shoppingmall.exe not found

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ABSTRACT

This paper examines how changes in physical retail due to digital advances can inform a sustainable and adaptive design for Dutch post-war shopping malls. Malls have become outdated and don't fit in the current society anymore. The malls that are still functioning are shifting to an entertainment experience. Research on a future-orientated design using developments in online retail can make malls adaptable for the future. A silver lining in this research is if the social, aesthetical, and economic values of the mall still are perceived by the public after these future-orientated developments.

Interviews were conducted with a tech company to give an insight into the future of retail versus online. To get an understanding of the impact of the store environment on the human perception of shopping, interviews were conducted with psychologists focused on the field of the human psyche as opposed to digitalisation. A game is created that is playable inside the shopping mall. Users could with the help of QR codes, make an avatar to play, and answer quizzes about the mall to gain points. The questions generated important data about people their values, attention points, and shopping motives.
      This paper hypotheses that retail will change from an operation-based to an experience-based platform. Important factors for retail will be customer attention, personalisation, and store personality/image.

Keywords: Shopping mall, Heritage, Store environment, Digital commerce, Scenario Planning

Table of content_

Problem statement & research questions_

I used to live near a shopping mall when I was younger. After school, my friends and I would go to the mall to eat ice cream, look for clothes, or just hang out. Within these hallways, we would spend whole afternoons while people came in for their daily shopping. With the digital era and online shopping, I would rather stay home and get my stuff delivered to my home than spend my afternoon in a shopping mall. The mall is becoming no longer a place to hang out and kill time and it seems that no effort is put into the area, resulting in further decay.

PROBLEM STATEMENT

The shopping mall is defined by its independent retail stores, services, and parking areas conceived, and maintained, by a management firm as a unit (Warren, 1995). We have come to live where these malls are replaced by a digitalised world and online shopping seems to become the standard. According to the U.S. Census Bureau, e-commerce is approaching $871 billion in revenue in the United States alone.

It accounted for 11,8% of total retail sales in 2021, compared to 7% five years ago. According to Thuiswinkel Markt Monitor, e-commerce accounted for 31% of total retail sales in the Netherlands in 2021.

The malls that are still functioning, are for the sake of the competitive edge, changing their environment into an entertainment experience. (Wilhelm, 2005). Entertainment experience in a mall could also be explained as a distraction. Are social, aesthetical, and economic values still perceived by the public amidst this much distraction? The values that are at the heart of the mall in its heritage status. This research will dive into the question of what people still value in these malls. Is the mall still a piece of history that has to be cherished, or is it a mere shell for the theme park within?

There is enough evidence that malls are outdated and do not fit in the current society anymore. Research on a future-oriented design using developments in online retail can make malls adaptable for the future. Attention points for in this proces are: flexibility of use, good mobility, and focused care without distraction (Hare, 2017).

The challenge for this research

is to find a hybrid solution between the physical aspect of retail, and the digital behaviour of customers.

RESEARCH QUESTION:

How can changes in physical retail due to digital advances inform a sustainable and adaptive design for Dutch post-war shopping malls?

How are digital commerce and its relationship to physical retail changing?

How is digital commerce affecting the use of the mall?

How have changes in physical retail affected shop (re)design?

How can value- and attribute-focused scenarios of retail contribute to a future-adaptive (re)design?

effect

cause

goal

How can changes in physical retail due to digital advances inform a sustainable and adaptive design for Dutch post-war shopping malls?

location

time-frame

object

(i) unplanned process
(i) societal use

(i) planned process

(i) concept

How can changes in physical retail due to digital advances inform a sustainable and adaptive design for Dutch post-war shopping malls?

(t) area

(i) concept

(t) building

Figure 1 - coding research question

Definition of theoretical framework_

Shopping is the match between the consumer and the product. When a consumer walks into a retail store, the only goal is to make a connection with the product. In the early days, products lay in storage, and was the vendor the connection between consumer and product. Nowadays products are distributed across the store area and are products left to sell themselves (Kooijman, 1999). According to Barr and Broudy: "[the designer] integrates merchandise into a shopping environment that is organized, exciting, and enjoyable for the customer. The result: Makes merchandise sell itself" (Barr, 1990, p. 95).

With online shopping being the pinnacle of convenience, traditional retailers have to turn to what the internet lacks: online personal experience (Rigby, 2011). This shows that physical shopping will eventually return to its early days. Where products lay in storage and the consumers come to the store to have personal contact with the vendor, product, and most important: the brand.

If physical retail will eventually come down to personal experience, then what is the human perception of shopping? One of the big factors of human perception in shopping is the *store environment*. According to Lewison (1994), the store environment is linked to three subcategories:

a) store image. This consist of external impressions such as storefronts and product design. This is complemented by internal impressions like store personality and merchandise strategies.

b) Store atmosphere. This factor is mostly an unconscious but important experience in shopping. The atmosphere of the shop is experienced with all five senses and causes a complete sensation of its surroundings.

c) Store theatrics. This is caused by the stores that are willing to go the extra mile to attract customers with decor themes and store events.

Whereas the first factor is important for shopping frequency, affect the latter two the shopping quality (Charles, 2021).

The categories in the store environment are physical elements, therefore they can be connected to the attributes by Veldpaus (2015). In her research, Veldpaus discerns a list of terms that categorises a piece of heritage in either

tangible or intangible attributes. Here the internal store image consists of intangible attributes whereas the other elements consist of tangible attributes. A detailed scheme can be found in the appendix.

However, the factors posed by Lewison were set up at a time when online shopping wasn't even introduced to the public. With its arrival, new factors for an online store environment were set up:

a) Virtual layout & design.

b) Virtual atmospherics, which now primarily focussed on the visual aspects of colour schemes and amount of white space.

c) Virtual theatrics, such as animation techniques, images, and interactivity.

d) Virtual social presence. This consists of web counters for questions, and the use of comments (Manganari, 2007).

Based on this literature it shows that the online environment with all its futuristic-looking factors hasn't changed considerably when you compare its factors of the store environment.

This research strives for informing a sustainable and adaptive design. *Our common future* by the WCED (1987), defines sustainable development as follows: "[the] process of change in which the exploitation of resources, the direction of investments, the orientation of technological development; and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations" (p. 44).

Adaptive reuse is the process that extends "the building's [and site's] physical and social functions by giving the building a new purpose while conserving its historic and cultural significance" (Conejos, 2016, p. 508).

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online vs offline

now future

Rigby, 2011

personal contact
brand experience
operation

online

store environment
- virtual layout & design
- virtual atmospherics
- virtual theatries
- virtual social presence

Mangunari, 2007

Kooijman, 1999

products
have to sell
themselves
operation

offline

store environment

- shopping frequency
- shopping quality
  - store image
    - layout and architecture
    - symbol and colours
    - advertising
    - sales personnel
  - store atmosphere
    - sight
    - sounds
    - scent
    - touch
    - taste
  - store theatries

Charles, 2021

Lewison, 1994

Martineau, 1958

Cheng, 2009

intangible
- (i) character
- (i) community

attributes

tangible
- (t) building
- (t) built element

Veldpaus, 2015

values
- aesthetical
- emotional (col.)
- economic use
- historic

Tarrafa Silva, 2012

motive
- operation
- experience

Figure 2 - flowchart theoretical framework

Methodological positioning & description of research methods_

METHODOLOGY:

How retail is changing in the digital era will be discussed according to several interviews.

An interview will be conducted with the business development director of a tech company focused on identity management in a digital world. Together with his fascination with fashion, will this give an insight into the future of retail versus online. The interview will be recorded and the main topics are the future predictions on retail and how online and offline can complement each other.

To investigate how the human perception of retail has changed, this topic is divided into 3 parts: store environment, values, and shopping motive. The impact of store environment on perception will be discussed in a recorded interview with a psychologist focused on the field of the human psyche as opposed to digitalisation. The goal of these interviews is to get an insight into the impact of the store environment on the human perception of shopping.

Values and shopping motives will be investigated with the use of gamification. The reason for this is that from personal experience researching case studies, people on the streets were reluctant to participate in an interview. With gamification, they can give their opinion in a playful setting.

Data in the game will be gathered by Google Forms that are linked to QR codes. Desired data are:

a) user values in the store environment

b) user attention in the store environment

c) user motives in shopping

The game is most easily visualised by an enormous board game which can be seen in figure 5. People who enter the mall can participate in the game by scanning QR codes which are distributed throughout the mall. The first step for users is to create an avatar. In this first step, data is generated on who uses the malls. The age groups in making the avatar are teenagers, adults, and elderly.

After making the avatar, users can go in and explore the mall in search of more QR codes. These codes are linked to a quiz that is related to the location they are at. Questions in this quiz are about people their

values and attention points in the store environment. The list of questions is located in the appendix. The values of users can then be compared with values implemented in past intervention strategies and see where they match or mismatch.

QR codes will be placed behind store windows. According to the places where users scan these QR codes, a map can be created per user with the walking route they have taken throughout the game. This map will also show which popular locations most people visit.

By answering questions in a quiz, users can obtain XP which will be in their favour to climb the overall leaderboard. To earn more XP for the enthusiastic users, treasures are distributed throughout the mall. This way the game will give people a fun way to interact with the mall and will generate important data about their values, attention points, and goals as well.

The results on the attention points of store design are compared by face-to-face interviews with retail owners. They will be asked about how they attract people inside using the factors of the store atmosphere.

To investigate the changes in physical retail affecting the architecture of shops, firstly photographic research will be conducted. Old photographs of storefronts will be compared with new ones. The focus of this research is how shops have changed their appearance over previous decades to attract visitors. This will be backed up by *A Brief History of the Mall* by Feinberg (1991).

Secondly, a recorded interview is conducted with a PhD-student of the faculty of Architecture. His research is focused on the development of relevant fusions between Deep learning, Computer vision, and Architectural design. The main topics in this interview are what kind of impact digitalisation and the switch from operation to experience has on architecture.

Finally, to extract the values that the participants (of both the game and interviews) have given, coding will be used. Passages of text can be distilled to only the core values of the participant. These values can be compared with each other according to age, gender, and profession.

Some hypotheses can be set based on the literature:

a) Retail will change from an operation-based to an experience-based platform.

b) Important factors for retail will be customer attention, personalisation, and store personality/image.

c) Shopping malls need less space for operation and more storage space for delivery.

RESEARCH CASES:

To get a clear view of the impact of intervention methods, updated shopping malls will be compared with outdated ones. However, shopping in general is still the basis of this game with elements like attention, values, and shopping goals.

Another criterium for choosing research cases is the floorplan of the mall. Only malls with multiple route options are suitable for this game. In malls such as De Hoven Passage Delft with one major passageway, it would be too easy to find QR codes. Since one code can provide the creation of the avatar and quizzes, users can start at every entrance of the mall.

Malls that are suitable for this

game are:

- Westfield Mall

- Alexandium Shopping Center

- In de Boogaard

- Winkelcentrum Leyweg

LIMITATIONS:

Limitations in the interviews are formed by their quantity. More interviews will give a broader vision of the future of retail.

In the game, the expected age of users will be teenagers and adults because these will most likely interact with QR codes. This limits the research. However, the opinion of these two groups is desired because their opinions are most representative of the future.

Multiple-choice questions limit the research as well. These questions make participation for users most convenient. However, the multiple choice answers limit the user in expressing their values and opinions. To minimise this, in all the questions users have the possibility to type an answer themselves.

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Figure 3 - Research Diagram
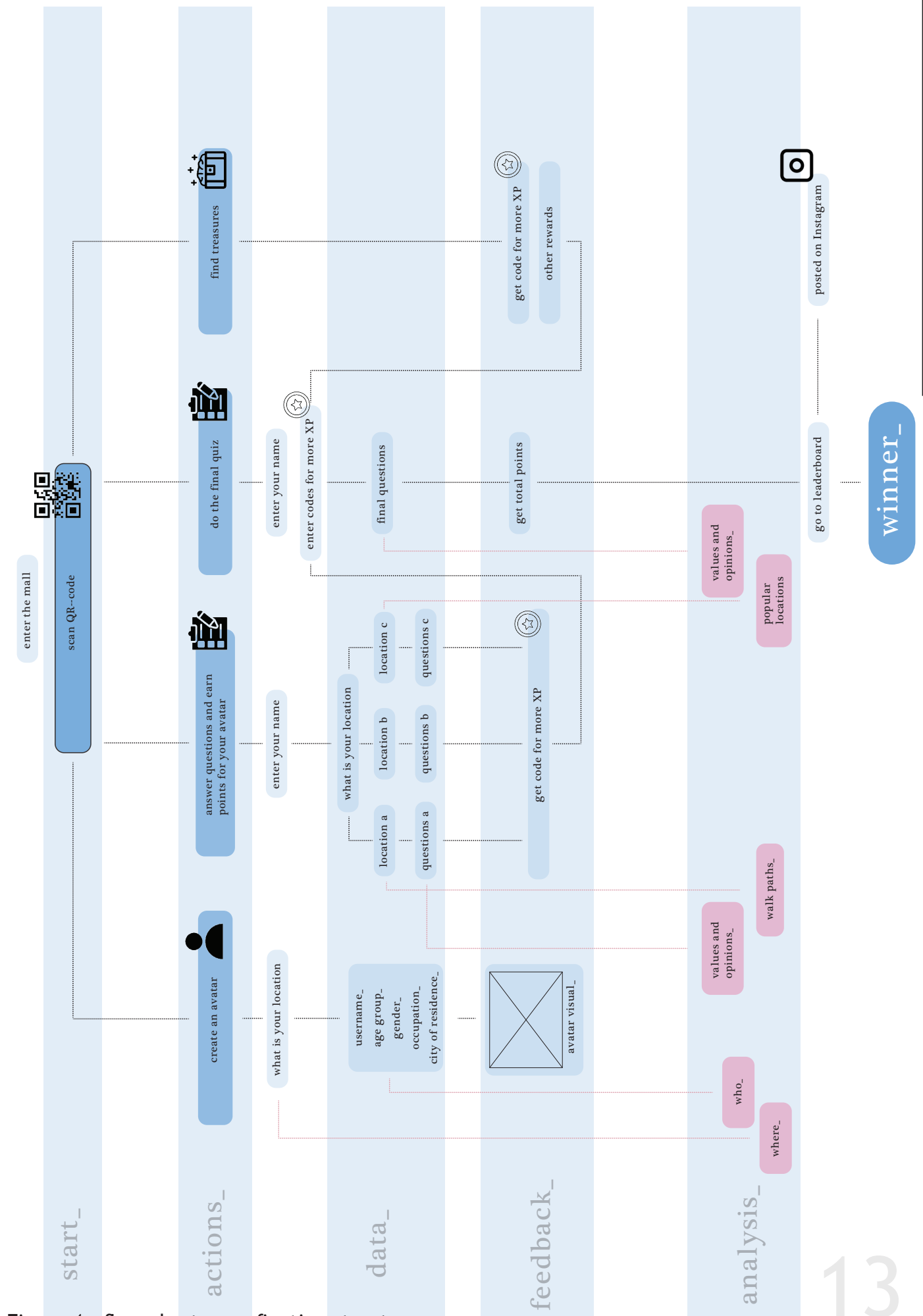
main question

how can changes in physical retail due to digital advances inform a sustainable and adaptive design for Dutch post-war shopping malls?

subquestions

how are digital commerce and its relationship to physical retail changing?

how is digital commerce affecting the use of the mall?

how have changes in physical retail affected shop (re)design?

elements

what — attributes

why — values

who/why — motive

past to present

present to future

future

relation

store env.

store image — ext. int.

store atmosph.

store theatrics

(t) built element — (t) building

(i) character — (i) community

(t) built element — (t) building

(i) character — (t) built element

aesthetical

emotional (col.)

economic use

historic

experience

operation

methods

interviews — tech companies

interviews — MSc psychology

gamification — treasure hunt — interviews — shop owners

photographs — storefronts

interviews — PhD architecture

c o d i n g

result

future of retail

impact of store environment on perception

user values in store environment

user attention in store environment

user goals in shopping

impact of digitalisation on retail design

how can value- and attribute-focused scenarios of retail contribute to a future-adaptive (re)design?

attributes

values

design

driving forces

scenario 1

scenario 2

scenario 3

design strategy

Figure 4 - flow chart gamefication structure

start_

enter the mall

scan QR-code

actions_

find treasures

do the final quiz

enter your name

enter codes for more XP

answer questions and earn points for your avatar

enter your name

get code for more XP

create an avatar

what is your location

data_

what is your location

location a — questions a

location b — questions b

location c — questions c

final questions

username_
age group_
gender_
occupation_
city of residence_

avatar visual_

feedback_

get code for more XP

get total points

other rewards

analysis_

values and opinions_

popular locations

values and opinions_

walk paths_

who_

where_

posted on Instagram

go to leaderboard

winner_

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board_

leaderboard

name	score
name 1	ooo
name 2	ooo
name 3	ooo
name 4	ooo
name 5	ooo
name 6	ooo

shopping mall

pieces_

floorplan mall

treasure

question 1

create avatar

question 2

final quiz

people

places for actions_

shops

competition_

other people at the mall

T H E ●
M A L L
G A M E

@themallgam3
shorturl.at/cfio5
themallgam3@gmail.com

Figure 5 -
scematisation of game

Ethics_

As with any online activity, the risk of a breach is always possible. To minimise any risks, this game is kept completely anonymous with the use of usernames instead of actual names. Furthermore, in the game very little personal data is collected (the age range, gender, and approximate location of living place). Risks will be minimised by safely storing the personally identifiable information in both the research and the Informed Consent form.

The participation of people in this study is entirely voluntary and can withdraw at any time. They are free to omit any questions.

Research to design_

The conclusion of this research will answer how the changing human perception of shopping affects retail. More important, it gives an insight into how changes in physical retail can inform a sustainable and adaptive design for shopping malls. These insights will result in a couple of factors which are the so-called driving forces. These can influence the design of shopping malls and their shops over the coming years. To create a sustainable and adaptive design, a design strategy has to be created according to the theory of Brand treated in How Buildings Learn (1994).

In this theory, driving forces are ranked in terms of importance and uncertainty. Together with pre-determined certainties, multiple plot lines are being created which give an insight into possible futures. Then instead of a design plan based on the programming of expected use, a strategy is created that is viable in the variety of foreseen futures. The final step is to identify indicators that will be monitored to see which scenario is occurring in real life.

In the ideal situation of design, all stakeholders who are involved in the project should take a part and have a say in the design of the scenarios and strategies. A limitation of how this method is used, is that in the design phase, not all the stakeholders can be involved to take a part in the creation of the scenarios. With the help of interviews, it is expected that the opinions and values of some stakeholders are being captured which is clear enough to minimalise the impact of this limitation.

Bibliographical references_

BIBLIOGRAPHICAL REFERENCES:

Ahmer, C. (2020). *Riegl's 'Modern Cult of Monuments' as a theory underpinning practical conservation and restoration work.*

Barr, V., Broudy, C.E. (1990). *Design to sell.*

Brand, S. (1994). *How Buildings Learn.*

Charles, D., Obedgiu, V., Nkuruziza, G. (2021). *Retail atmospherics and retail store patronage of supermarkets in emerging economies.*

Conejos, S., Langston, C., Chan, E.H.W.W., Chew, M.Y.L.L. (2016) *Governance of heritage buildings: Australian regulatory barriers to adaptive reuse,* 507–519.

Feinberg, R.A., Meoli, J. (1991). *A Brief History of the Mall.*

Hare, S.M. (2017). *Returning dead mall sites to vitality through age-in-place design.*

Kooijman, D. (1999). *Machine en Theater.*

Lewison, D.M. (1994). *Retailing.*

Manganari, E.E., Siomkos, G.J., Vrechopoulos, A.P. (2007). *Store atmosphere in web retailing.*

Martineau, P. (1958). *The Personality of the Retail Store.*

Rigby, D.K. (2011). *The Future of Shopping.*

Tarrafa Silva, A., Pereira Roders, A.R. (2012). *Cultural heritage management and heritage (impact)assessments.*

Wilhelm, W. B., Mottner, S. (2005). *Teens and shopping mall preferences: A conjoint analysis approach to understanding the generation shift toward an experience economy.* Journal of Shopping Center Research, 12(1): 23–52.

World Commission on Environment and Development – WCED. (1987). *Our Common future (the Brundtland Report),* 43-44.

DICK DEKKERS - BUSINESS DEVELOPMENT DIRECTOR DIGIDENTITY

On the future of retail and the metaverse

- How did you experience working from home?
- How is the balance between working from home and on location at your work?
- How is a meeting online different from real life?
- Do you think every form of contact will be transferred to digital?
- How do you see the metaverse become a part of our lives in a couple of years/ decades?
- Do you more shop online or offline?
- Do you feel connected to a certain store or brand when shopping online?
- What does online shopping lack?
- How do you think individual shops can compete against platforms like Alibaba and Amazon?
- Can online and offline complement each other?
- So how has the online environment and convenience influenced the perception and expectancy of retail shopping?
- What do you still need from the physical world once everything is possible in VR?

STANLEY VAN REE - MSC ECONOMIC AND CONSUMER PSYCHOLOGY

On the impact of digitalisation on the human psyche

- How did you experience working from home?
- How does non verbal communication play a part in an online environment?
- Do you perceive a difference in store image/atmosphere when shopping online or physical?
- Do you feel connected to a certain store or brand when shopping online?
- On what front do you think physical shops can be better than online?
- Do you think that an experience in VR can feel the same as in real life?
- What kind of impact can a digital life have on the human psyche?
- How can people find peace when with VR we can switch seamless between work and leisure?
- What do you still need from the physical world once everything is possible in VR?

CASPER VAN ENGELENBURG - PHD CANDIDATE AiDAPT LAB AND DIGITAL CULTURE GROUP AT ARCHITECTURE TU DELFT

On the impact of digitalisation on architecture

- How did you experience working from home?
- How does your research impact architecture?
- What kind of impact do you think online shopping has on the architecture of shops considering that shopping will shift from operation to experience?
- Does the new vision of a shopping mall still exert the same values as the classic idea and identity of a shopping mall?
- How can changes in physical retail inform a sustainable and adaptive design for shopping malls?
- What do you still need from the physical world once everything is possible in VR?

RETAIL OWNER

On the present and future of retail

- Do owners use shops differently throughout the years?
- How do shops use the shopping front?
- How do you attract people?
- What do you change when less people come in?

- How are you different from an online shop?
- How is the connection between offline and online?
- Online acquisition costs are rising, how do you deal with this?
- To what extend can you decide your strategy?
- What do you aspire the mall to be?

USER

On the present and future of retail

- Age, gender, occupation, city of residence
- Why not online shopping?
- "Look at the historic picture of the mall, do you see any change? Do you like the change?" *(interventions)*
- "Design your own mall! What is important? *(points for improvement)*
- "Go into the clothes store in front of you, name the first 3 things that caught your eye" *(attention points)*
- "I go shopping in the mall because ..."
- "Online shopping makes me feel ..."
- "Shopping in the mall makes me feel ..."
- My personality is totally:
  - The couch potato who orders online *(value: nothing)*
  - The outgoing type who socialises *(value: social emotional collective)*
  - Big spending fashionista *(value: economic use)*
  - Big spending foodie *(value: economic use)*
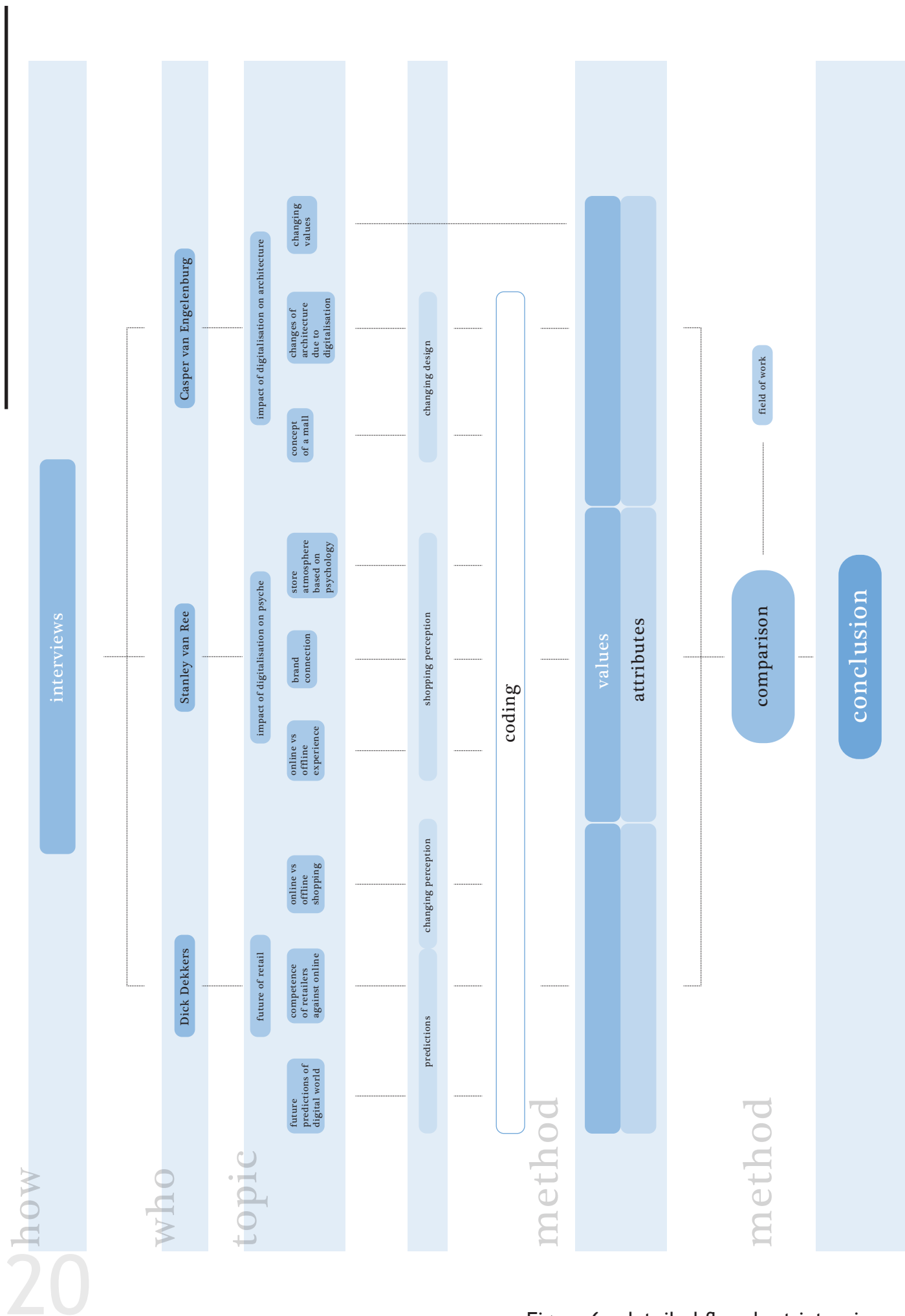 - The nostalgic *(value: historic)*
  - The artist *(value: aesthetical)*

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how

who

topic

method

method

interviews

Dick Dekkers   Stanley van Ree   Casper van Engelenburg

future of retail   impact of digitalisation on psyche   impact of digitalisation on architecture

future predictions of digital world   competence of retailers against online   online vs offline shopping   online vs offline experience   brand connection   store atmosphere based on psychology   concept of a mall   changes of architecture due to digitalisation   changing values

predictions   changing perception   shopping perception   changing design

coding

values   attributes

field of work

comparison

conclusion

Figure 6 - detailed flowchart interviews

photographic research

photographs of shopping fronts

interventions

interventions

interventions

interventions

interventions

change

change

change

change

change

comparison

changing values

Figure 7 - detailed flowchart photographic research

Social media strategy_

In this research, the more data that can be obtained, the better. Therefore, flyers will be distributed in the neighborhood of the mall the week before the game starts.

Besides physical promotion, social media will be used to promote the mall game. An Instagram page will be created @TheMallGam3 where promotional content will be posted. Besides promotional content, leaderboards from the game will be posted after each day. Together with hashtags, the game will be shared on other social media platforms to reach as many people as possible. Promotion will be done in Facebook groups as well. Specifically, groups that unite people of neighbourhoods around the mall and general groups about (budget) shopping.

People who join the game will be encouraged to use hashtags like #TheMallGame #MallMemories and #LetsGoToTheMall.

to play the game_

https://docs.google.com/forms/d/e/1FAIpQLSepAeOlfa4Fhbh-HjcMFVA3asYMJIV6VF1x2Zo42Pl_X72zdAA/viewform

THE●
MALL
GAME

○ @themallgam3
f shorturl.at/cfio5
✉ themallgam3@gmail.com

Informed consent form - English

You are being invited to participate in a research study titled The Mall Game. This study is being done by Thomas Wendt under the supervision of dr. Bruno Amaral de Andrade, Assistant Professor at the Heritage and Architecture section, TU Delft.

The purpose of this research study is to find out why people still go to physical shops instead of online. This research will take you approximately 15 minutes to complete. The data will only be used for education and academic publication collectively. We will be asking you to participate in a game that will ask you about your values and opinions in the mall.

As with any online activity, the risk of a breach is always possible. To the best of our ability, your answers in this study will remain confidential. We will minimise any risks by keeping this game completely anonymous with the use of usernames instead of actual names. Be careful NOT to use your real name. We are furthermore collecting very little personal data (your age range, gender, and approximate location of living place). We will minimise any risks by safely storing the personally identifiable information in both the research and the Informed Consent form.

Please notice that your participation in this study is entirely voluntary and you can withdraw at any time. You are free to omit any questions. Contact details for the corresponding and responsible researcher are as follows. Name: Thomas Wendt, Phone number: +316 2909 0980, Email address: twendt@student.tudelft.nl.

If you are agreeing to this Opening Statement you can click through to participate in the online game

Informed consent form - Dutch

U wordt uitgenodigd om deel te nemen aan een onderzoek genaamd The Mall Game. Dit onderzoek wordt uitgevoerd door Thomas Wendt onder begeleiding van dr. Bruno Amaral de Andrade, Assistant Professor at the Heritage and Architecture section, TU Delft.

Het doel van dit onderzoek is om te kijken waarom mensen nog fysiek winkelen in plaats van online. Het onderzoek zal ongeveer 15 minuten in beslag nemen maar kan gecombineerd worden met uw winkelen. De data zal gebruikt worden voor voor onderwijs-gerichte, academische doeleinden. U wordt gevraagd om deel te nemen in een spel dat vragen zal stellen over uw waarden en meningen in het winkelcentrum.

Zoals bij elke online activiteit is het risico van een databreuk aanwezig. Wij doen ons best om uw antwoorden vertrouwelijk te houden. We minimaliseren alle risico's door dit spel volledig anoniem te houden met het gebruik van gebruikersnamen in plaats van echte namen. Pas op dat u NIET uw echte naam gebruikt. We verzamelen bovendien zeer weinig persoonlijke gegevens (uw leeftijdscategorie, geslacht en geschatte locatie van uw woonplaats). We zullen eventuele risico's minimaliseren door de persoonlijk identificeerbare informatie veilig op te slaan in zowel het onderzoeks- als het formulier voor geïnformeerde toestemming.

Uw deelname aan dit onderzoek is volledig vrijwillig, en u kunt zich elk moment terugtrekken zonder reden op te geven. U bent vrij om vragen niet te beantwoorden. Contact details voor de uitvoerende en verantwoordelijke onderzoeker zijn als volgt. Naam: Thomas Wendt, telefoonnummer: +316 2909 0980, Email address: twendt@student. tudelft.nl.

Met het doorklikken van dit bericht stemt u automatisch in met de bovengenoemde risico's.