among other industries as a method.

Design as method

Refers to design as a methodology—a set of design research and practice processes.

How to witness an indicator's impact

Tells how to verify the impact of an indicator easily and understandably.

13 Catherine Soanes, Oxford English Dictionary (Oxford University Press, 2002).

14 Betty Kirkpatrick, Roget's Thesaurus of English Words & Phrases (London: Penguin Books, 1998).

15 Judy Pearsall, Concise Oxford Dictionary (Oxford University Press, 1999).

products

convenient
useful
aesthetic
durable
singular

Indicator	**convenient**
Description	Refers to fitting well with a person's needs, activities and plans with little effort. A convenient element is workable, practicable, qualified, suitable, fitting, proper, well timed, fit for the purpose, adapted to, handy, effective, effectual, applicable. A convenient quality in the sense of being comfortable provides enjoyable physical comfort open to all; it is comprehensible, intelligible and facilitated, but it is also considerate in the sense of being careful not to harm or inconvenience others.
Attributes perceived by users	Comfortable, easily understandable, easy to use, handy, intuitive, requiring minimal actions, simple, thoughtful, universal, usable without help from others, well considered, well set.
How to witness	Test outside of a direct target group to include explicitly diverse marginal groups and to fit their convenience first in different situations, contexts and cultural narratives.

Design as	**paradigm**
	Design for happiness: An approach to design characterised by well-considered mutual interaction, communication, relationships, emotions and behaviours, to enhance social well-being and happiness.
	Universal design: Functional and visual principles and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability.
	Inclusive design: Product, service, spatial and digital design that addresses the needs of the widest possible range of users and consumers, including universal design principles.
	Hi-tech design: Inclusion of scientific and technological innovations. New vernacular design: Use of local traditions and materials in the product codesigning and innovation process.
	Experience design: Focus on the user experience and cultural context when designing products, processes, services, events and environments.
	Holistic design: A human-centred approach within a contextual system.
	method
	User-centred design: The needs, desires and conveniences of a product or service's end user are considered primary at each stage of design development.
	Design anthropology: To emphasise and lead the change as design intervention through ethnographic research and interdisciplinary solutions for the better life of humans.
	Co-design: A set of design methods that involve users in the design intervention to create a solution or result.
	Participatory design: Involves all stakeholders in the design process to ensure that all needs are met and are usable.
	Design thinking: Is the wisdom of life as empathic, human-centred creative thinking and action to create the best solution.
	Ergonomic: Psychological and physiological principles and processes of designing products, spaces and systems so that they fit to the people who will use them.

Indicator	**useful**
Description	Refers to being applicable to a practical purpose or in several ways. A useful element is utile, of use, helpful, of service, aiding, practical, applied, functional, multipurpose, of all work, practicable, available, serviceable, fit for use, usable, adaptable, employable, instrumental, working, operative, workable, pragmatic, qualified for the purpose, applicable, effective, effectual, at one's service, consumable, cooperative, well disposed, well intentioned, constructive, well meant, assistant, subsidiary, in aid of, contributory and subservient. It is practical and purposive, as well as working or operating, correlative, reciprocal, corresponding, efficient, executive, operational, acting, in action, in operation, in force, in play and used.
Attributes perceived by users	Easily, repeatedly and/or simply usable, functional, my wish is heard, understood, needed, practical, safe, usable, working.
How to witness	Observe and define the gap (need) that the product aims to fill in people's everyday lives. Ask people how they would solve the gap or provide the solution as a response to a need. Analyse quantitative and qualitative data and trends of diverse industries to understand what could be useful in the future.

Design as	**paradigm** User experience design: Supports user behaviour and action through usability and usefulness as an interaction with a product. Inclusive design: Product, service, spatial and digital design that addresses the needs of the widest possible range of users and consumers, including universal design principles. Universal design: Functional and visual principles, and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. Experience design: Focus on the user experience and cultural context in designing products, processes, services, events and environments. Design for interaction: Product and service act upon one another to produce a new effect and an efficient and delightful end user experience by enabling users to achieve their objectives in the best possible way. **method** User-centred design: The needs, desires and conveniences of the product or service end user are considered primary at each stage of design development. Design anthropology: To emphasise and to lead the change as design intervention through ethnographic research and interdisciplinary solutions for the better life of the humans. Design thinking: Is the wisdom of life as empathic, human-centred creative thinking and action to create the best solution. Co-design: A set of design methods that involve users in the design intervention to create a solution or result. Participatory design: Involves all stakeholders in the design process to ensure that all needs are met and are usable. Ergonomic: Psychological and physiological principles and processes of designing products, spaces and systems so that they fit to the people who use them.

Indicator	aesthetic
Description	Refers to being concerned with beauty or the appreciation of beauty, as well as having a pleasing appearance. An aesthetic quality is sensory, perceptual, beautiful, lovely, bright, radiant, comely, goodly, pretty, nice, good-looking, well-built, well set up, pleasing to the eye, lovely to behold, picturesque, scenic, ornamental, well laid out, artistic, harmonious, well grouped, well composed, cunning, well made, tasteful, shapely, well proportioned, personable, pleasurable, dignified, in good taste, elegant, refined, delicate, euphemistic, pure and artistic.
Attributes perceived by users	Appearance, aesthetic sense, attractive, beautiful, colourful, designed/stylish, elegant, eye-pleasing, minimalistic, tasteful, visually pleasant.
How to witness	Emphasise and reflect subjective values, behaviours, attitudes and cultural narratives.

Design as	paradigm	method
	Experience design: Focus on the user experience and cultural context in designing products, processes, services, events and environments. Design for emotion: Provokes positive emotions and guides towards emotional attachment to products and services.	Visual and sensual nation-specific cultural narrative.

Indicator	**durable**
Description	Refers to being hard wearing; able to withstand wear, pressure, or damage; or not for immediate consumption and, thus, able to be kept for a long time. A durable element is lasting, abiding, age-long, lifelong, long time, longstanding, of long duration, long term, long service, perdurable, enduring, longaeval, longlived, perpetual, permanent, unchangeable, persistent, long-lasting, constant, continual, continuous, unchanging, continuing, unfailing, sustained, maintained, changeless, unaltered and inalterable.
Attributes perceived by users	Easily recyclable, ecological, long-lasting, maintainable, high-quality material, reparable, reusable, socially and environmentally friendly, unchanging.
How to witness	Choose materiality of the product for long-lasting usability, from an arm's length perspective. Minimise material waste in the product's define, design and deliver process. Think of the 3R principle in product design, usage and end-of-life process. Implement convenience, usefulness and performance quality in the product development process.

Design as	**paradigm** Circular design: Creates sustainable, resilient, long-lasting value in the circular economy by redesigning the world around humanity. Holistic design: A human-centred approach within a contextual system. Cradle-to-cradle: An approach to designing products and systems where materials are viewed as nutrients circulating in healthy, safe organisms. 3R (reuse, recycle, reduce): Designed to be performed after commercial end-oflife. Open-ended design: A solution that is able to be altered according to a changing context; unrestricted, having no limits or fixed result **method** Sustainable design: Use of renewable resources to eliminate negative environmental impact. Product life cycle assessment: Complete assessment of materials in their extraction, transport, processing, refining, manufacturing, maintenance, use, disposal, reuse and recycle stages. Biomimicry: Redesigning of industrial systems to enable the constant reuse of materials in continuous closed cycles.

Indicator	**singular**
Description	As an individual volition, refers to one person or thing that is remarkable, exceptionally good or great. Singular is remarkable, noticeable, outstanding, extraordinary, exceptional, uncommon, unusual, uncustomary, not plural, sole, single, unique, only and one and only.
Attributes perceived by users	Personally needed, related to the person, serving my needs, invoking positive emotions/memories, invoking story of owning, suiting my personal system, in my time, creative, fetching, funny, interesting, popular.
How to witness	Emphasise and reflect subjective values, behaviours, attitudes and cultural narratives. Reflect product convenience, usefulness, durability, aesthetic and safety qualities.

Design as	**paradigm**
	Experience design: A focus on the user experience and cultural context in designing products, processes, services, events and environments. User experience design: Supports user behaviour and action through usability and usefulness as an interaction with a product. Design for interaction: Product and service act upon one another to produce a new effect and an efficient and delightful end user experience by enabling users to achieve their objectives in the best possible way. Design for happiness: An approach to designing, well-considered, mutual interaction, communication, relationships, emotions and behaviours to enhance social well-being and happiness. Design for emotion: Provokes positive emotions and guides towards emotional attachment to products and services.
	method User-centred design: The needs, desires and conveniences of the product or service end user are considered primary at each stage of design development. Design anthropology: To emphasise and lead the change as design intervention through ethnographic research and interdisciplinary solutions for the better life of humans. Design thinking: Is the wisdom of life as empathic, human-centred creative thinking and action to create the best solution.

services

accessible
perceivable
intelligible
experienceable
timely

Indicator	**accessible**
Description	Refers to a service's physical, financial and emotional ability to be accessed,reached or used and easily understood, enjoyed or appreciated. Accessible is approachable, within easy reach, attainable, possible, available, obtainable, on the spot, wayside, nearby, welcoming, inviting, attracting, not far, inshore, hard by, near at hand, close at hand, at hand, close to and contiguous. This indicator is relevant to service, space, time and affordability, and it refers to physical, financial and emotional accessibility.
Attributes perceived by users	Comfortable, convenient location or premises, inclusive, affordable, appropriate, acceptable, adequate, receivable, universal.
How to witness	Test outside of the direct target group to include explicitly diverse marginal groups to fit their convenience first in different situations, contexts and cultural narratives. Think of service acquisition and usage as affordability and accessibility.

Design as	**paradigm** Universal design: Functional and visual principles and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. Inclusive design: Product, service, spatial and digital design that addresses the needs of the widest possible range of users and consumers, includes universal design principles. Holistic design: A human-centred approach within a contextual system. Process design: Brings activities and resources in consequent system. Design for happiness: An approach to designing, well-considered, mutual interaction, communication, relationships, emotions and behaviours to enhance social well-being and happiness. **method** User-centred design: The needs, desires and conveniences of the product or service end user are considered primary at each stage of design development. Co-design: A set of design methods that involve users in the design intervention to create a solution or result. Participatory design: Involves all stakeholders in the design process to ensure that all needs are met and are usable. Ergonomic: Psychological and physiological principles and the process of designing products, spaces and systems so that they fit to the people who use them.

Indicator	**perceivable**
Description	Refers to awareness or consciousness of a delivered external interpersonal emotion or service that is promised or expected as a received experience. Perceivable is visible, see-able, viewable, perceptible, discernible, observable, detectable, noticeable, recognisable, unmistakable and tangible. As external interpersonal emotion, what is 'perceivable' refers to a delivered experiential value to bring or hand over to the person who is to receive it, providing something promised or expected.
Attributes perceived by users	Positive attitude, polite, pleasant atmosphere, careful, communication, cordial, correct, friendly, honest, human-oriented, client-oriented offers, user-centred, kind, makes life easier, nice environment, references, support service, trendy, unobtrusive.
How to witness	Design courtesy and civility in service delivery process to address subjective values, behaviours, attitudes and cultural narratives. Explicitly address visual and sensual nation-specific cultural narrative, intelligibility, accessibility and timeliness. Enhance professionality and quality in service triple design process.

Design as	**paradigm**
	Experience design: Focus on the user experience and cultural context in designing products, processes, services, events and environments.
	User experience design: Supports user behaviour and action through usability and usefulness as an interaction with a product.
	Design for interaction: Product or service act upon one another to produce a new effect and produces an efficient and delightful end user experience by enabling users to achieve their objectives in the best possible way.
	Interactive design: A digital activity to design behaviours and experience interactions between people, environment, services and systems.
	Design for emotion: Provokes positive emotions and guides towards emotional attachment to products and services.
	System design: Brings interdisciplinary processes in a holistic context.
	Process design: Brings activities and resources in consequent system.
	Service design: An activity that plans and organises behavioural patterns between service provider and user interaction.
	method
	User-centred design: The needs, desires and conveniences of the product or service end user are considered primary at each stage of design development.
	Design anthropology: To emphasise and lead the change as design intervention through ethnographic research and interdisciplinary solutions for the better life of humans.
	Design thinking: Is the wisdom of life as empathic, human-centred creative thinking and action to create the best solution.
	Ergonomic: Psychological and physiological principles and process of designing products, spaces and systems so that they fit to the people who use them.

Indicator	**intelligible**
Description	Refers to a service that is understandable and self-explanatory. Intelligible is lucid, not wandering, clear-headed, undisturbed, balanced, well balanced, common-sense, fully conscious, understandable, penetrable, realisable, comprehensible, apprehensible, coherent, explicable, unambiguous, unequivocal, meaningful, certain, precise, well spoken, straightforward, simple, obvious, self-explanatory, easy to understand, easy to grasp, adapted to the understanding, explained, simplified, popularised, popular, perspicuous, readable, legible, decipherable, well written, crystal clear, expressive, telling, meaningful, informative and descriptive.
Attributes perceived by users	Convenient to use, acquire, approach; easily understandable; intuitive; minimalistic; non-burdensome; organised; performing function/promise; adhering to rules; simple, with few steps; thoughtful; usable; well considered.
How to witness	Think in three-step process to have a clear and unambiguous plan of service operation. Observe and define the gap (need) that the product aims to fill in people's everyday lives. Ask people how they would solve the gap or provide the solution as a response to a need. Explicitly address visual and sensual nation-specific cultural narrative, perceivability, accessibility and timeliness.

Design as	**paradigm**
	User experience design: Supports user behaviour and action through usability and usefulness as an interaction with a product. Design for interaction: Product or service act upon one another to produce a new effect and produces an efficient and delightful end user experience by enabling users to achieve their objectives in the best possible way. Interactive design: A digital activity to design behaviours and experience interactions between people, environment, services and systems. System design: Brings interdisciplinary processes in a holistic context. Process design: Brings activities and resources in consequent system. Service design: An activity that plans and organises behavioural patterns between service provider and user interaction.. Inclusive design: Product, service, spatial and digital design that addresses the needs of the widest possible range of users and consumers, includes universal design principles. Hi-tech design: Inclusion of scientific and technological innovations.
	method
	User-centred design: The needs, desires and conveniences of the product or service end user are considered primary at each stage of design development. Design anthropology: To emphasise and lead the change as design intervention through ethnographic research and interdisciplinary solutions for the better life of humans. Co-design: A set of design methods that involve users in the design intervention to create a solution or result. Participatory design: Involves all stakeholders in the design process to ensure that all needs are met and are usable. Design thinking: Is the wisdom of life as empathic, human-centred creative thinking and action to create the best solution. Ergonomic: Psychological and physiological principles and the process of designing products, spaces and systems so that they fit to the people who use them.

Indicator	**experienceable**
Description	Refers to a service that is understandable and self-explanatory. Intelligible is lucid, not wandering, clear-headed, undisturbed, balanced, well balanced, common-sense, fully conscious, understandable, penetrable, realisable, comprehensible, apprehensible, coherent, explicable, unambiguous, unequivocal, meaningful, certain, precise, well spoken, straightforward, simple, obvious, self-explanatory, easy to understand, easy to grasp, adapted to the understanding, explained, simplified, popularised, popular, perspicuous, readable, legible, decipherable, well written, crystal clear, expressive, telling, meaningful, informative and descriptive.
Attributes perceived by users	Creating memories, enjoyable, experienced, fulfils my needs, fulfils promise, catchy, pleasant emotions, positive atmosphere, funny, interesting, moody, needed, original, personal, pleasant, popular, senses, trustful, unique, useful.and well-practiced.
How to witness	Emphasise and reflect subjective values, behaviours, attitudes and cultural narratives. Reflect service accessibility, intelligibility, perceivability, timeliness and safety qualities.

Design as	**paradigm** Experience design: Focus on the user experience and cultural context in designing products, processes, services, events and environments. User experience design: Supports user behaviour and action through usability and usefulness as an interaction with a product. Design for interaction: Product or service act upon one another to produce a new effect and produces an efficient and delightful end user experience by enabling users to achieve their objectives in the best possible way. Interactive design: A digital activity to design behaviours and experience interactions between people, environment, services and systems. Design for emotion: Provokes positive emotions and guides towards emotional attachment to products and services. Service design: An activity that plans and organises behavioural patterns between service provider and user interaction. Design for happiness: An approach to designing, well-considered, mutual interaction, communication, relationships, emotions and behaviours to enhance social well-being and happiness. **method** User-centred design: The needs, desires and conveniences of the product or service end user are considered primary at each stage of design development. Design anthropology: To emphasise and lead the change as design intervention through ethnographic research and interdisciplinary solutions for the better life of humans. Design thinking: Is the wisdom of life as empathic, human-centred creative thinking and action to create the best solution. Co-design: A set of design methods that involve users in the design intervention to create a solution or result. Participatory design: Involves all stakeholders in the design process to ensure that all needs are met and are usable.

Indicator	**timely**
Description	Refers to being done or occurring at a favourable or appropriate time. Timely is within the time limit, in time, on time, to the minute, on the dot, in a manner that is punctual, apt, admissible, pertinent, on point, well aimed, relevant, to the purpose, early, in the small hours, prior, in good time, prompt, immediate, speedy, swift, fast, quick, rapid and without delay.
Attributes perceived by users	On time, predictable, prompt, responsive, time saving, value of spent time, binding, economical, effective.
How to witness	Plan appropriate and minimal phases to experience the service. Enhance, emphasise and reflect subjective and cultural narratives, values, behaviours and attitudes. Design to address simplicity in the service delivery process.

Design as	**paradigm** System design: Brings interdisciplinary processes in a holistic context. Process design: Brings activities and resources in consequent system. Service design: An activity that plans and organises behavioural patterns between service provider and user interaction. Interactive design: A digital activity to design behaviours and experience interactions between people, environment, services and systems. Design for interaction: Product or service act upon one another to produce a new effect and produces an efficient and delightful end user experience by enabling users to achieve their objectives in the best possible way. Inclusive design: Product, service, spatial and digital design that addresses the needs of the widest possible range of users and consumers, includes universal design principles. Experience design: Focus on the user experience and cultural context in designing products, processes, services, events and environments. User experience design: Supports user behaviour and action through usability and usefulness as an interaction with a product. **method** User-centred design: The needs, desires and conveniences of the product or service end user are considered primary at each stage of design development. Design thinking: Is the wisdom of life as empathic, human-centred creative thinking and action to create the best solution.

products services

safe

Indicator	**safe**
Description	Refers to being protected from or not exposed to danger or risk, not likely to be harmed or injured.
Attributes perceived by users	Safe
How to witness	Think at least three steps ahead or predict and test as many negative scenarios as possible in case of ‘what might happen if’ scenarios. Reflects all safety rules and regulations in product and/or service development process.

Design as	**paradigm** User experience design: Supports user behaviour and action through usability and usefulness as an interaction with a product. Universal design: Functional and visual principles and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability. Inclusive design: Product, service, spatial and digital design that addresses the needs of the widest possible range of users and consumers, includes universal design principles. Hi-tech design: Inclusion of scientific and technological innovations. Design for interaction: Product or service act upon one another to produce a new effect and produces an efficient and delightful end user experience by enabling users to achieve their objectives in the best possible way. **method** User-centred design: The needs, desires and conveniences of the product or service end user are considered primary at each stage of design development. Co-design: A set of design methods that involve users in the design intervention to create a solution or result. Participatory design: Involves all stakeholders in design process to ensure that all needs are met and are usable. Ergonomic: Psychological and physiological principles and process of designing products, spaces and systems so that they fit to the people who use them.

Perceived value indicators for design are convergent despite user segmentation, a variety of analysed subjects and divergent decoding of product or service values.

A summary of perceived design value indicators for products and services was constructed to find any differences of the indicator ranking and preferences when users were segmented by generation and socio-economic class groups. The most valued indicators were grouped according to the frequency (mentioned three times, twice or only once) among generations and socio-economic class groups. It demonstrates a minor difference among preferences of perceived design value indicators. There is a minor difference of ranking in perceived design value indicators among generations. The spectrum of indicators is more consistent among socio-economic class groups.

Is there a need to apply user segmentation as a product design target audience if not much difference in the perceived added value of design?

perceived design value indicators for ***products*** among generations and socio-economic class groups

Among the generations, the most esteemed perceived design value product indicators were convenience and usefulness. As a top indicator that describes a positive experience, satisfaction and sense of well-being and emotional attachment and usability of products, aesthetic was valued by Generation Z and Generation X. Aesthetic is the most valued indicator among all of the socio-economic class groups except the emergent service sector. Convenient and useful were named as top indicators that describe a positive experience, satisfaction and sense of well-being and emotional attachment and usability of products by all generations.

Also, as product indicators, perceived design value service indicators appear to describe product design value as the third most important common indicators for all generations. In particular, experienceability creates an emotional attachment to products, whereas accessibility and perceivability are perceived design value indicators that characterise product usability.

‘Accessible’ as a service indicator is valued as product quality that brings positive experiences, satisfaction and a sense of well-being to Millennials and Generation X. ‘Experienceable’ as a service indicator is valued as product quality that creates emotional attachment for Millennials, but ‘perceivable’ as a usability indicator is valued by Generation Z.

Generations

generation z	millennials, or generation y	generation x
2001<	1981 - 2000	1965 - 1980
Convenient Aesthetic	Useful	Convenient Useful Aesthetic
Useful Singular	Convenient Accessible Durable	Durable
Durable Safe Perceivable	Singular Safe Experienceable	Singular Accessible

baby boomers	silent generation
1946 - 1964	<1945
Convenient Useful	Convenient Useful
Durable Safe	Aesthetic Singular
Singular Experienceable	Durable Accessible

Socioeconomic class groups

precariat	emergent service sector
Useful Aesthetic	Convenient
Convenient Durable Singular	Useful Aesthetic Durable
	Singular Safe

traditional working class	new affluent workers
Useful Aesthetic	Convenient Aesthetic
Convenient Durable	Useful Safe
Singular Safe	Singular

perceived design value indicators for ***services*** among generations and socio-economic class groups

Among the generations, the most valued service indicators were accessibility and perceivability. Although experienceability was mentioned as a top indicator that describes a positive experience, satisfaction and sense of well-being and emotional attachment and usability of products, it was mostly valued by Generation Z and the Silent Generation. Intelligibility was particularly valued by Generation Z. Accessibility was the most valued indicator for all of the socio-economic class groups except the emergent service sector. Perceivability was highlighted by the precariat and emergent service sectors, intelligibility by the emergent service sector and new affluent workers and timeliness by the precariat.

The next most common perceived design added value indicators by the generations except Generation Z were experienceability, perceivability and timeliness. Experienceability was the second most valued perceived design value indicator of services by all socio-economic classes. Perceivability and timeliness as perceived design value indicators of services were named twice by traditional working class and new affluent workers. Timeliness as a design value-added indicator was important to all generations. Safety as a service indicator was valued only by the emergent service sector.

In addition to service indicators, usefulness as a perceived design value product indicator appears to describe service design value as the third most important common indicator for Millennials, Generation X and Baby Boomers, particularly to characterise service usability.

‘Singular’ as a product indicator is valued as service quality that creates emotional attachment for Generation Z, but ‘useful’ as a usability indicator is valued by Millennials and Generation X.

Generations

generation z	millennials, or generation y	generation x
2001<	1981 - 2000	1965 - 1980
Intelligible Perceivable Experienceable	Intelligible Accessible	Accessible Perceivable
Accessible	Perceivable Experienceable	Intelligible Experienceable Timely
Timely Singular	Timely Useful	Useful

baby boomers	silent generation
1946 - 1964	<1945
Accessible Perceivable	Accessible Experienceable
Experienceable	Intelligible Perceivable Timely
Intelligible Timely Useful	

Socioeconomic class groups

precariat	emergent service sector
Accessible Perceivable Timely	Intelligible Perceivable
Intelligible Experienceable	Accessible Experienceable
	Timely Safe

traditional working class	new affluent workers
Accessible	Intelligible Accessible
Intelligible Perceivable Experienceable Timely	Perceivable Experienceable Timely
Singular	Singular

external context matters and impacts the importance of design value indicators.

The global pandemic brought in an external context that favoured the validation of perceived design value indicators under extreme conditional circumstances. Validation of perceived design indicators as a case study during the global pandemic demonstrated the perceived design value indicators' relevance to and dependence on external contexts, along with the sociocultural, political and economic impacts.

The greatest significance of perceived design value importance under an extreme external context was demonstrated with the indicator 'safe'. From the least valued, it became significantly valued in both products and services.

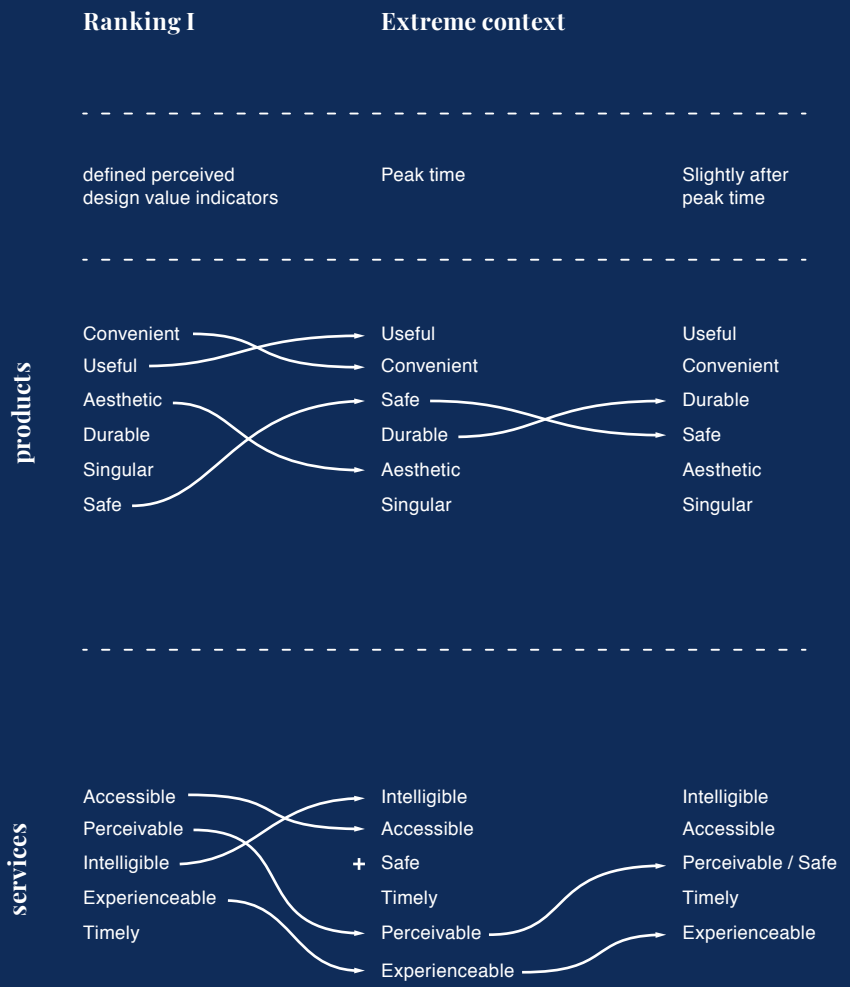
products

'Convenient' and 'useful' as perceived design product value indicators were rated as top priorities both before and during the pandemic as an extreme external condition. In the extreme external context, 'aesthetic' as a perceived design product value becomes less important then product safety. Qualities of product durability are more important in an extreme context than in ordinary everyday life.

services

'Intelligible' as a perceived design service value indicator became more important in the extreme context than before it, whereas 'aesthetic', 'perceivable' and experienceable' lost valued meaning during extreme external conditions.

Significance of perceived design value indicators under an extreme external context



For measuring the perceived design value indicators' validation during a slight exit period of an extreme external context, participants included 70 respondents (34% of primary respondents) spanning three generations—Generation Z (39 respondents), Millennials (9 respondents) and Generation X (22 respondents). Particular emphasis was put on a Generation Z, as they are the users who step into the market economy. Respondents were both female (48 respondents) and male (22 respondents).

'Safe' as a perceived design value indicator played the greatest role in people's everyday lives with an extreme external context. From being the least valued, and only by Generation Z, in normal life, it became significantly valued with both products and services by all of the surveyed generations.

products

'Convenient' and 'useful' as perceived design product value indicators were ranked as most important by all generations both before and during the pandemic, representing extreme external conditions.

'Aesthetic' as a product value did not lose importance for Generation Z and Generation X in an extreme context.

'Durable' products were more valued under extreme external circumstances by Generation Z and Millennials as compared with Generation X.

services

'Intelligible' as a perceived design service value indicator shares the top priority in an extreme context by all generations.

'Accessible' services became more valued by Generation Z and Generation X in an extreme context.

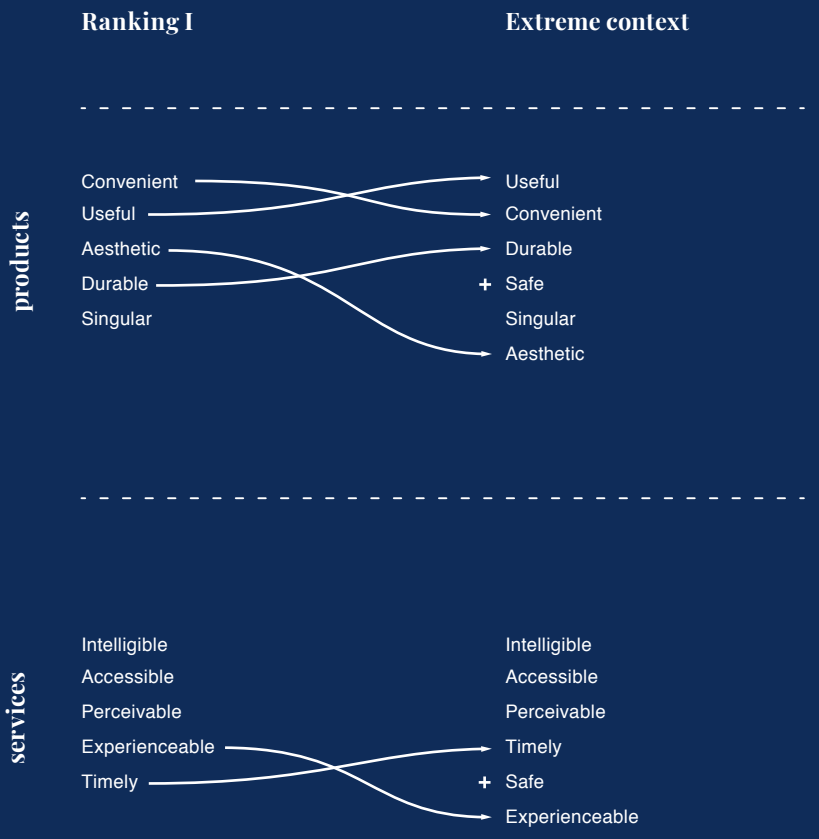
'Perceivable' was the third most important value for Generation Z and Millennials both before and during the pandemic as an extreme external condition.

generation Z

2000 <

millennials

1981–2000



generation X

1965–1980

Subjective added value of design correlates to the subjective theory of value and subjective values as total customer benefits, articulating the added value of design.

Design is directly linked to the subjective theory of value, and thus opens up a discussion of consistent and objective measurement of design's value, perception and impact. To measure design, there must be a fixed and objectively determined unit against which to compare outcomes. Although the subjective theory of value argues that it is not possible to measure happiness between different people or changes in the happiness of any one person, the measurement of design value is arguable in the context of a qualitative valuation strategy adapted from the World Happiness Report[16] as a measurement of subjective well-being.[17] Decoded perceived design value indicators are in line with the methodology of the Happiness Index[18] by asking respondents as users to name subjective design added value in their everyday lives. Hence, it can be argued that design's enhancement of happiness and satisfaction can be measured under conditional objective and subjective contexts. Decoded perceived design value indicators form an interdependent circle, clarifying the term 'design adds value' towards happiness and satisfaction of humans as an end result of the design.

16 Sustainable Development Solutions Network, 'The World Happiness Report', accessed August 10, 2020, https://worldhappiness.report/.

17 Ed Diener, 'Guidelines for National Indicators of Subjective Well-Being and Ill-Being', Applied Research in Quality of Life 1 (2006): 151–57.

18 New Economics Foundation (NEF), 'Happy Planet Index', accessed August 10, 2020, http://happyplanetindex.org/.

Perceived design value indicators reveal the assumption that 'design adds value' and correspond to the conditional subjective values and the external context, adding conditional objective value to the subjective value chain.

Validation of perceived design value indicators during the global pandemic gave correlation to evidence-based conditional objective and subjective value.

Total customer value can be analysed as product—what the consumer receives by using the product or service—and service—the experience of using the product or service and its benefits, qualities and values.

Perceived design value indicators are categorised in accordance with the subjective value as satisfaction with products and services through epistemic, emotional, social, conditional and functional values. Products and services can create memorabilia—personally perceived value as a product, service, human or image benefit.[19] Subjective value defined as satisfaction with product, service, human and image benefits is directly linked to the perceived design value, whereas objective value is linked with image benefit for the company's or its own sake and does not say anything about subjective (perceived) value; rather, it relates to delivered value.

Epistemic, emotional, social, conditional and functional values form perceptions and affect consumer choices and beliefs[20]; thus, they are related to the total customer value chain. Customer perceived value as the total customer benefit is widely regarded as a key source of competitive advantage in the 21st century.

19 Kotler and Scheff, Standing Room Only.

20 Jagdish N. Sheth, Bruce Newman, and Barbara L. Gross, 'Why We Buy What We Buy: A Theory of Consumption Values', Journal of Business Research 22, no. 2 (1991): 159–70

Perceived design value indicators can help businesses determine their value proposition as customer perceived value and total customer benefit.

perceived design value product indicator	Emotional values	Social values	Conditional values	Epistemic values	Functional values
Convenient	●		●		
Useful			●		●
Aesthetic	●	●	●		
Durable		●	●	●	●
Singular	●	●	●		
perceived design value service indicators					
Accessible			●		●
Perceivable	●	●	●		
Intelligible			●	●	●
Experienceable	●	●	●		
Timely			●		●
common perceived design value indicator					
Safe	●	●	●		●

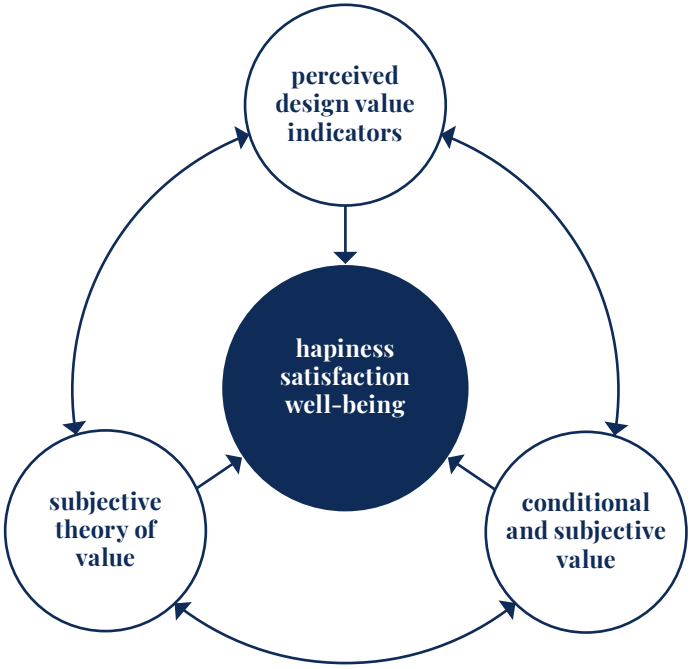
Design in an end form of goods, either product or service, is remarkably conditional and subjectively emotional, social and functional, based on the diamond–water paradox as the ‘value in use’ and ‘value in exchange’.[21]

User perceptions as perceived design value indicators are formed by the subjective values and clarify the term ‘design adds value’ from the user perspective.

Decoded perceived design value indicators embody values defined by all generations, representing four lower socio-economic class groups.

21 Adam Smith, Wealth of Nations (New York: Cosimo Classics, 2007), 35, https://books.google.lv/books?id=A5moyserOFIC&printsec=frontcover&source=gbs_atb&redir_esc=y#v=onepage&q&f=false.

Design adds value merely conditionally and subjectively.



Design in correlation with the subjective theory of value.

Self-assessment design maturity matrix

Evidence-based perceived design value indicators decode ‘design adds value’, but the self-assessment design maturity matrix reflects the question of how. The developed self-assessment design maturity matrix helps to formulate and find answers to the design why, how and what questions, bringing up design action towards defined results to the define stage of the triple design process. The self-assessment design maturity matrix empowers individuals to understand that design impacts the intervention challenge and to target opportunities that will fulfil and satisfy user needs and create experiences.

The self-assessment design maturity matrix of product/service development attempts to address gaps and unanswered questions from online self-assessment design valuation tools[22], analysed from a theoretical and practical perspective. Because design adds value conditionally and subjectively, in the self-assessment design maturity matrix, questions are included that help with understanding and valuing design’s impact but that are not covered and analysed in design valuation tools for entrepreneurs. Thus, the developed self-assessment design maturity matrix, in line with the perceived design value indicators, can help businesses to apply design consciously and mindfully to determine the value proposition as customer perceived value and total customer benefit based on external data analysis, and thus, conditional objective values.

The self-assessment design maturity matrix is a proposed tool to witness design as a methodology that, as a result of the consumer experiencing a product or service, creates satisfaction and happiness. Values are based on consumers’ experiences[23] rather than embedded in goods and services. Hence, companies can use design as a functional value and emotional value proposition,[24] but ‘design added value’ is only experienced and felt by users, embodied as perceived design value indicators. The self-assessment design maturity matrix responds to the objective value as a benefit for the company by using design.

The self-assessment design maturity matrix includes subjects that define conditional and subjective values. It asks users to evaluate the use of design in a company as a methodology that identifies a real need, and as a result, it provides solutions for happiness and satisfaction through the following elements:

- Analytically based external data analysis, responding to conditional objective values and analytically informed design-led systemic thinking.
- User analysis, which involves defining emotionally and socially conditional subjective values.
- Product/service analysis, representing the analysis of functionally conditional subjective values.
- Impact analysis, involving emotionally, socially and functionally conditional subjective and objective value analyses with a focus on product/service durability.
- Perceived design value indicators.
- Analysis of use of design in a company.

By addressing these product/service design development aspects, design is used as a methodology and analytical process for identifying why a design intervention is needed, who the beneficiary is and how to challenge a defined need or problem.

22 Alja Freimane, ‘Identification System of Design Socioeconomic Impact Towards Transformation of Knowledge-Intensive Economy in Latvia’ (postdoctoral research, Art Academy of Latvia, 2020).

23 Tor Wallin Andreassen, Per Kristensson, Line Lervik-Olsen, A. Parasurman, Janet McColl-Kenedy, Bo Edvardsson, and Maria Colurcio, ‘Linking Service Design to Value Creation and Service Research’, Journal of Service Management 27, no. 1 (2016): 21-29.

24 Sara Sandström, Bo Edvardsson, Per Kristensson, and Peter Magnusson, ‘Value in Use Through Service Experience’, Managing Service Quality: An International Journal 18, no. 2 (2008): 112-26.

The results of the self-assessment design maturity matrix are described in three stages on the results checklist. Each stage—specifically, design aware, design relevant and design weak—help to understand and self-evaluate how the company is applying design as a methodology in the product/service development process. Each stage provides characteristics of what was evaluated and gives a short list of recommendations. Characteristics unlock six sets of issues that are incorporated in the self-assessment design maturity matrix and need to be addressed, which are as follows:

- Analytically based external data analysis – analysis of the global context and challenges.
- User analysis – use of diverse user-centred design, design anthropology and design thinking research methods.
- Product/service analysis – inclusiveness, functionality, ergonomic, usability and testing of products/services.
- Impact analysis – incorporation of sustainable production and consumption, product/service longevity and responsibility.
- Perceived design value indicators – conditionally subjective satisfaction of users.
- Use of design in company – assessment of design's inclusion at the company's executive level.

Checkpoints of the self-assessment design maturity matrix and stages demonstrate design excellence, design progress and design opportunity. Relevance of the points were calculated from the maximum at the design aware stage to the minimum at the design relevance stage, reflecting the proposed design maturity stages.

To complete a self-evaluation of the use of design in the matrix, think critically and honestly when choosing the appropriate answer, add up the points and then read the recommendations at the end of the checklist for the results.

the self-assessment design maturity matrix

product/service development

	Yes (2 points)	In process (1 point)	No (0 points)
analytically based external data analysis: conditional objective values			
Have you analysed local/global statistics, data and trends?			
Have you performed market research and an exportability analysis?			
Have you analysed culture-specific locally based national divergences?			
user analysis: emotionally and socially conditional subjective values			
Have you analysed user behaviour as ethnographic research?			
Have you addressed a sociocultural analysis of the end user/partner?			
Have you analysed whether the selected solution leads to the best experience for the end user/partner?			
Does the solution address the unarticulated need of the end user/partner?			

	Yes (2 points)	In process (1 point)	No (0 points)
product/service analysis: functionally conditional subjective values			
Have you addressed universal design principles in the product/service design process?			
Have you considered task success and errors of the product/service?			
Have you considered alternatives for the best production process for the problem/solution?			
Have you involved user testing and customer feedback methods in the define, design and deliver process?			
impact analysis: emotionally, socially and functionally conditional subjective and objective values			
Have you minimised the consumption of resources in the design process?			
Have you addressed product longevity?			
Have you measured product/service ecological footprint?			
Have you calculated the product price and value as impacts of sustainable consumption and production?			
perceived design value indicators			
Do you address customer satisfaction as a quality management system?			
Have you analysed and varied the significance of perceived design value indicators?			

To complete a self-evaluation of the use of design in the matrix, think critically and honestly when choosing the appropriate answer, add up the points and then read the recommendations at the end of the checklist for the results.

	Yes (1 point)	No (0 points)
use of design in company		
Design functionality and aesthetics in product/service development are performed by anyone in the company		
Design as styling and form-giving and graphic design in product/service development are performed by a professional designer or any other professiona		
Design, redesign or adaptation of existing product/service is performed by a professional designer or any other professional		
Design solution is driven by the problem and the users and requires the involvement of a wide variety of skills and capacities—process and materials technicians, marketing experts and administrative staff		
The design is represented in the company's owner/management daily activities on a strategic level to develop the business concept		

checklist of self-assessment design maturity matrix results

29–38 points—design aware

You are conscious of design as a methodology and practice design either as a strategy or innovation to address end user needs and global challenges. You recognise the importance of design research and understand the impact of local or global context and user behaviour to deliver the best solution. You are aware of the user/human-centred approach and sustainability or circularity in product or service development.

Characteristics

–Global context and challenges are analysed
– Diverse user-centred design research methods are used
– Inclusiveness and functionality are addressed product/service development; products are tested
– Sustainability, responsibility, use of resources and product/service longevity are addressed
– User emotional and social satisfaction as design added value is understood
– Design is addressed at the company's strategic level

Recommendations

– Continue the analysis of external context on design challenge
– Continue the use of design research, practice and user-centred methods
– Continue to explore design as a define, design, develop process

18–28 points—design relevant

You are aware of design's impact but there is still room for design excellence in the product/service development process and within your company. Global challenges, end user needs, product/service functionality and sustainability are narrowly analysed and addressed. It is a challenge to apply design for the benefit of your company.

Characteristics

– Global context as an external impact on the product/service development process needs to be analysed
– End user analysis as a user-centred approach should be more consciously present in product/service development
– Product/service longevity, inclusiveness and the responsibility of sustainable consumption and production need to be addressed constantly.

Characteristics

– Awareness of sustainability and responsibility, product/service longevity and inclusiveness should be enhanced
– Aspects of user experience as design added value need to be addressed properly
– Design is addressed at the company's operational level

Recommendations

– Increase awareness of the impact of global context
– Raise competences and awareness of product/service user aspects and methods in the design process
– Take into consideration addressing sustainable production and consumption, as well as user experience
– Design competences should be presented at the company's strategic leve

17 points or less—design weak

Design is presented weakly in the product/service development process and within your company. Design is perceived as style and function. A human/user-centred approach, sustainable consumption and production principles play little or no role in the company. It is recommended to discover design as a methodology for developing your company.

Characteristics

– Weak design is evident in the company
– Human/user-centred approach plays no role in the company
– Products/services do not differ from those of competitors
– Product/service longevity, inclusiveness and the responsibility for sustainable consumption and production need to be addressed constantly
– Design process is not explored at the company

Recommendations

– Discover design as a methodology for developing your company
– General understanding and practice of design professional skills are needed
– Design-oriented analytically informed mindset and practice need to be applied

more to follow – conclusions

Design adds value merely conditionally and subjectively and correlates to the subjective theory of value and subjective values as total customer benefits, articulating design added value. Perceived design value indicators are convergent despite user segmentation and a variety of analysed subjects but divergent decoding of product or service values. Not only extreme external context matters and impacts the importance of design value indicators, but belonging to one or another generation matters and has impact as well.

Following this study, the research 'Universal Indicators of Design's Socio-economic Impact' is proposed to scale up locally based findings throughout Europe to develop more universal design value indicators. The third phase would be determining any differences in perceived design value across the globe.

backstage. how was the added value value of design decoded

The originality and innovation of the research is in the developed methodology and applied design research strategy of how perceived design value attributes, defined by users and segmented by generations and socio-economic class groups, were collected, analysed and interpreted. By applying qualitative and mixed-methods research for design, the study's novelty lies in interlinking approaches of a subjective theory of value and the context of a qualitative valuation strategy. The research decoded perceived design value indicators as design's added value in the context of user satisfaction and happiness, as well as in the context of the subjective theory of value and cultural narrative as design sociology.

25 Jesper Simonsen, Jorgen Ole Baernholdt, Monika Büscher, and John Damm Scheuer, Design Research: Synergies from Interdisciplinary Perspectives (Abingdon, UK: Routledge, 2010).

26 World Database of Happiness, 'What Is This World Database of Happiness?' Erasmus Happiness Economics Research Organization (EHERO), Erasmus University Rotterdam, last updated 1 August 2018, https://worlddatabaseofhappiness.eur.nl/.

The design of the study included analytical, descriptive, formative, normative and prescriptive studies, where synergies emerged from a diversity of sources and relationships,[25] and then it explored design as innovation processes for product or service development in the future. The methodology blended an interdisciplinary theoretical background of happiness and value surveys,[26] studies of sustainable consumption and production/management in line with design for sustainable social well-being,[27] and behavioural and cultural studies. Paradigms from psychology, sociology, anthropology, business and innovation management formed valuable input for the multidisciplinary research and led to defining user perceptions among five generations and the 21st-century class system. The design strategy of the study was developed and tested in focus groups with an aim of obtaining self-reported valuations of an individual's life in accordance with subjective well-being theory. Subjects for the open- and closed-ended questions for online interviews were chosen based on context and theory research to challenge design's added value in relation to design's socio-economic impact. The questions allowed users to formulate up to five self-reported perceived qualities of products and services as design's value attributes that were extracted and transmitted as perceived design value indicators.

In the social and behavioural sciences, many variables are not readily convertible to numerical scales. Thus, the measurement process of qualitative research involves the following steps: defining a phenomenon as a variable, which includes different levels; observing that a particular subject has a particular attainment level; and selecting the number that represents a termination point corresponding to the attainment level.[28] The variable for the research was the segmentation of users into generations and socio-economic class groups. The particular subject of the research was the identification of design values, but the number representing the termination point was chosen in line with international qualitative research.[29]

27 Alja Freimane, 'Design for Sustainable Social Well-Being: The Paradigm Shift of Design' (PhD thesis, Art Academy of Latvia, 2015).

28 Therese L. Baker, Doing Social Research (New York: McGraw-Hill, 1994), 122.

29 McKinsey & Company, 'McKinsey Design Index, 2018', accessed 10 August 2020, https://solutions.mckinsey.com/design-index/.

who perceived design added value?

The novelty of the research methodology lies in research subject analysis classified by user groups of five generations and the 21st century socio-economic class groups. As age is still the only protected characteristic (which is essentially justifiable as direct discrimination),[30] respondents were asked to categorise themselves according to the following five generations, considering local- and country-specific economic, political and social events, as well as values, attitudes and behaviours characteristic of the nation:

- The Silent Generation (<1945)
- Baby Boomers (1946–1965)
- Generation X (1966–1980)
- Millennial, or Generation Y (1981–2000)
- Generation Z (2001–2015)

In that way, respondents were grouped by generation rather than chronological age.

Because socio-economic class impacts the distribution of income and wealth and influences opportunity, health, life expectancy, quality of life, education and justice, respondents from the Silent Generation, Baby Boomers, Generation X and Millennials were asked to answer a set of questions that categorised them in the following groups based on socio-economic classes:

30 John J. Macionis and Ken Plummer, Sociology: A Global Introduction (London: Pearson, 2012).

31 Fiona Devine and Helene Snee, 'Doing the Great British Class Survey', The Sociological Review 63, no. 2 (2015): 240–58.

32 Steven Atherton, Kathy Neal, Harjit Kaura, Christine Jeavans, and Applied Works, 'The Great British Class Calculator: What Class Are You?' BBC News Magazine, 3 April 2013, https://www.bbc.com/news/magazine-22000973.

- New affluent workers
- Traditional working class
- Emergent service sector
- Precariat

The social class analysis algorithm is provided by researchers from the Mike Savage academic team, 2BBC Lab UK and BBC Current Affairs,[31] which are available on the BBC website.[32] The Great British Class Calculator correlates to the discussions of socio-economic class systems in Germany[33] and the United States,[34] although issues like symbolic capital and personal values remain unaddressed. For example, the value of economic capital is defined by place of residence.

As such, life in cities, suburbs and the rural countryside offer very different and distinct living experiences, demonstrating symbolic and personal values, but the place of living also reflects the ratios of residential property. Nature, fresh air, peace and quiet and even escaping the global COVID-19 pandemic are valuable to persons living in rural areas, while outside of the lockdown situation, city residents have far easier and more access to culture, entertainment and multicultural experiences. However, at the same time, cities have far higher population densities and more air pollution. From one perspective, the rural countryside lifestyle could be far cheaper than living in the city, given property values and the affordability of food, but from another perspective, it is more expensive due to the distance from doctors, movie theatres, concerts or grocery stores, which increase costs in gasoline and time. Although the existing socio-economic class calculation model was used, there is room for future development of this model by including symbolic capital and personal values.

33 Michael Vester, 'Class and Culture in Germany', in Rethinking Class: Culture, Identities & Lifestyles, eds. Fiona Devine, Mike Savage, John Scott, and Rosemary Crompton (London: Palgrave Macmillan, 2005), 69–95.

34 Fiona Devine, 'Middle-Class Identities in the United States', in Rethinking Class: Culture, Identities & Lifestyles, eds. Fiona Devine, Mike Savage, John Scott, and Rosemary Crompton (London: Palgrave Macmillan, 2005), 140–62.

It was carefully considered whether to break down the data by gender, as the issue is now in great debate. For now, categorising by gender is in the design methods, particularly in defining a target audience and creating personas. Nevertheless, the results of the author's postdoctoral research demonstrated no significant impact on perceived design value indicators in terms of gender, generation or socio-economic class. Those factors did impact ranking, but that needs to be validated on a macro scale.

Open- and closed-ended questions in the online qualitative and mixed-methods interviews with 48 questions were conducted with 250 respondents during March–September 2019, of which 202 were analysed in September 2019–June 2020. Respondents were asked to participate in interviews voluntarily and anonymously.

The respondent sample was equivalent to 0.01% of the total Latvian population, which is 1,891,520, based on United Nations data, and is equivalent to 0.02% of the total world population.[35]

35 Worldometer, 'Latvia Population', accessed March 2020, https://www.worldometers.info/world-population/latvia-population.

limitations of the research

• Respondents in the case study were chosen on a country-specific basis according to the aim of the postdoctoral research project. Thus, all respondents had experienced the same economic, political and cultural-social development, while the values that formed their attitudes and behaviours where culture-specific.

• Generation Z was not analysed and counted in the socio-economic class segmentation because they are still dependent on their parents and are not yet building their economic capital.

• Elite individuals with very high economic capital (particularly savings), high social capital and very 'highbrow' cultural capital; the established middle class, with high economic capital, high status of mean social contacts and both high highbrow and high emerging cultural capital; and the technical middle class, with high economic capital, a very high status of social contacts, relatively few contacts reported and moderate cultural capital[36] were not analysed as no responses were offered regarding these three classes.

• The socio-economic class methodology was adapted from UK research publications.

• Design maturity matrices and methods for policymakers as theories or policy frameworks were beyond the scope of this research.

36 Savage, Social Class.

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about the author

Humans and continuity as sustainability, empathy and senses are central to my everyday being and are the subjects of the research for design.

I have a multi-contextual educational and professional background, and experience, thinking, interest and understanding that led me to my doctoral study of design, sustainability and social aspects with a focus on historically inherited life practices in Latvia in line with a global context. The paradigm shift in my research on design arose from one simple question I asked the respondents in my doctoral thesis: What is most valuable in your life? Because none of the answers included products or services, but rather focused on people, relationships and social capital, I linked my passion and interests in design with people and sustainable practices. This led to happiness, behaviourally, and valued studies in design.

As a side result of my PhD, I developed and published Design Footprints (Dizaina pēdas in Latvian), an interactive timeline and map of design, socio-economic, political, technological and sustainability facts from 1588–2015. In Design Footprints, 168 design events and facts, including 64 design concepts, are linked closely to 144 technological innovations and 89 political, 57 economic, 24 social and 20 sustainability impact factors that have changed and influenced today's problems and contexts. The map encourages following historical facts as milestones throughout time and thinking about the causes and effects of external systems in relation to design solutions.

For a long time, I was curious about what is behind such a widespread professional assumption as 'design adds value'. If that is so, we, as humans, should feel it in our everyday lives. Now I am looking forward to testing the perceived design value indicators articulated by Latvians across other nations.

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