Waarden en attributen in Erfgoedbeheer

Gebruik van AI en sociale media data-analyse

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Netwerkbijeenkomst beleidsmakers erfgoed & cultuur

25.04.2023

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Public participatie

AI

duurzaamheid

Cultureel erfgoed

OPLEIDING

PhD in Architecture and Technology
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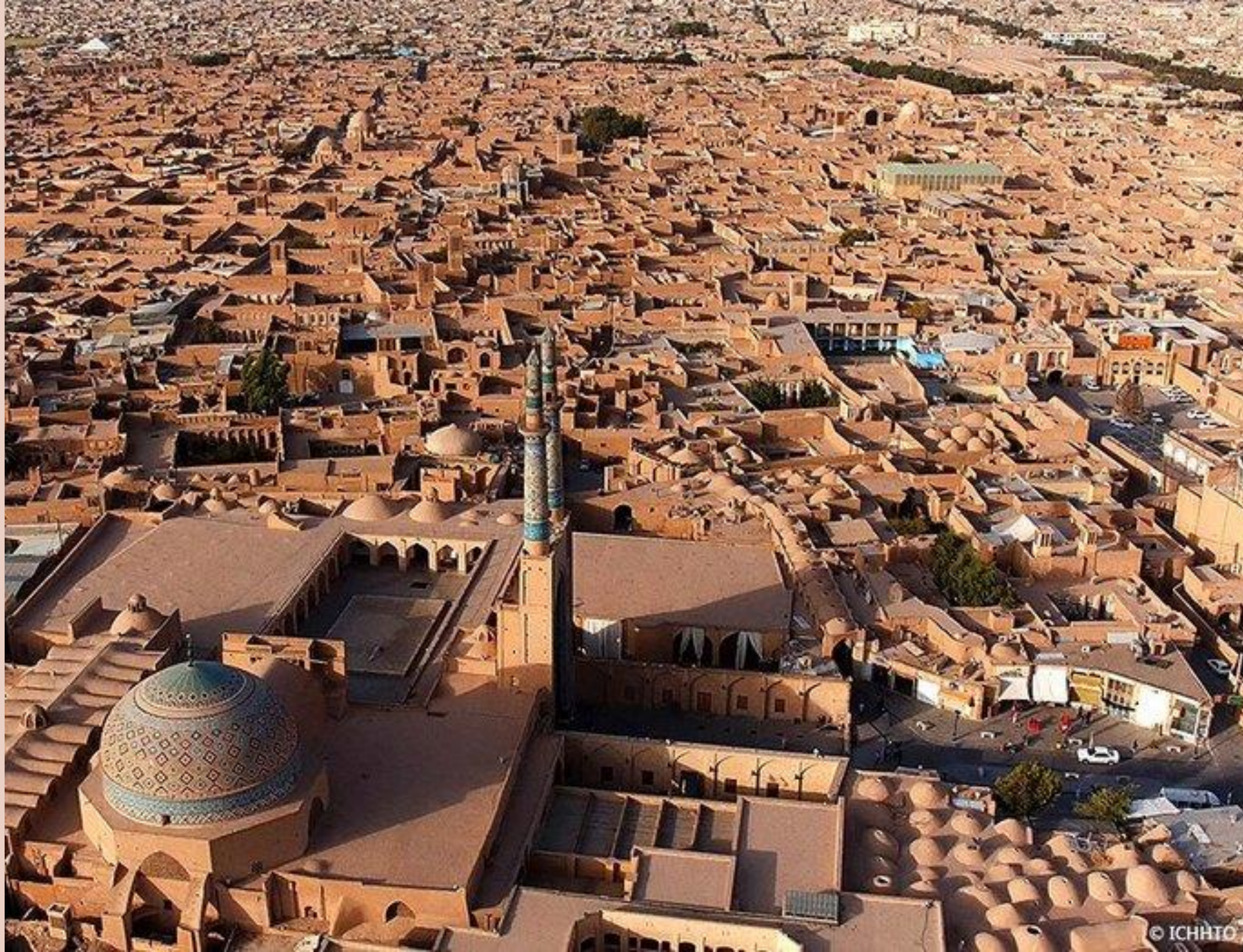
BSc in Architectuurtechniek
Universiteit van Teheran, Iran

PRIJZEN & ERETEKENS

Geselecteerd als lid van het UNESCO Young Professional Forum van 2023.

Geselecteerd als Faro Convention ambassador van 2022: Duurzaam Erfgoed en Digitalisering.

Doctoraatsbeurs, TU Delft, 2019.



23#00

Heritage Beyond Singular Narratives

Embracing Diversity in Participatory Heritage Planning Empowered by Artificial Intelligence

Mahda Foroughi

This PhD thesis explores the evolving field of heritage planning, focusing on the cultural significance of heritage properties. It advocates for a value-based approach that recognizes the diverse perspectives of stakeholders, including experts, policymakers, and users. While participatory heritage aims to foster consensus-building, tensions may arise due to varying cultural significance conveyed by different stakeholder groups. Conventional research methods are time-consuming and costly, limiting their effectiveness in heritage planning. To address this gap, this research aims to utilize Artificial Intelligence (AI) models and information repositories, such as social media platforms, to understand the cultural significance of built heritage from different stakeholder groups' perceptions.

This research presents a theoretical framework that examines the factors influencing consensus-building on heritage values and attributes. Based on this framework, a public participation methodology empowered by AI is developed and tested in the case study of windcatchers in Yazd, Iran. This study compares the perceptions of three stakeholder groups: experts, policymakers, and users. The findings reveal consensus on the value of windcatchers while highlighting differing interpretations of their significance.

The AI-empowered methodology proves effective in uncovering stakeholder groups' understanding of cultural significance. This framework can be replicated in other case studies, facilitating participatory heritage practices. The thesis contributes to knowledge in public participation, cultural significance, and AI in heritage planning, offering insights for practitioners and policymakers to promote inclusive heritage practices. It emphasizes the importance of stakeholders' contributions and advocates for a more diverse and inclusive approach to heritage planning.

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Heritage Beyond Singular Narratives | Mahda Foroughi

Heritage Beyond Singular Narratives

Embracing Diversity in Participatory Heritage Planning Empowered by Artificial Intelligence

Mahda Foroughi

Doelstellingen van deze workshop

Wat?

Analyse van sociale media met behulp van AI (Instagram, X, Facebook, ...)

Waarom?

Het faciliteren van inclusief erfgoedbeheer (op afstand in uitdagende contexten bijvoorbeeld oorlog)

Wie?

Cultuurambtenaar, erfgoedambtenaar, beleidsadviseur, cultuur/erfgoedbeheerder

Wanneer?

Alle fasen, vooral aan het begin van de projecten voor publieke inclusie

Hoe?

Agenda

1. Concepten en theorieën: Waarden en Attributen [10 minuten]

Kaders, Programmeertechnieken

2. Inleiding tot Sociale Media Analyse [30 minuten]

Stappen, Gereedschappen, Resultaten

3. Discussie [15 minuten]

Concepts and Theories

Waarden en Attributen

Attributen: **Wat is belangrijk?**
Waarden: **Waarom is het belangrijk?**

“The historic urban landscape is the urban area understood as the result of a historic layering of cultural and natural **values** and **attributes**, extending beyond the notion of “historic centre” or “ensemble” to include the broader urban context and its geographical setting.”

(UNESCO, 2011; RECOMMENDATION ON THE HISTORIC URBAN LANDSCAPES)

WAT te behouden? WAAROM?

ECOLOGICAL
SPIRITUAL
ESSENTIAL
EXISTENTIAL
[COE,1975]

SOCIAL
SPIRITUAL
EMOTIONAL (IND.)
EMOTIONAL (COL.)
ALLEGORICAL
[SPAB,1877]

ECONOMIC
USE
NON-USE
ENTERTAINMENT
ALLEGORICAL
[COE,1966]

AGE
WORKMANSHIP
EXISTENTIAL
MATURITY
[SPAB,1877]

VALUES
OTHER
[1877-2005]

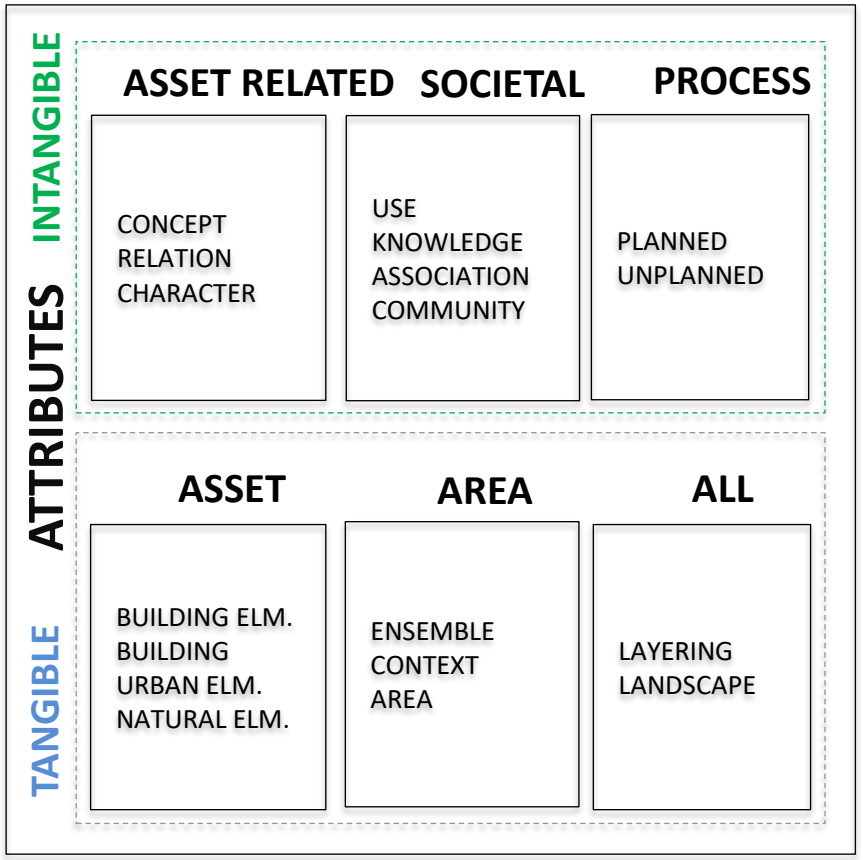
POLITICAL
EDUCATIONAL
MANAGEMENT
ENTERTAINMENT
SYMBOLIC
[ICOMOS,1967]

SCIENTIFIC
WORKMANSHIP
TECHNOLOGICAL
CONCEPTUAL
[RIBA,1904]

AESTHETICAL
ARTISTIC
NOTABLE
CONCEPTUAL
EVIDENTIAL
[SPAB,1877]

HISTORIC
EDUCATIONAL
HISTORIC-ARTISTIC
HISTORIC-CONCEPTUAL
SYMBOLIC
ARCHAEOLOGICAL
[SPAB,1877]

(PEREIRA RODERS, 2007; SPECKENS, 2010; TARRAFA AND PEREIRA RODERS, 2011)



(VELDPAUS, 2015; GUSTCOVEN, 2016)

Coderen van Waarden en Attributen

Coding – method explained
Yazd| Iran

"The City of Yazd is located in the deserts of Iran close to the Spice and Silk Roads. It is a living testimony to intelligent use of limited available resources in the desert for survival. Water is brought to the city by the qanat system. Each district of the city is built on a qanat and has a communal centre. Buildings are built of earth. [...] The use of earth in buildings includes walls, and roofs by the construction of vaults and domes. Wind-catchers, courtyards, and thick earthen walls create a pleasant microclimate."

(BRIEF SYNTHESIS, UNESCO, 2017)

SOCIAL
SPIRITUAL
EMOTIONAL (IND.)
EMOTIONAL (COL.)
ALLEGORICAL

ECONOMIC
USE
NON-USE
ENTERTAINMENT
ALLEGORICAL

POLITICAL
EDUCATIONAL
MANAGEMENT
ENTERTAINMENT
SYMBOLIC

HISTORIC
EDUCATIONAL
HISTORIC-ARTISTIC
HISTORIC-CONCEPTUAL
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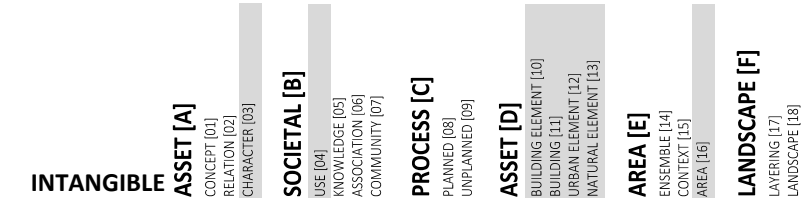
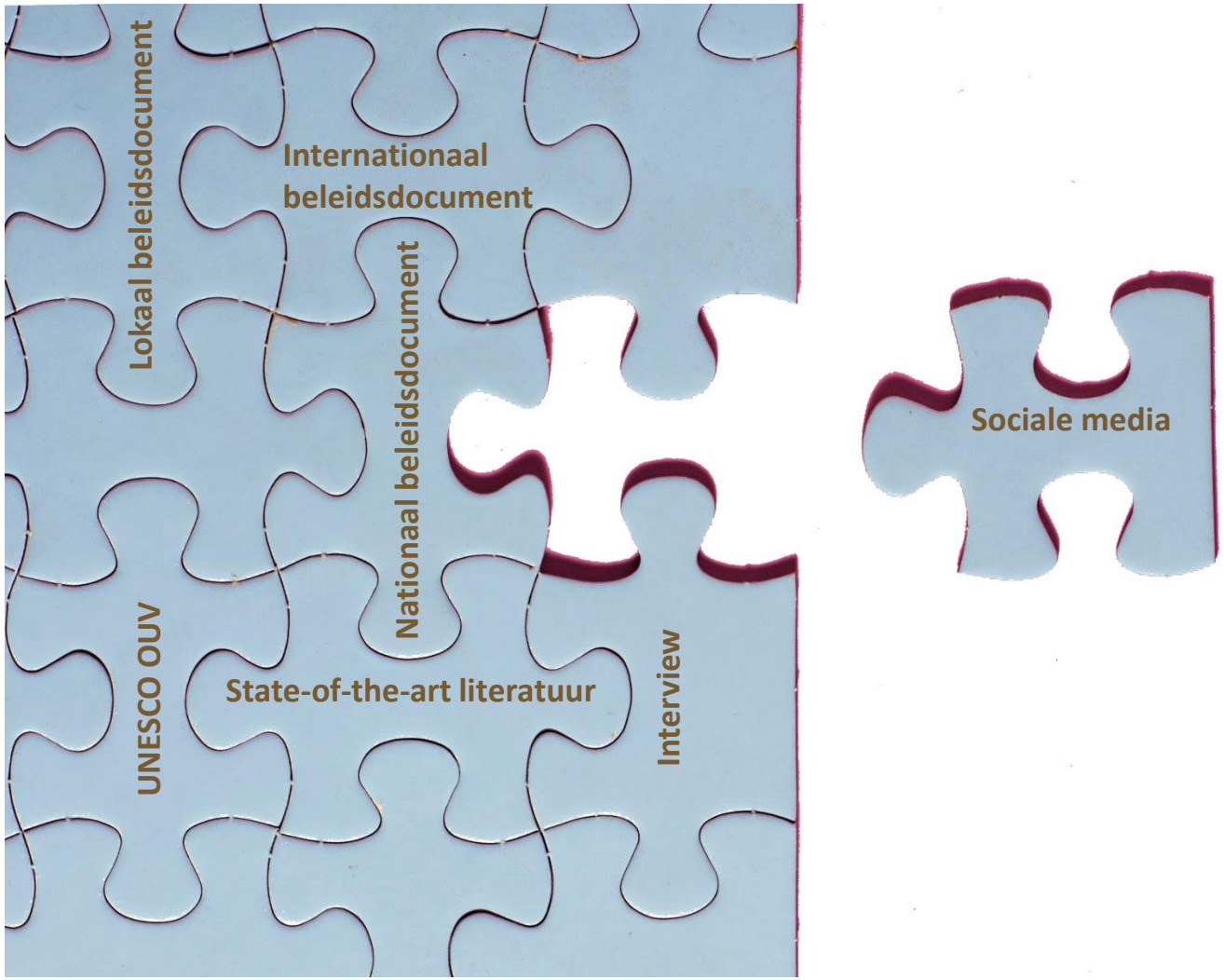
WORKMANSHIP
TECHNOLOGICAL
CONCEPTUAL

AGE
WORKMANSHIP
EXISTENTIAL
MATURITY

ECOLOGICAL
SPIRITUAL
ESSENTIAL
EXISTENTIAL

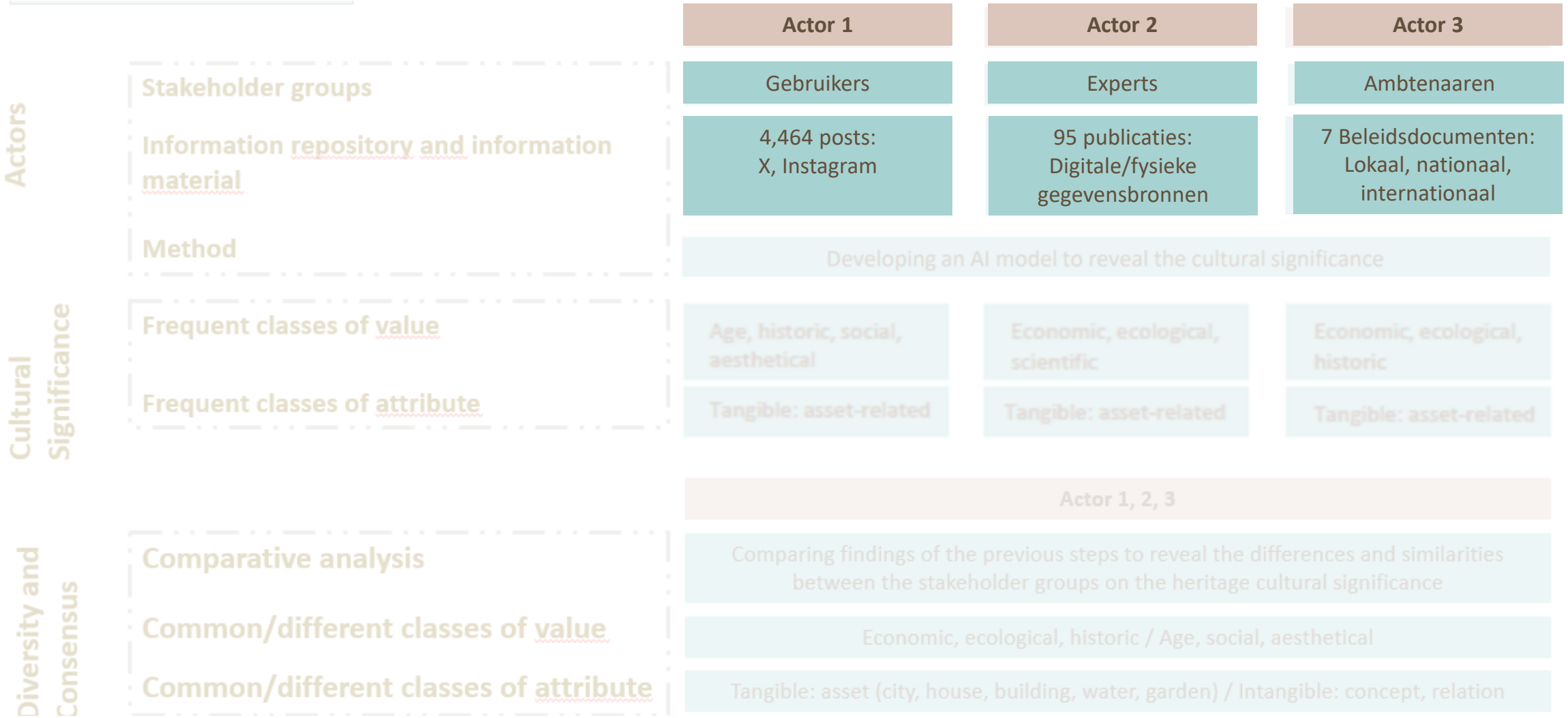


Databronnen



(Mahda Foroughi, 2021)

Methodologie



Sociale Media Analyse

Stappen, Gereedschappen, Resultaten

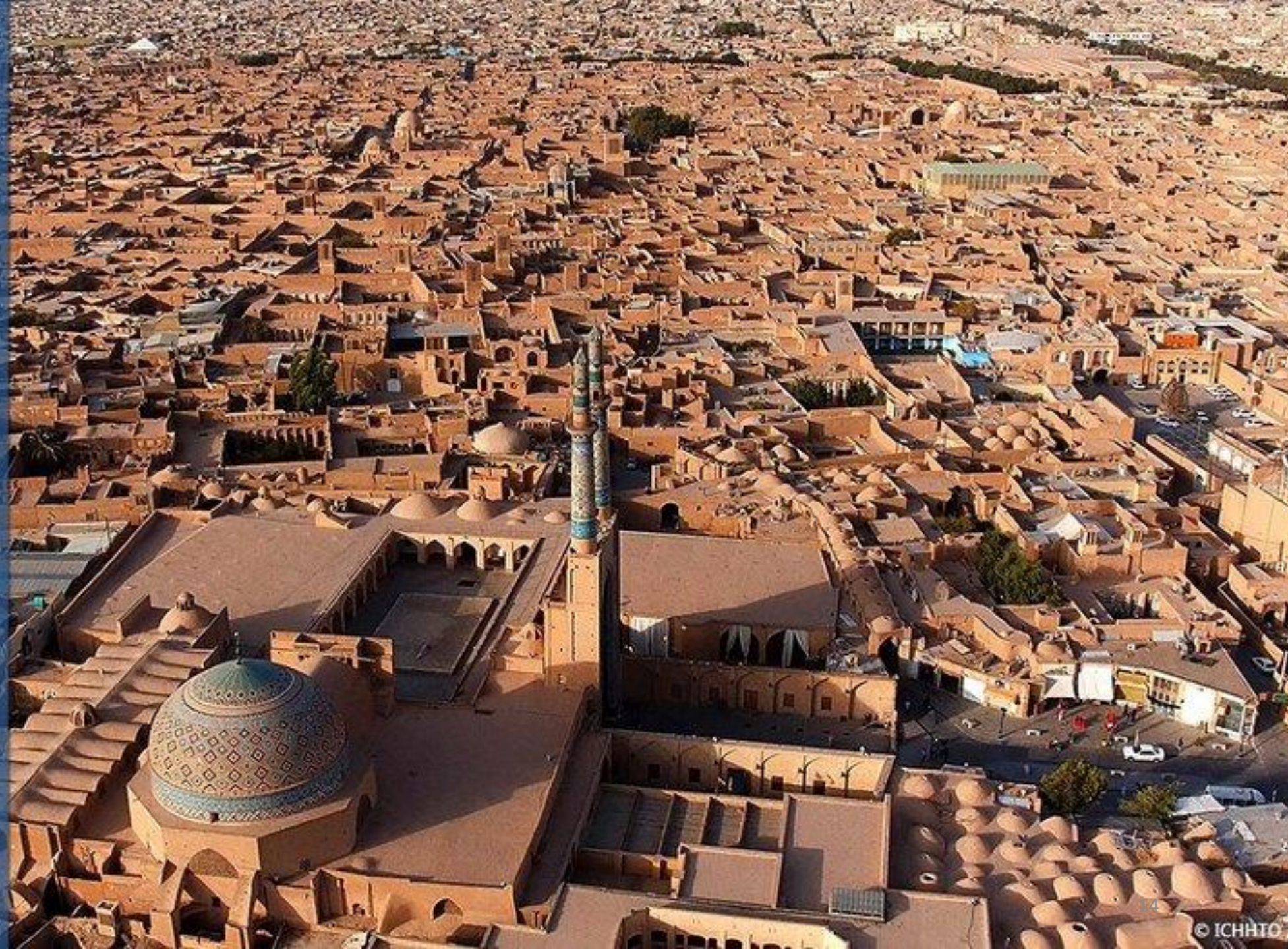
Historic City of Yazd

Iran
(Islamic Republic of)

United Nations
Educational, Scientific and
Cultural Organization

World
Heritage
Convention

#WorldHeritage

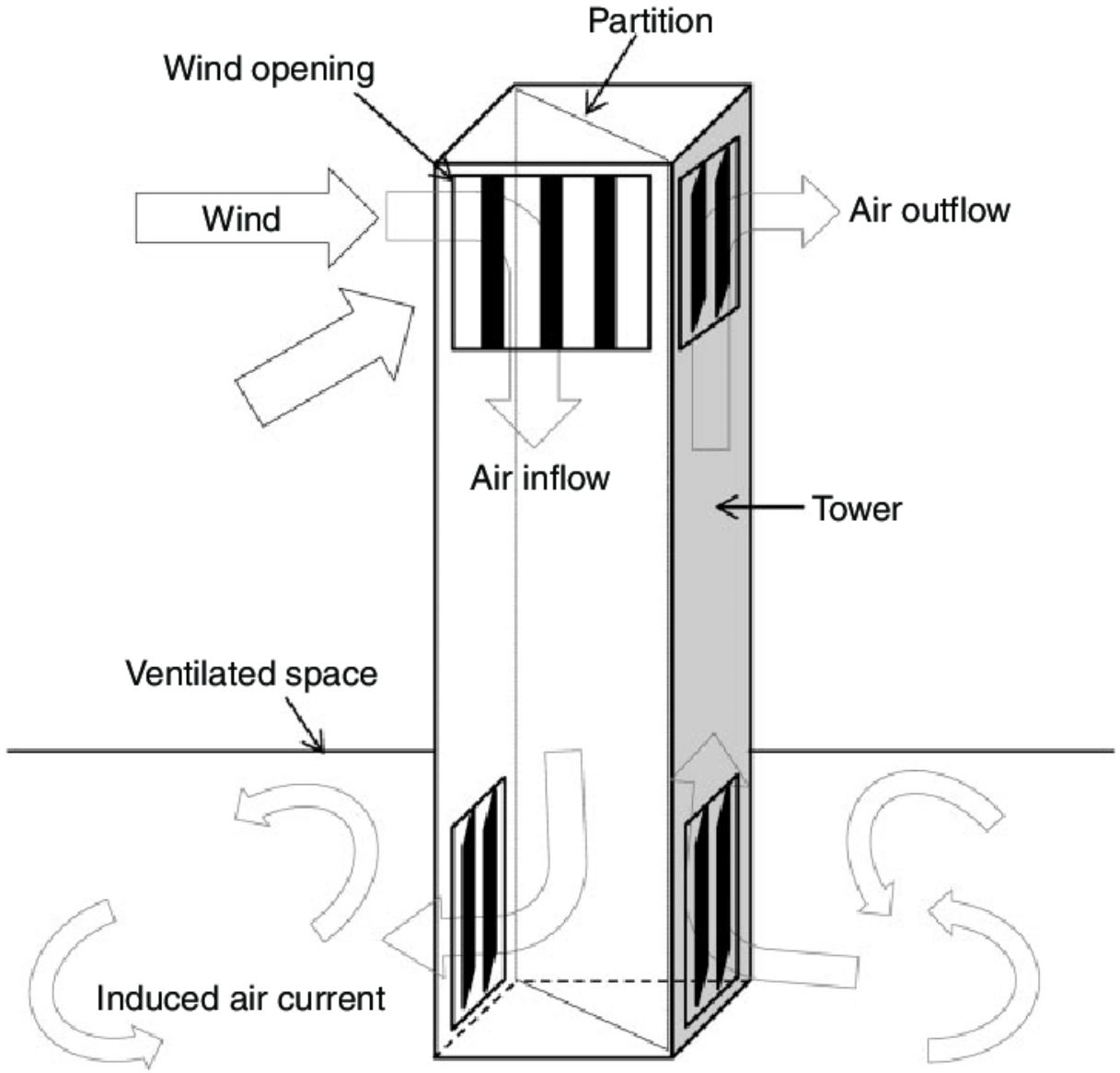


© ICHHTO

Source: https://surfiran.com/

Windtoren

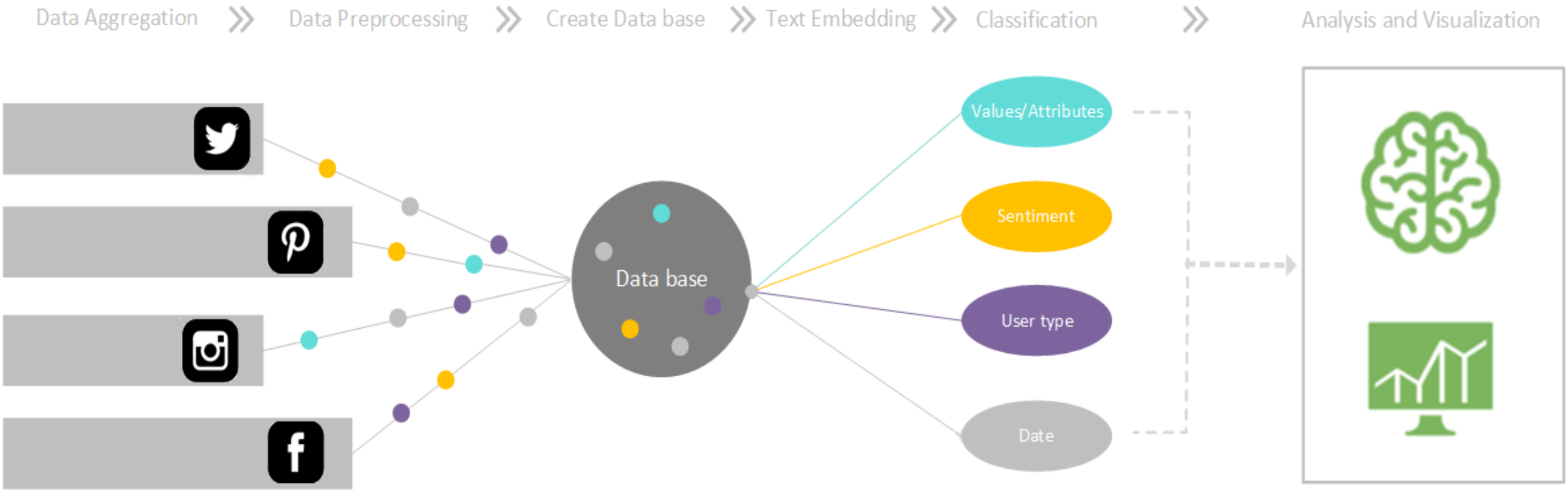
Passieve ventilatiesystemen



Source: Kassir, R.M., 2016. Passive downdraught evaporative cooling wind-towers: A case study using simulation with field-corroborated results. Building Services Engineering Research and Technology, 37(1), pp.103-120.

Sociale Media Analyse

Stappen



(Mahda Foroughi, 2021)

Python

1. Codeer de waarden en classificatie van waarden
   - Gebruik het Bert-model voor het inbedden en de Cosinusgelijkheidsmethode voor de nabijheid van inbedding

2. Codeer de attributen
   - Gebruik een NER (Name Entity Recognition) model en de Dependency Parsing methode

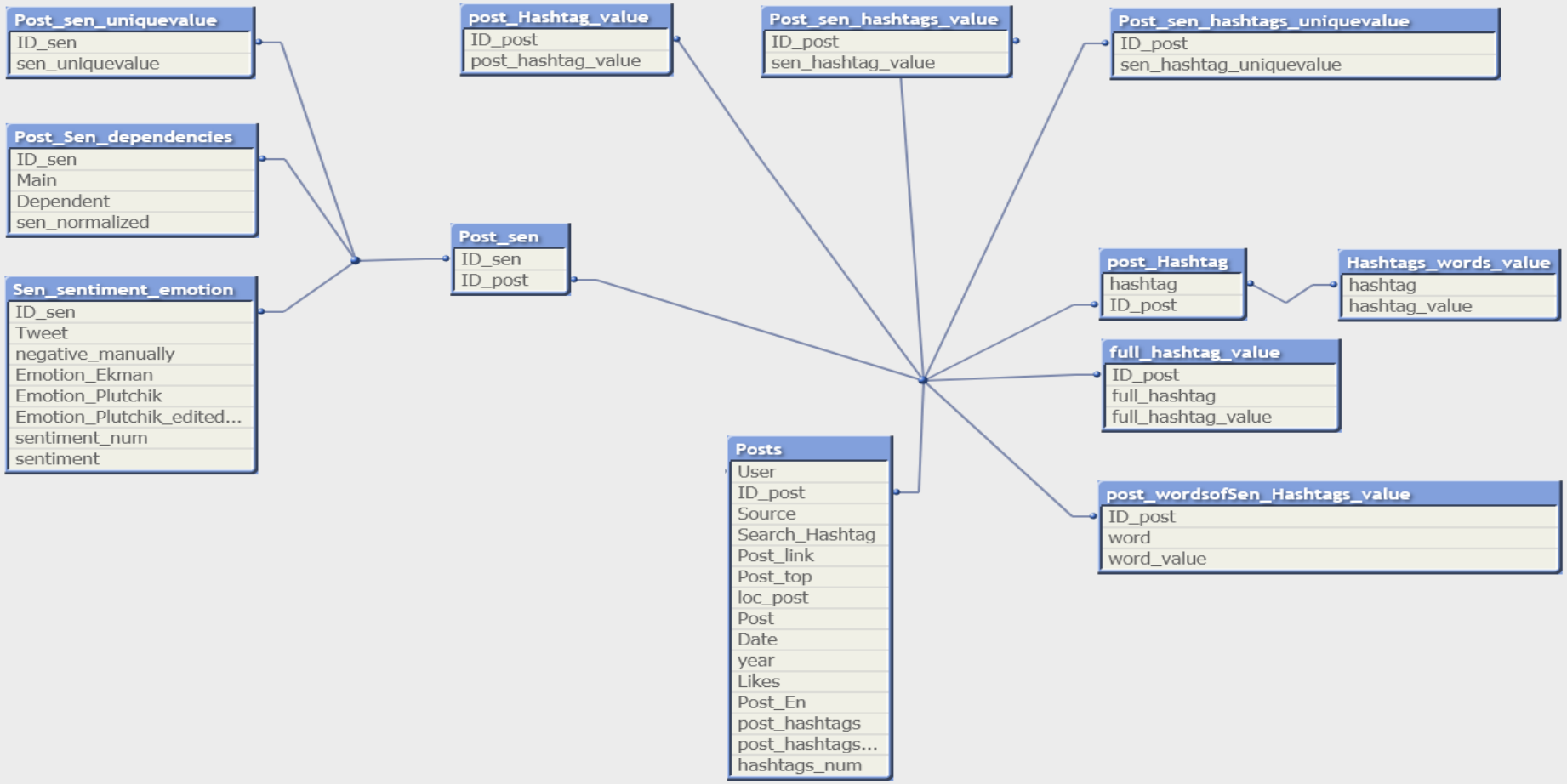
3. Specificeer het gebruikerstype: Iraans/Buitenlands, Gewone mens/Toerisme professionals
   - Extraheren van locaties en taal van de biografieën en berichten van de gebruikers

4. Emotieanalyse
   - Gebruik het Bert-model voor het inbedden

5. Sentimentanalyse in 5 niveaus (zeer negatief, ..., zeer positief)
   - Gebruik het Bert-model voor het inbedden

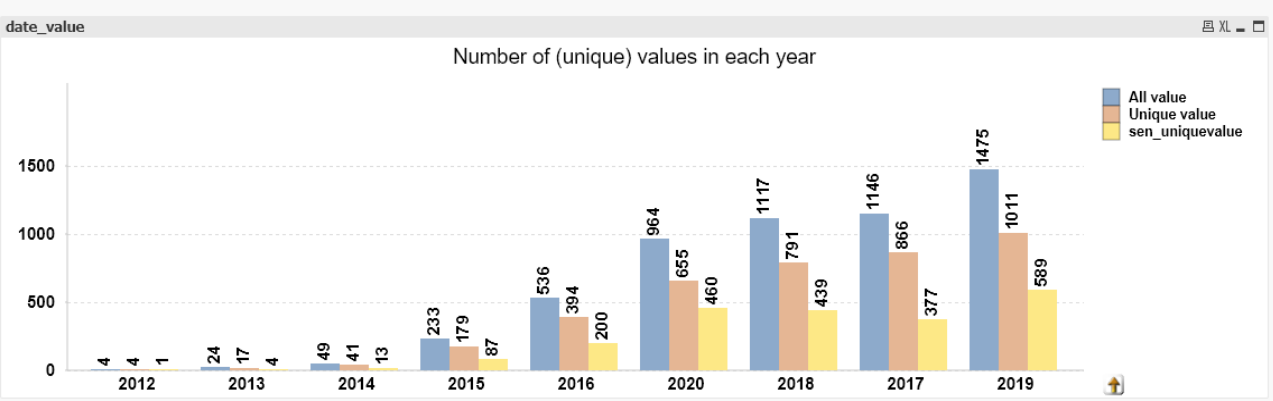
MySQL

Maak een relationele database met behulp van de datasets die in Python zijn gemaakt.

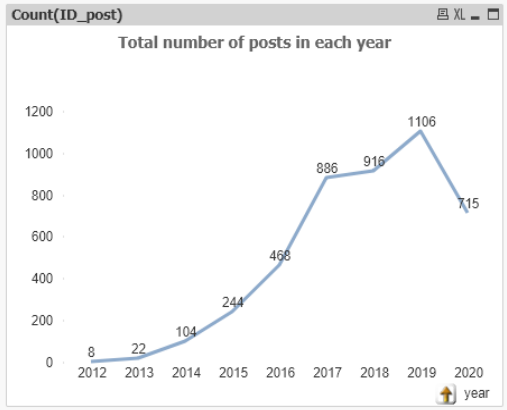


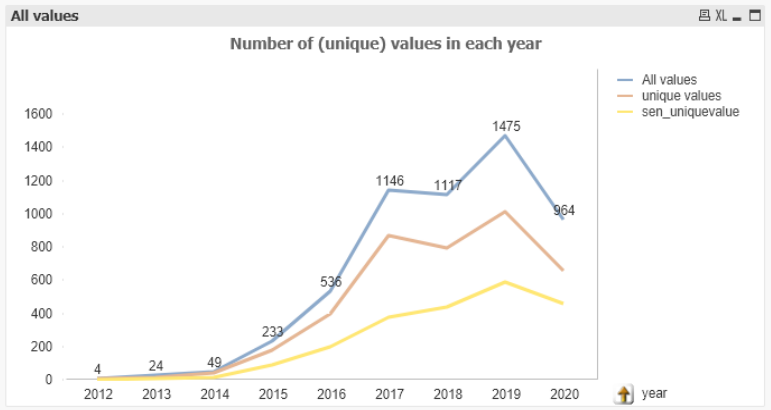
QlickView

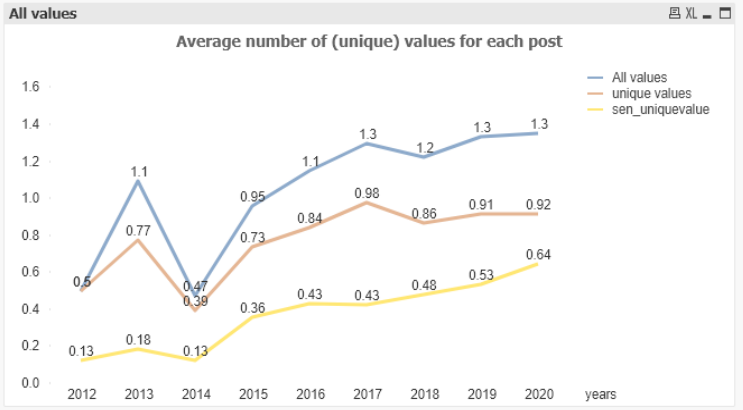
Haal queries op uit de database en visualiseer de analyse.

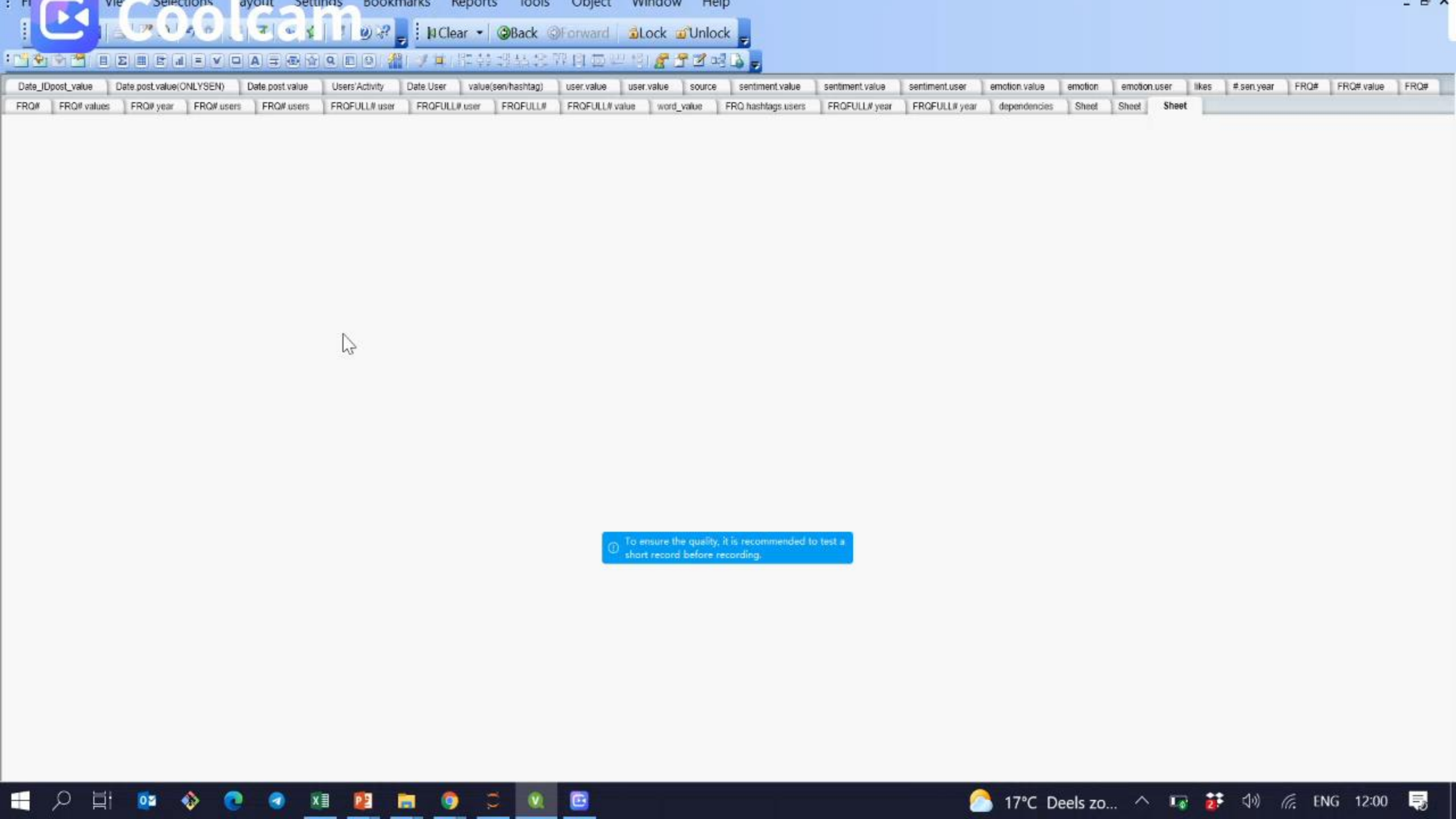


ID_post	sen_hashtag_uniquevalue	sen_hashtag_value	Date	sen_uniquevalue	hashtag_value	ID_sen
ID_post0	-	-	-	-	-	-
ID_post1	-	-	September 24, 2020	-	-	-
ID_post2	-	-	September 24, 2020	-	-	-
ID_post3	age	age	September 21, 2020	-	age	-
ID_post3	age	age	September 21, 2020	-	-	-
ID_post4	age	age	September 21, 2020	age	-	ID_sen1
ID_post4	age	age	September 21, 2020	ecological	-	ID_sen2
ID_post4	age	age	September 21, 2020	ecological	-	ID_sen3
ID_post4	age	ecological	September 21, 2020	age	-	ID_sen1
ID_post4	age	ecological	September 21, 2020	ecological	-	ID_sen2
ID_post4	age	ecological	September 21, 2020	ecological	-	ID_sen3
ID_post4	ecological	age	September 21, 2020	age	-	ID_sen1
ID_post4	ecological	age	September 21, 2020	ecological	-	ID_sen2
ID_post4	ecological	age	September 21, 2020	ecological	-	ID_sen3
ID_post4	ecological	ecological	September 21, 2020	age	-	ID_sen1
ID_post4	ecological	ecological	September 21, 2020	ecological	-	ID_sen2
ID_post4	ecological	ecological	September 21, 2020	ecological	-	ID_sen3
ID_post5	aesthetical	aesthetical	September 21, 2020	age	aesthetical	ID_sen4
ID_post5	aesthetical	aesthetical	September 21, 2020	age	-	ID_sen4
ID_post5	aesthetical	aesthetical	September 21, 2020	ecological	aesthetical	ID_sen5
ID_post5	aesthetical	aesthetical	September 21, 2020	ecological	aesthetical	ID_sen6
ID_post5	aesthetical	aesthetical	September 21, 2020	ecological	-	ID_sen5








Coolcam
Clear
Back
Forward
Lock
Unlock
Date_IDpost_value
Date.post.value(ONLYSEN)
Date.post.value
Users'Activity
Date.User
value(sen/hashtag)
user.value
user.value
source
sentiment.value
sentiment.value
sentiment.user
emotion.value
emotion
emotion.user
likes
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FRQ#
FRQ# values
FRQ# year
FRQ# users
FRQ# users
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FROFULL# user
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word_value
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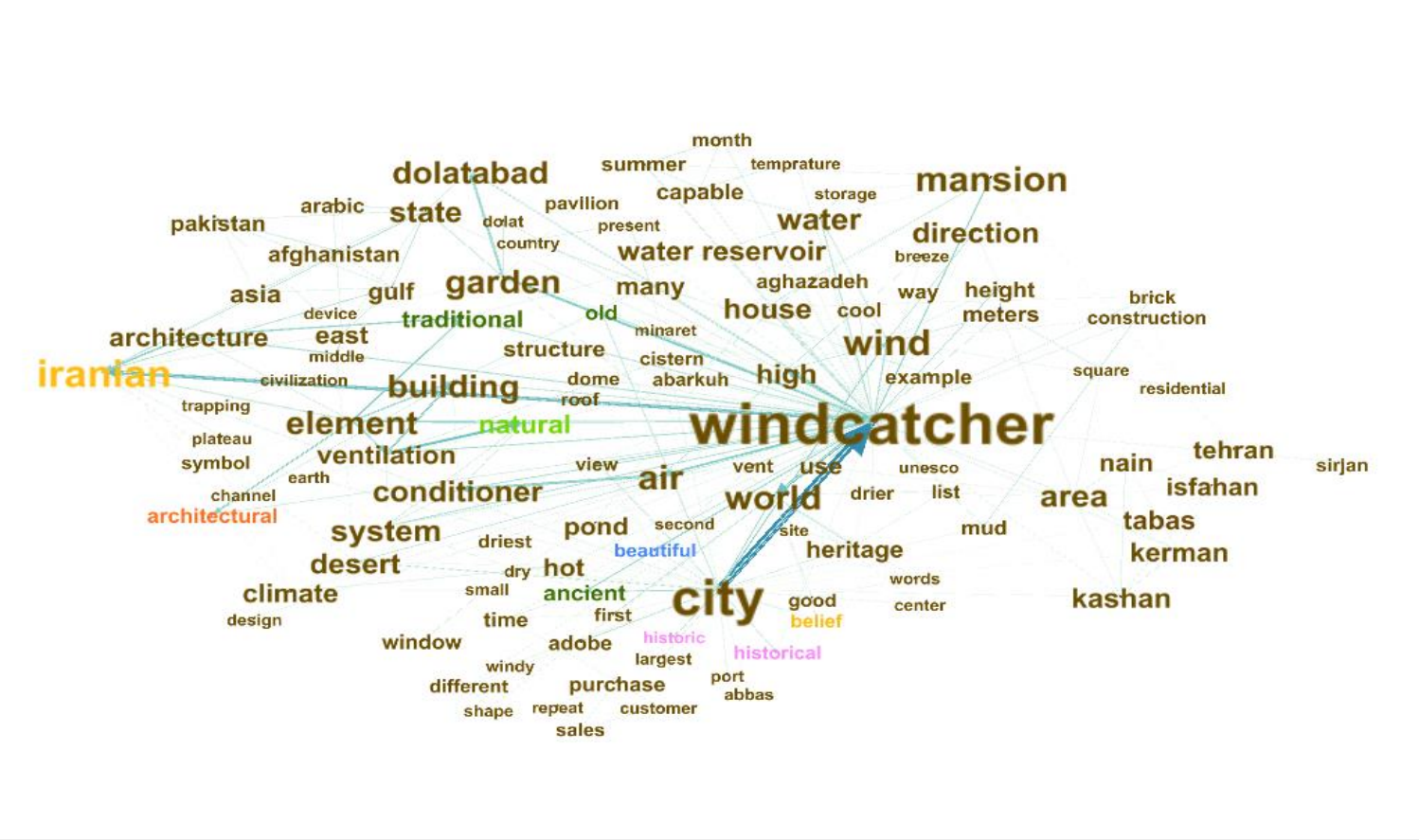
17°C
Deels zo...
ENG
12:00

Gephi

netwerkanalyse



Gephi 0.9.2 - Gephi_edges_10_Post_Sen_dependencies_Normalized_DELETE_yazd,iran.xlsx.gephi

File Vie Tools Windo Help

Preview

Data Table

Nodes Edges Configuration Add node Add edge Search/Replace Import Spreadsheet Export table More actions Filter: Id

Id	Label	Interval	category
ing	ing		attribute
lab	lab		attribute
trahy_grafyk	trahy_grafyk		attribute
college	college		attribute
graphic_design round_bottom_flask	graphic_design round_bottom_flask		attribute
explorers	explorers		attribute
tarykh_ayran	tarykh_ayran		attribute
mmary_snty	mmary_snty		attribute
mmary_ayran	mmary_ayran		attribute
ure	ure		attribute
sfr_bh_ yazd	sfr_bh_ yazd		attribute
yazd_ world	yazd_ world		attribute
tarykh_msvr	tarykh_msvr		attribute
ks_tarykhy	ks_tarykhy		attribute
ks_qdymy	ks_qdymy		attribute
travelouge	travelouge		attribute
ling	ling		attribute
oldcity	oldcity		age
repost	repost		attribute
ancien	ancien		attribute
tcity	tcity		attribute
pat	pat		attribute

Add column | Merge columns | Delete column | Clear column | Copy data to other column | Fill column with a value | Duplicate column | Create a boolean column from regex match | Create column with list of regex matching groups | Negate boolean values | Convert column to dynamic

15°C Nu regen ENG 13:22

Data Management & Analysis for Qualitative Data using NVIVO

Devimpact Institute

Aanpassing van de automatische thema-analyse:

Age

Historic

Social

Aesthetical

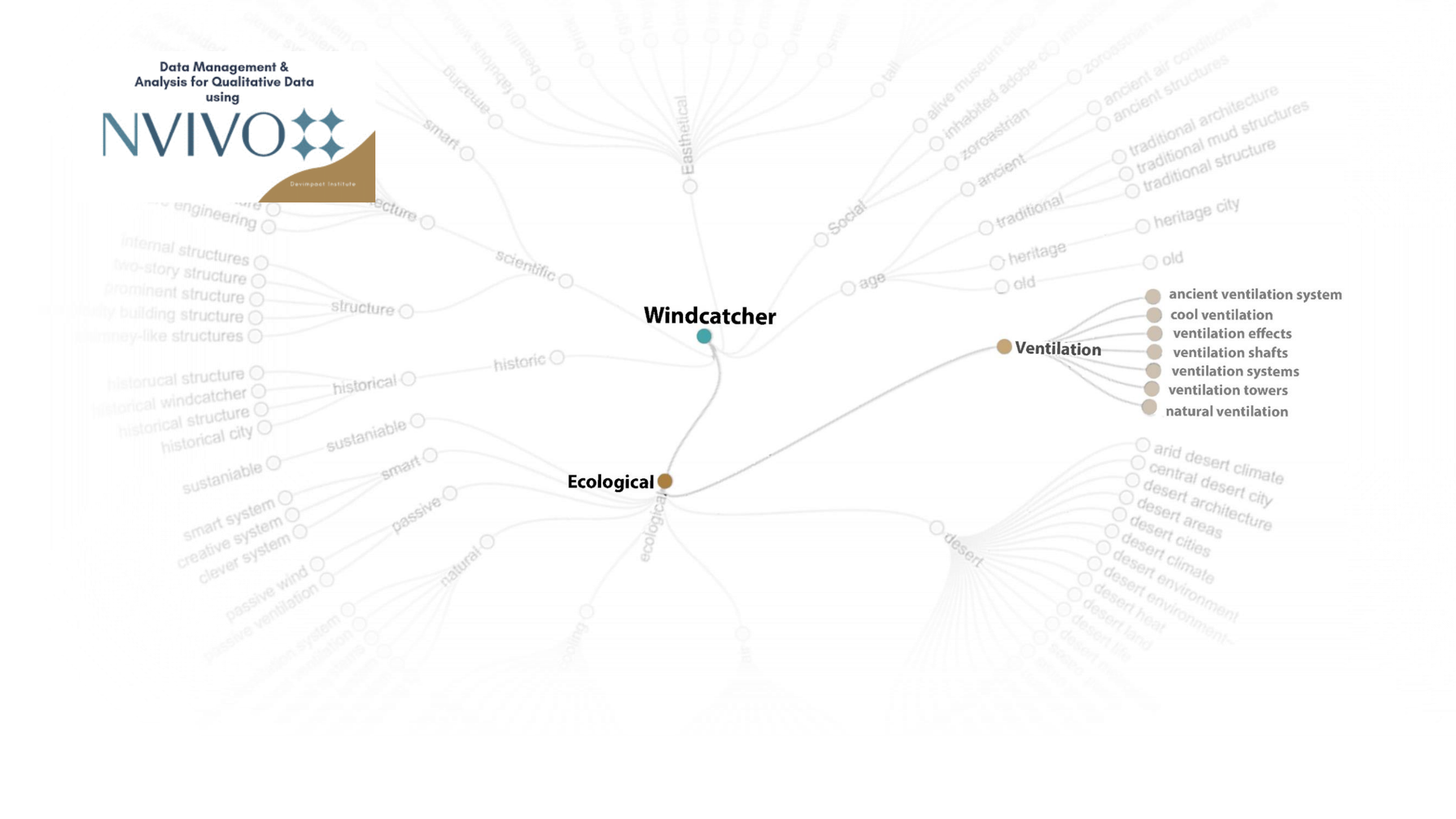
Ecological

Scientific

Data Management &
Analysis for Qualitative Data
using

NVIVO

Devimpact Institute



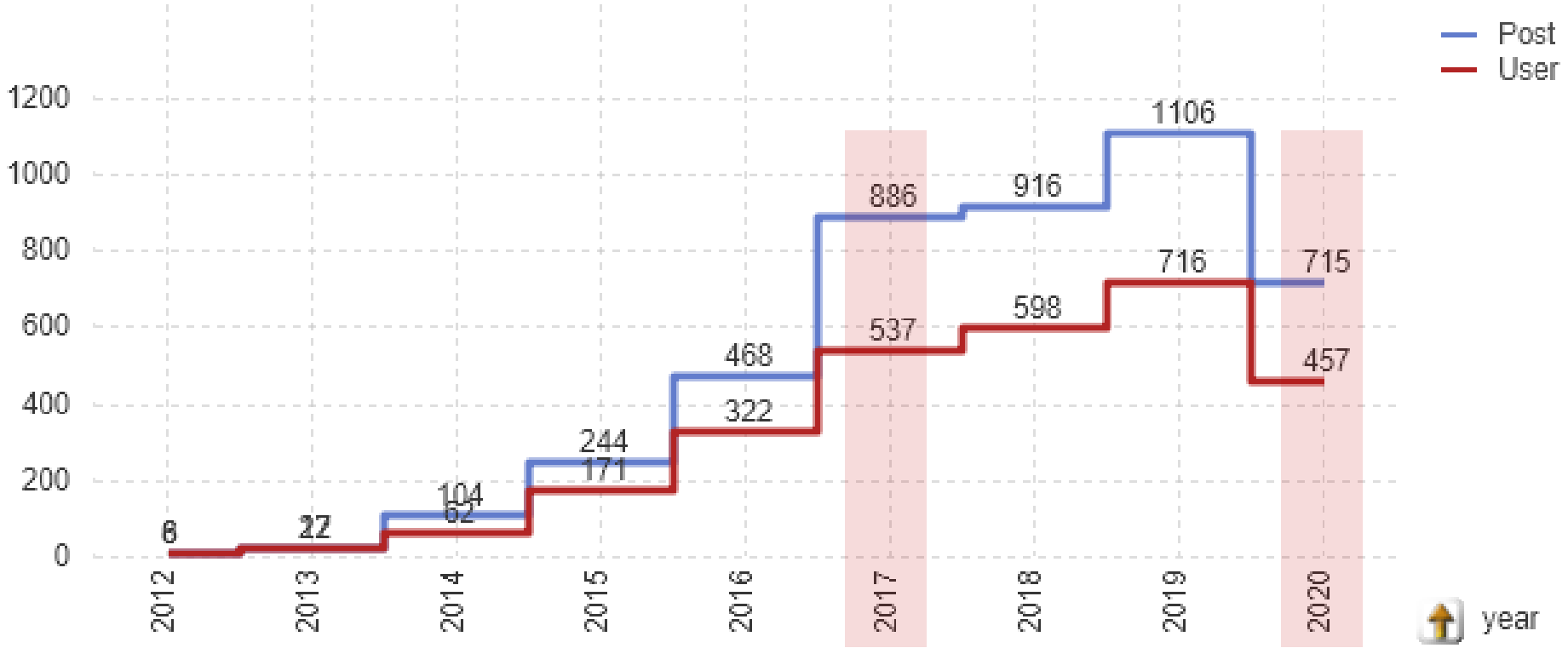
Sociale Media Analyse

Resultaat

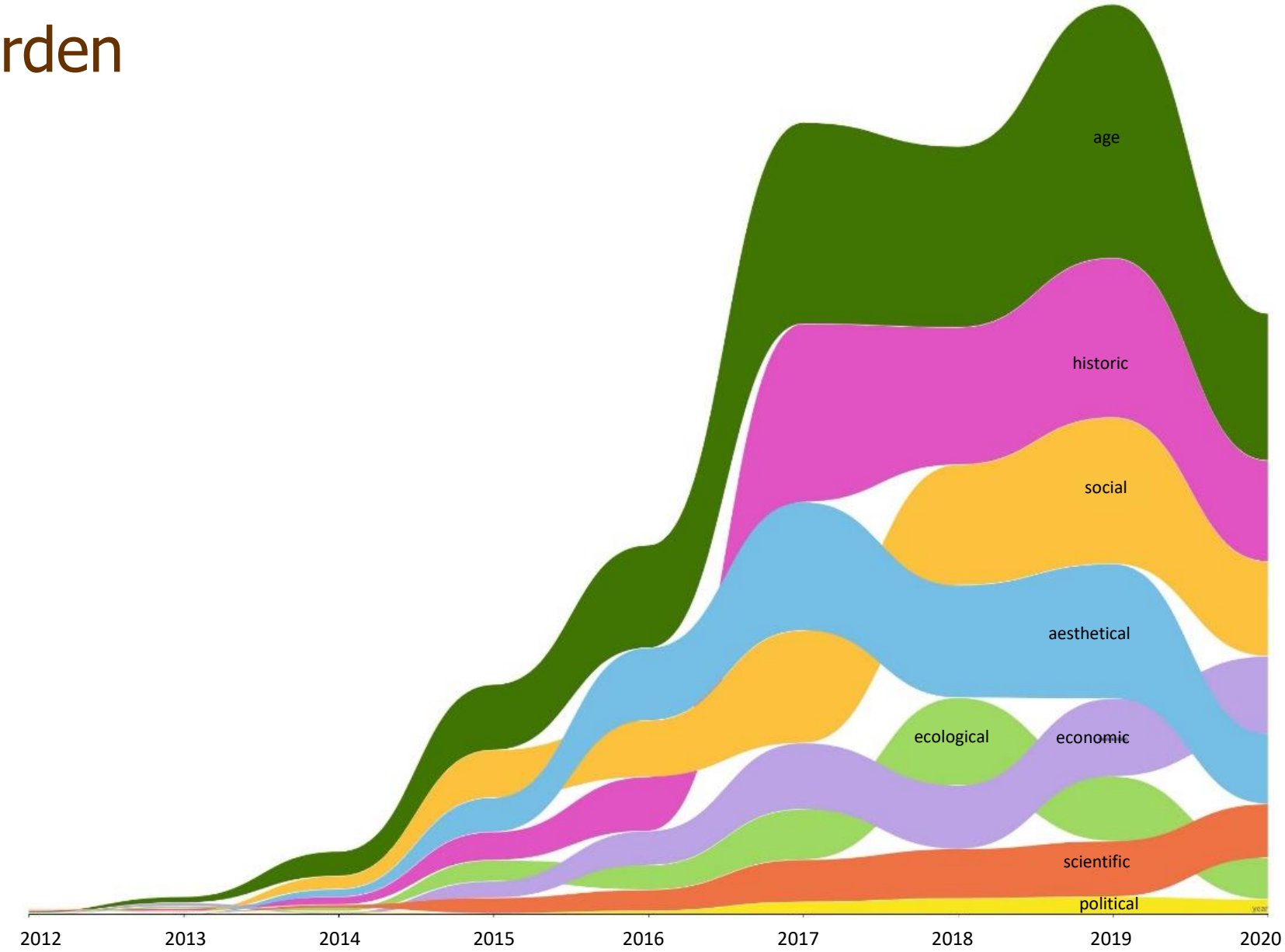
Analyse van waarden en attributen

Voorbeeldcitaten	Waarden	AI logica	Attributen
We're visiting one of the most **beautiful** viewpoint in the world! From Arthouse you can see a panoramic view of yazd and it's magic windcatcher and dome!	Aesthetical	beautiful (aesthetical)	viewpoint; panoramic view of Yazd; windcatcher; dome
On the roof top in my **old** city, "Yazd", a windcatcher above the roof watching the hole yard & house & city, … **Beautiful** view!	Aesthetical; Age	old (age) beautiful (aesthetical)	roof top; city; Yazd; windcatcher; roof; yard; house; view

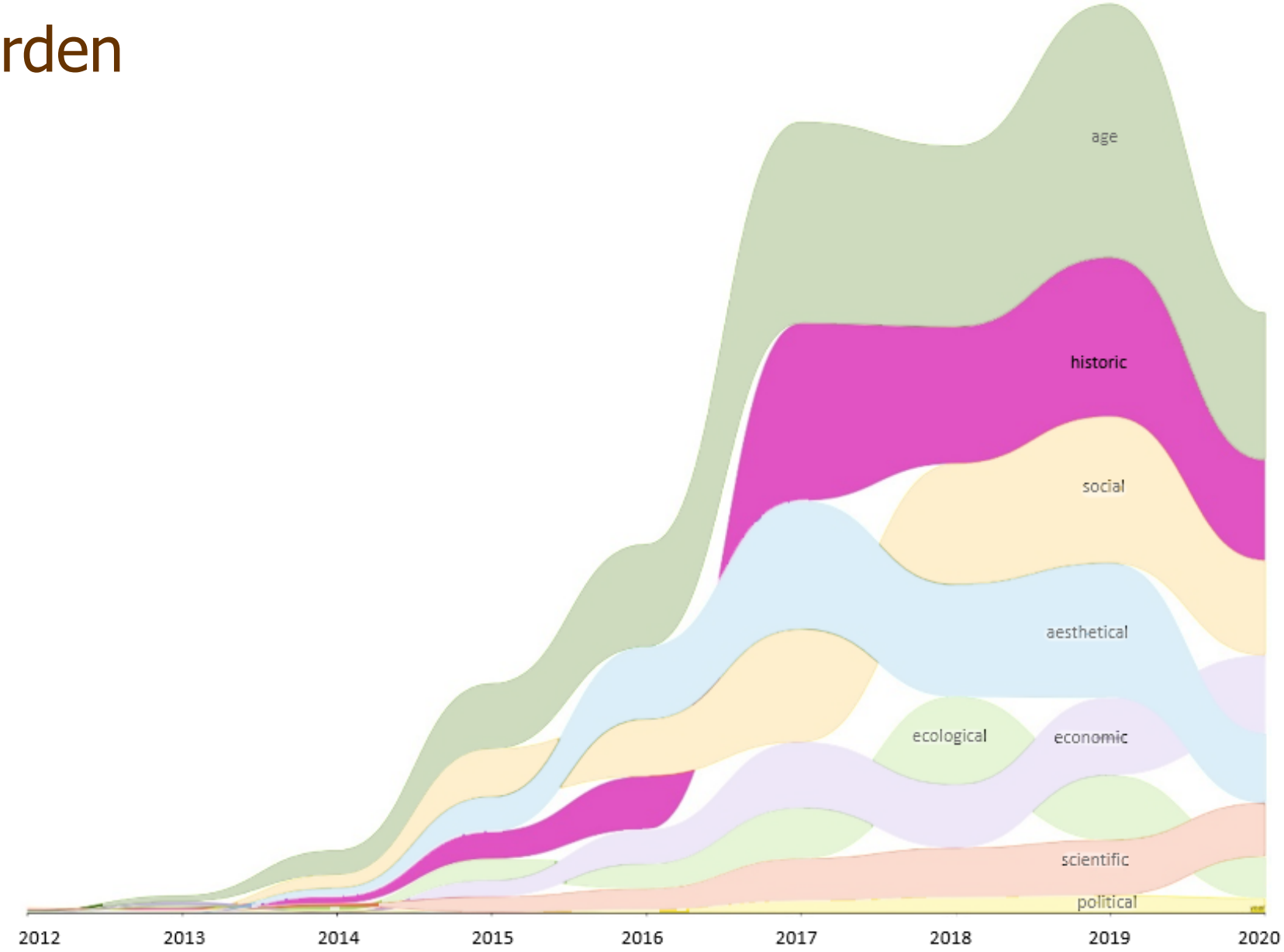
Analyse van algemene trends (datum, gebruiker, activiteit)



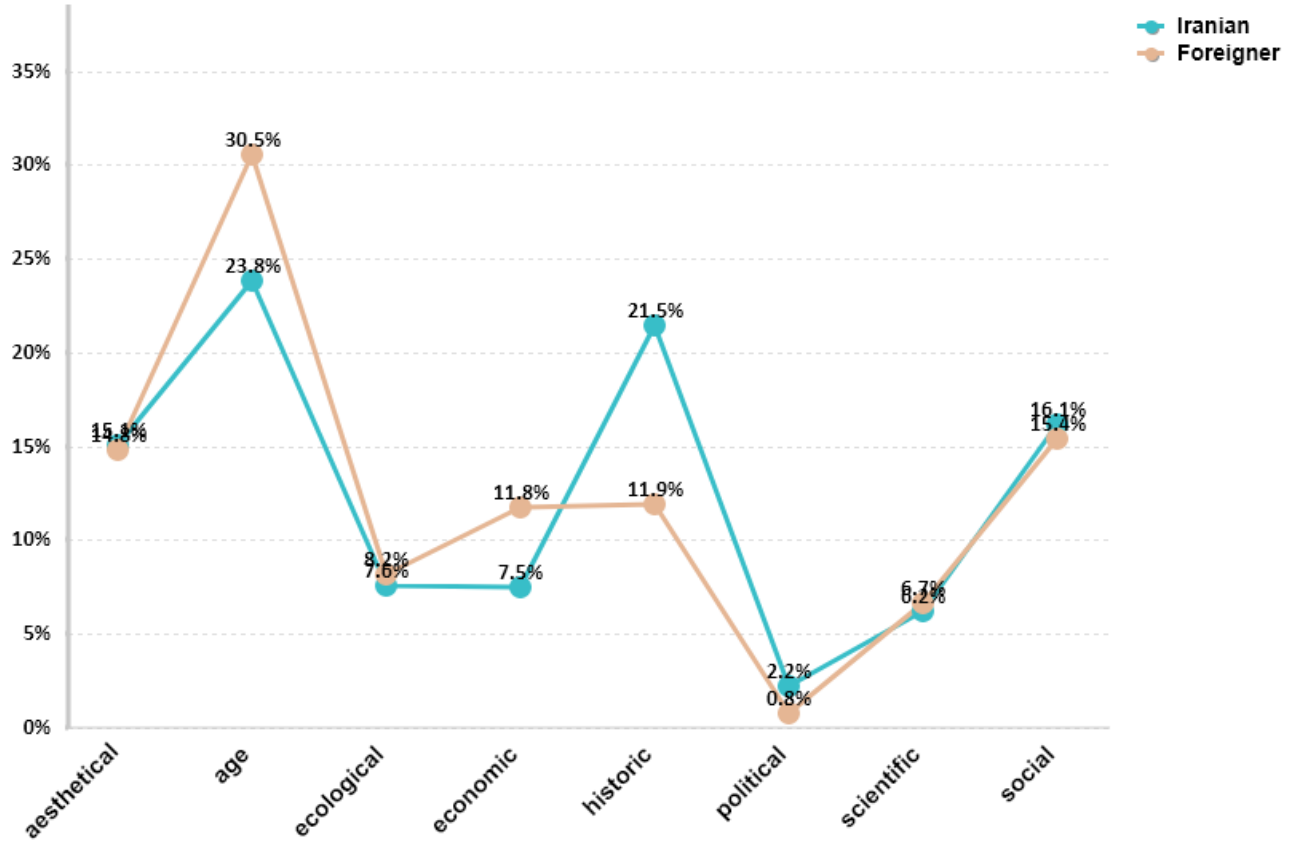
Analyse van waarden



Analyse van waarden

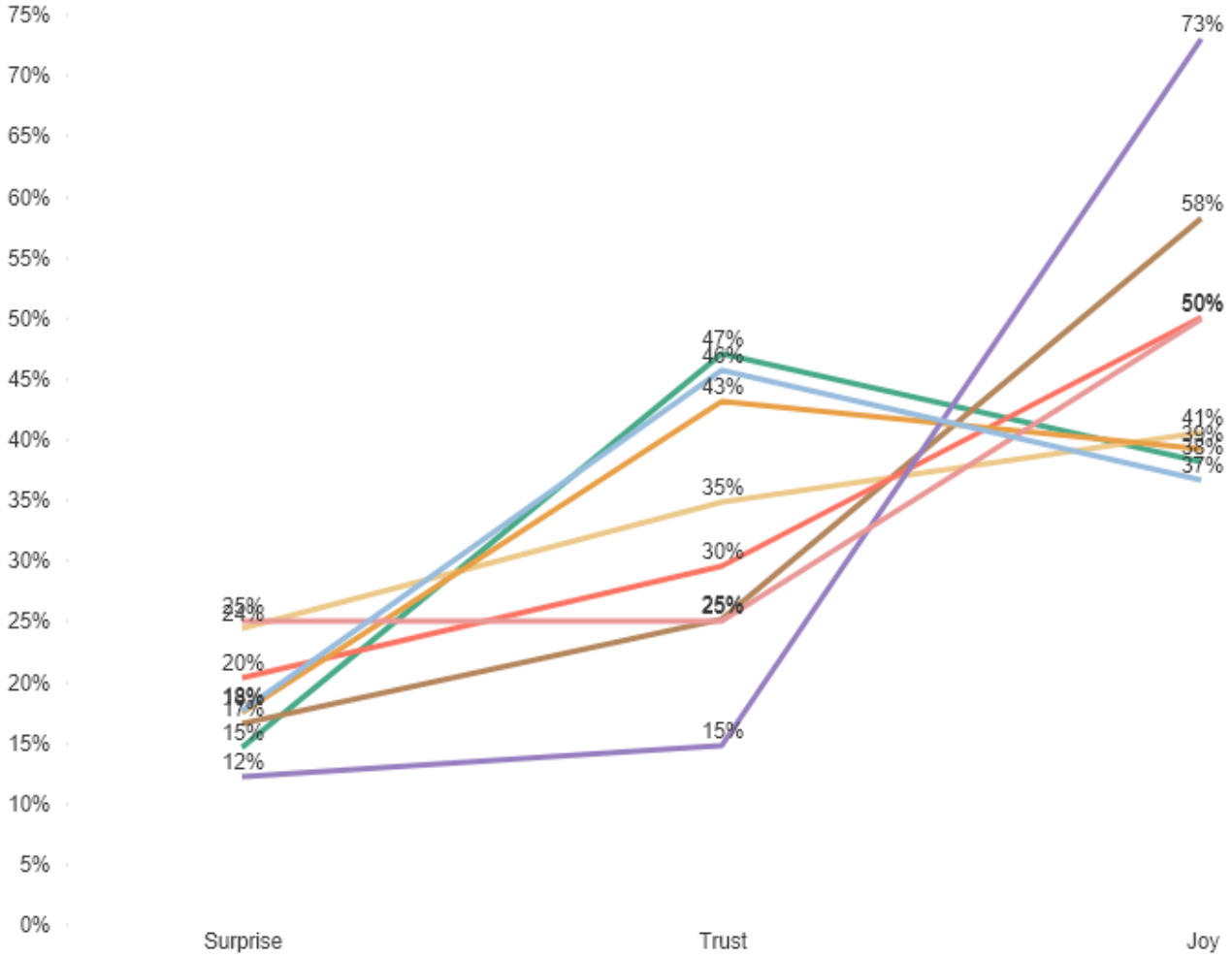


Analyse van waarden en gebruikers



Iraans	Buitenlanders
age	age
historic	social
social	aesthetical
aesthetical	historic
ecological	economic
economic	ecological
scientific	scientific
political	political

Analyse van waarden en emotie



Emotie

joy

trust

surprise

sadness

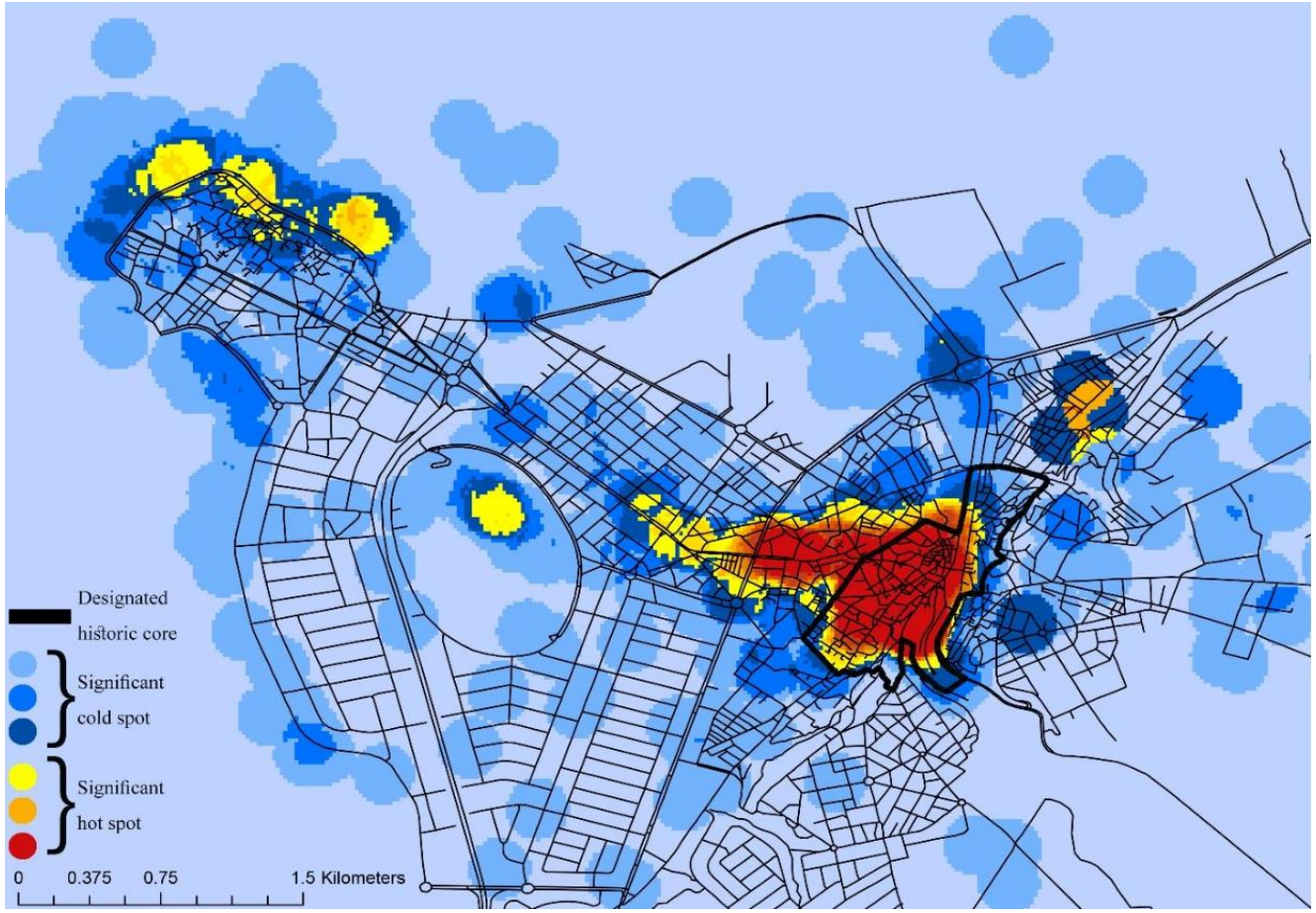
Disgust

Fear

Anger

anticipation

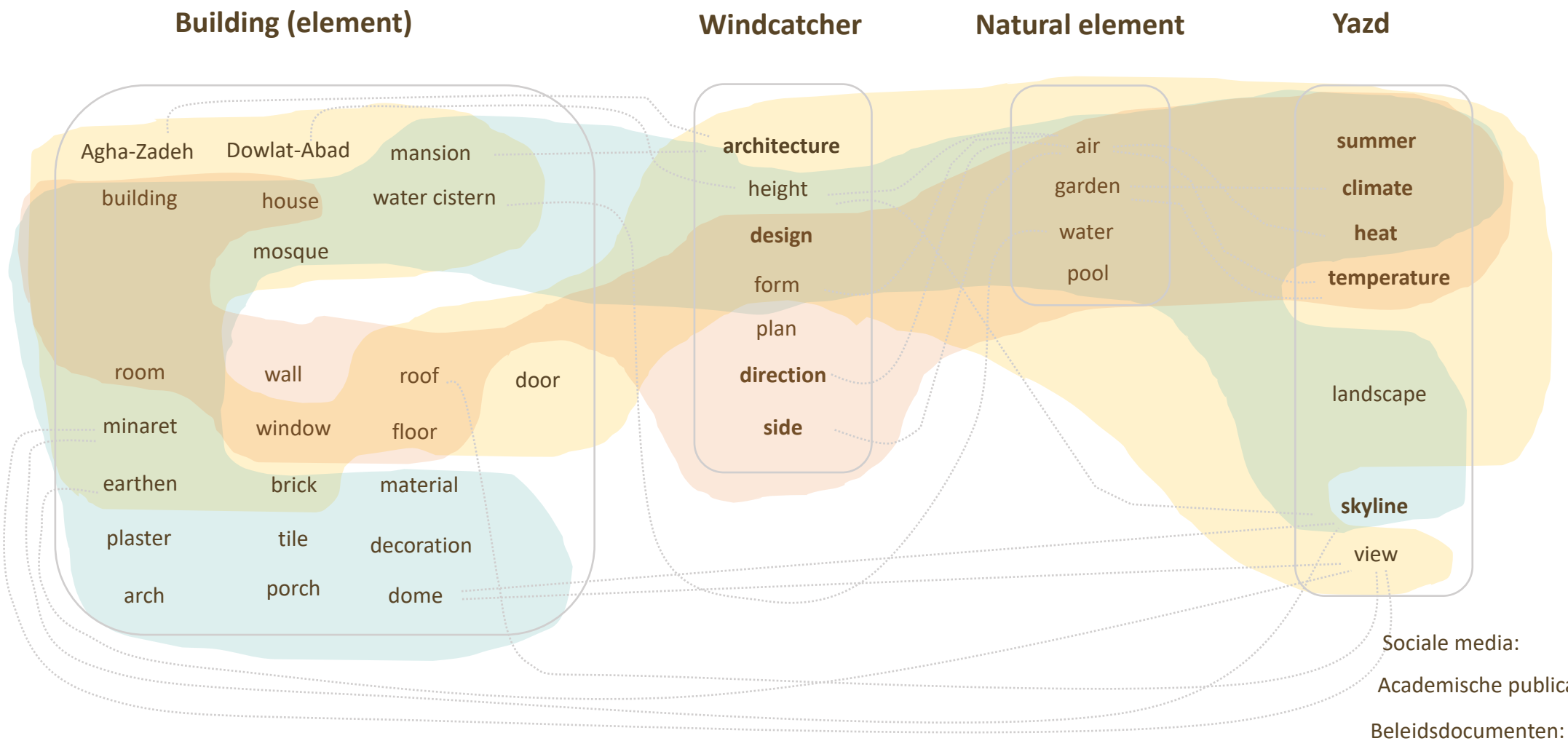
Andere Analyse



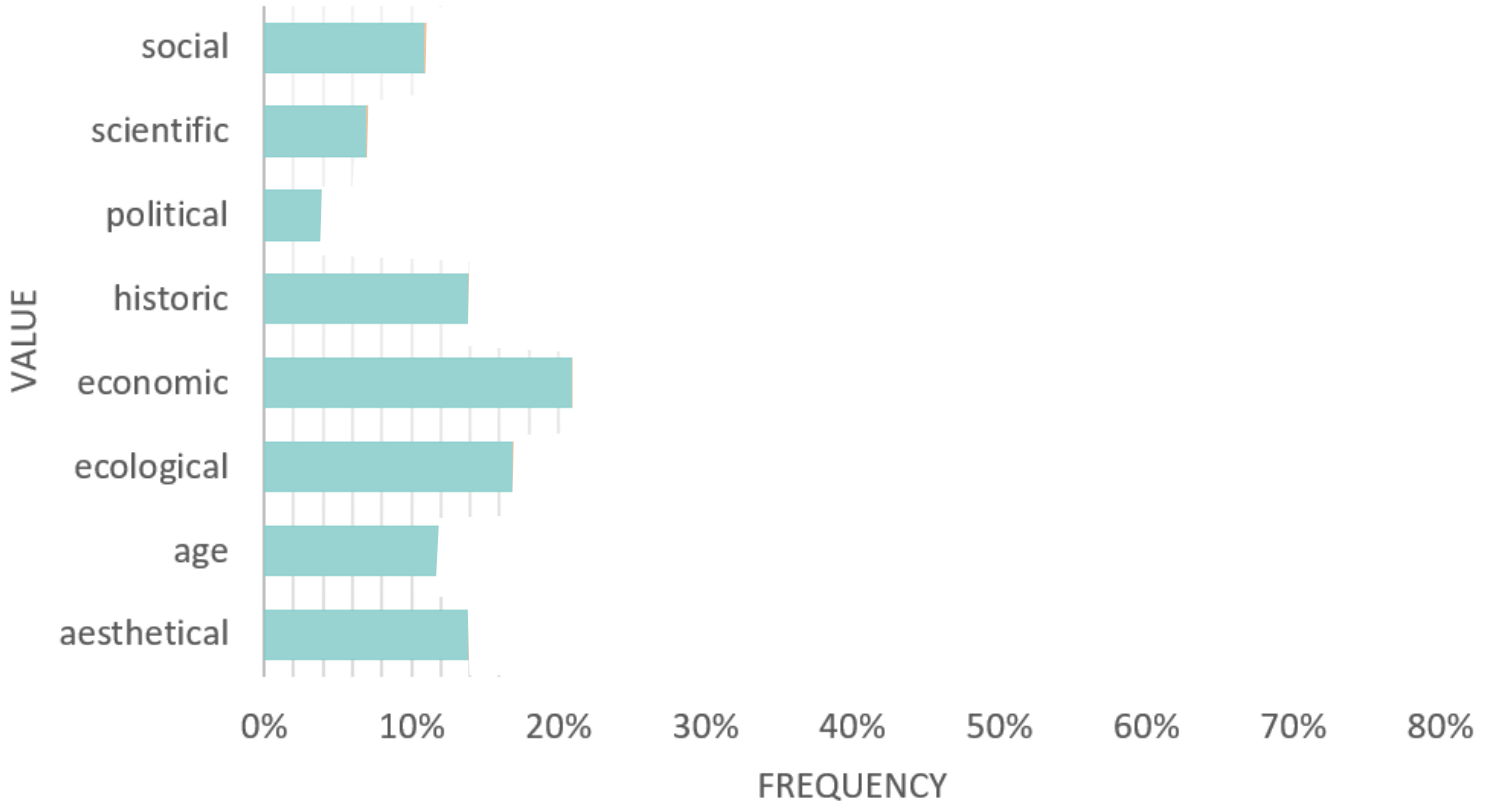
Sociale Media Analyse

Conclusie

Attributen


Building (element)
Windcatcher
Natural element
Yazd
Agha-Zadeh
Dowlat-Abad
mansion
building
house
water cistern
mosque
room
wall
roof
door
minaret
window
floor
earthen
brick
material
plaster
tile
decoration
arch
porch
dome
architecture
height
design
form
plan
direction
side
air
garden
water
pool
summer
climate
heat
temperature
landscape
skyline
view
Sociale media: Gebruikers
Academische publicatie: Experts
Beleidsdocumenten: Ambtenaren

Waarden



Sociale media: Gebruikers

Academische publicatie: Experts

Beleidsdocumenten: Ambtenaar

Conclusie

Agha-Zadeh

building

Dowlat-Abad

house

mosque

mansion

water cistern

room

minaret

earthen

plaster

arch

wall

window

brick

tile

porch

roof

floor

material

decoration

dome

door

architecture

height

design

form

plan

direction

side

air

garden

water

pool

summer

climate

heat

temperature

landscape

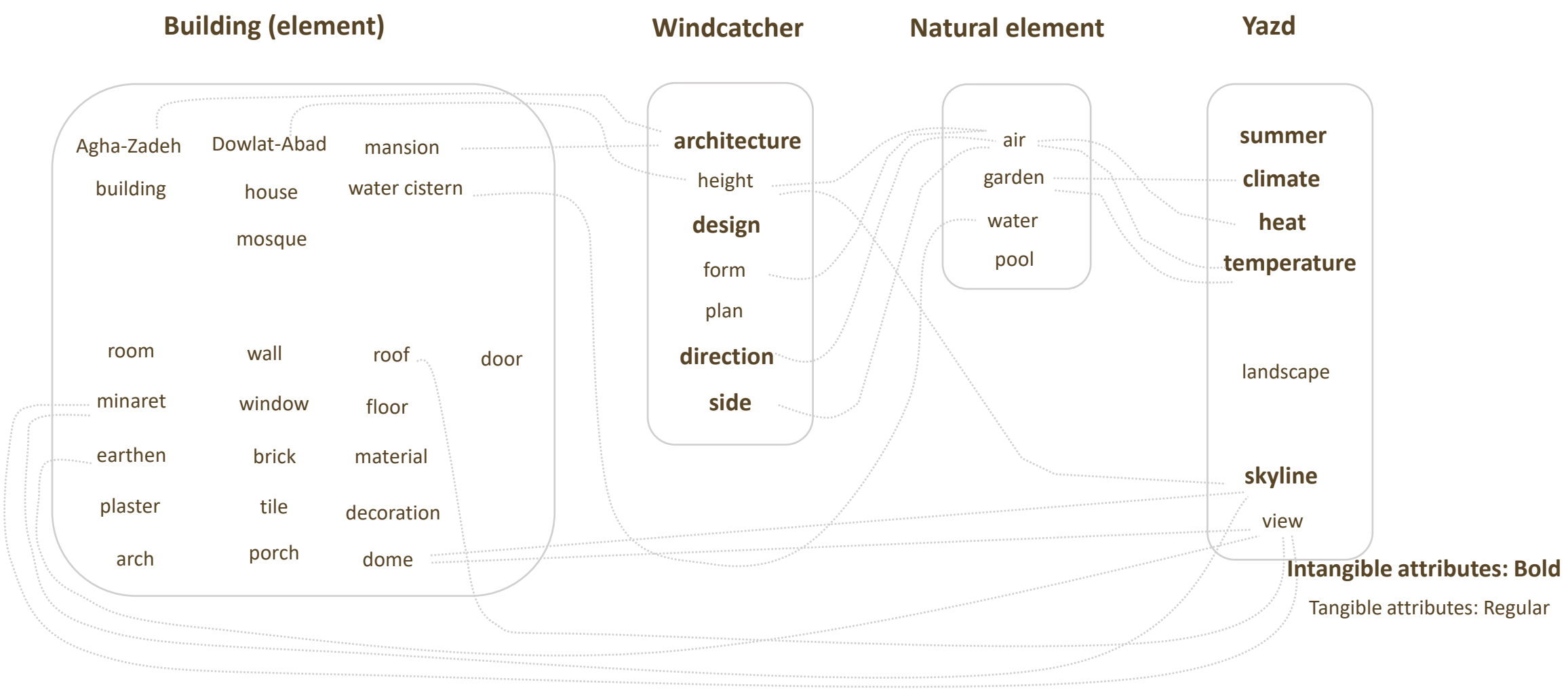
skyline

view

Intangible attributes: Bold

Tangible attributes: Regular

Conclusie


Building (element)
Windcatcher
Natural element
Yazd
Agha-Zadeh
Dowlat-Abad
mansion
building
house
water cistern
mosque
room
wall
roof
door
minaret
window
floor
earthen
brick
material
plaster
tile
decoration
arch
porch
dome
architecture
height
design
form
plan
direction
side
air
garden
water
pool
summer
climate
heat
temperature
landscape
skyline
view
Intangible attributes: Bold
Tangible attributes: Regular

Discussie

Discussie

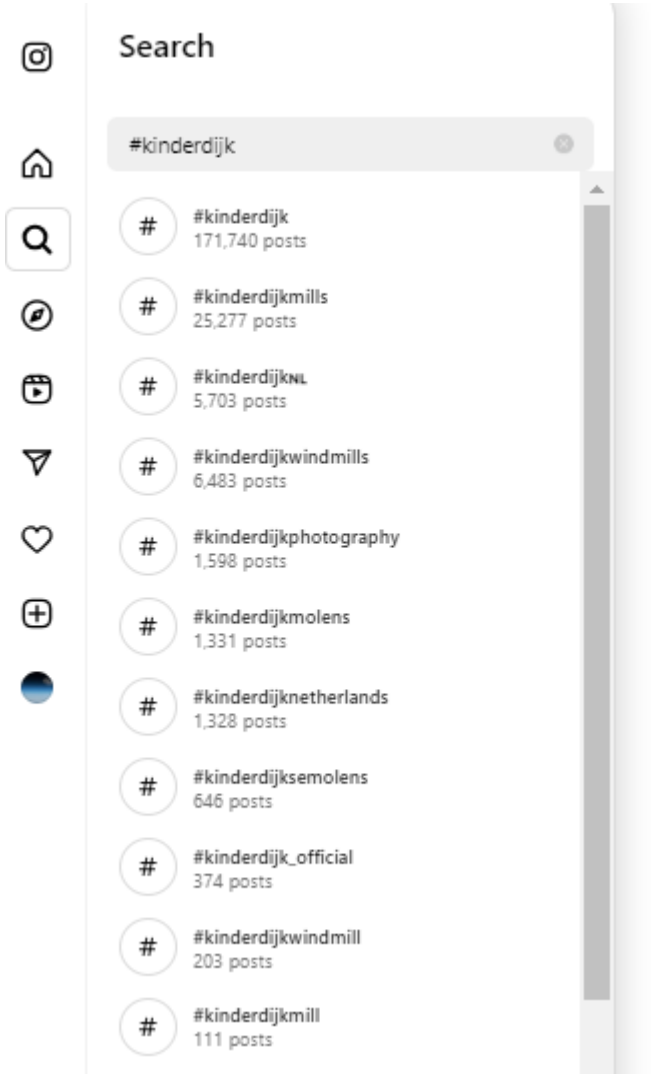
Hoe?

Waarom?

Wie?

Wanneer?

#kinderdijk


Search
#kinderdijk
#kinderdijk
171,740 posts
#kinderdijkmills
25,277 posts
#kinderdijkNL
5,703 posts
#kinderdijkwindmills
6,483 posts
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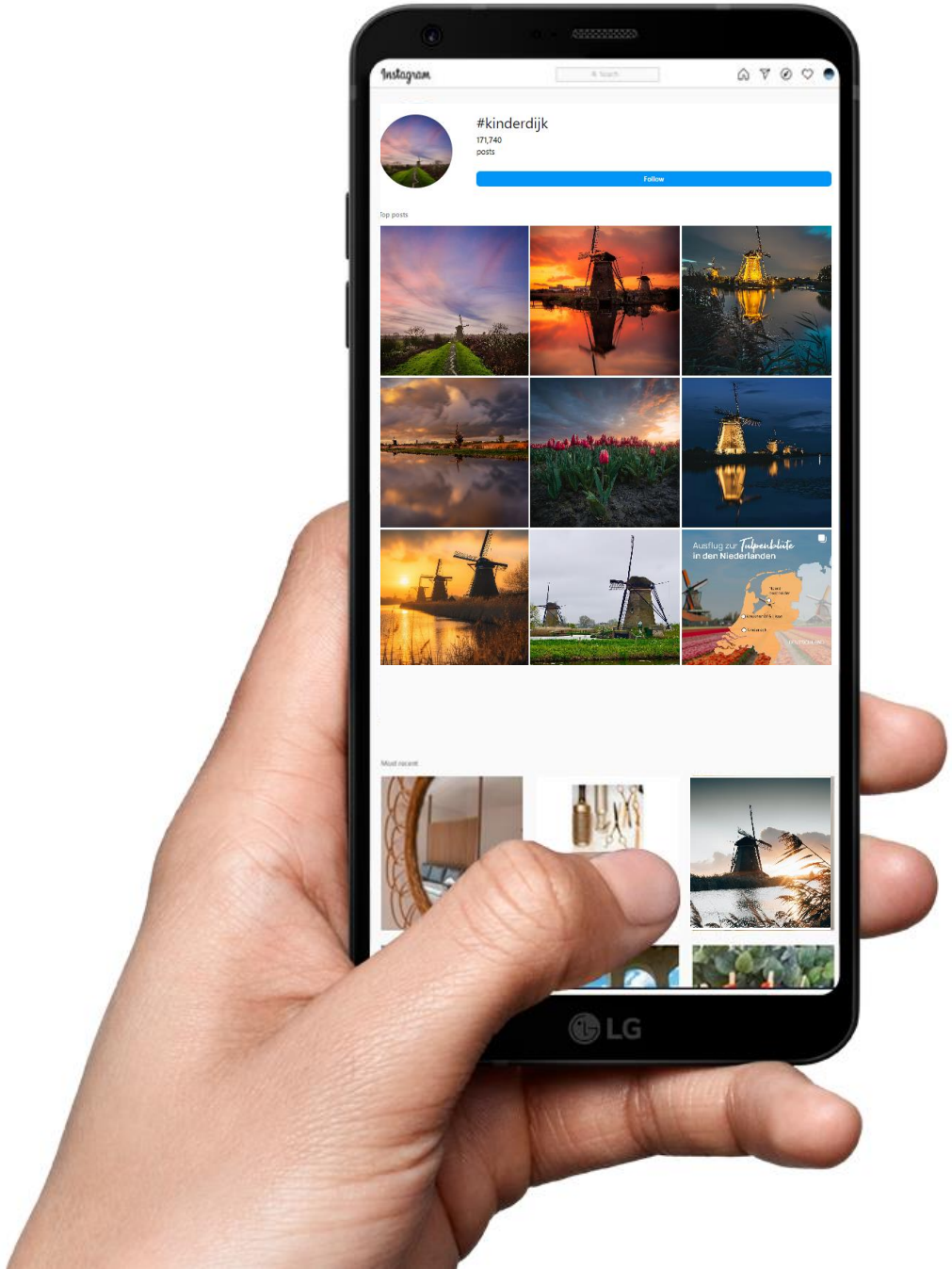
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