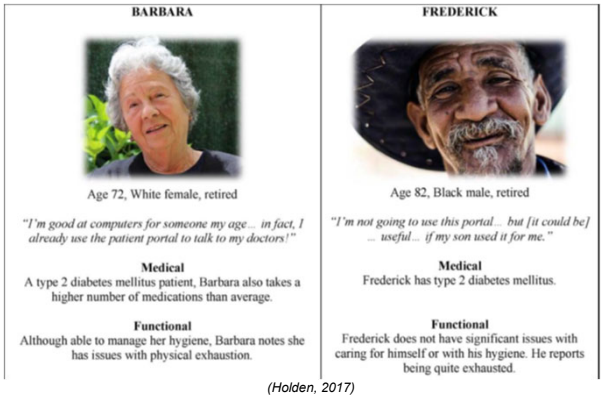
What is a Persona?

*"Personas are **not real people**, but they represent them throughout the design process. They are **hypothetical archetypes of actual users**. Although they are imaginary, they are defined with significant rigor and precision. […] Personas are defined by their **goals**."* - Alan Cooper



BARBARA

Age 72, White female, retired

"I'm good at computers for someone my age… in fact, I already use the patient portal to talk to my doctors!"

Medical
A type 2 diabetes mellitus patient, Barbara also takes a higher number of medications than average.

Functional
Although able to manage her hygiene, Barbara notes she has issues with physical exhaustion.

FREDERICK

Age 82, Black male, retired

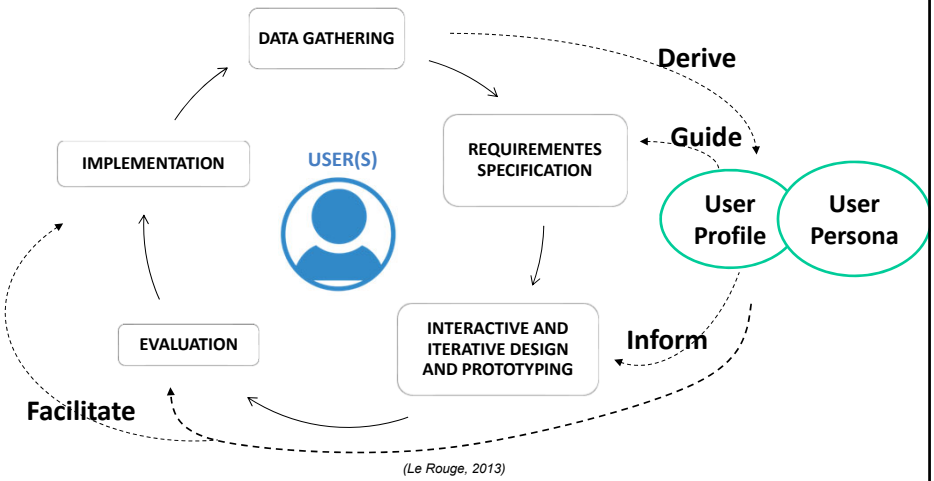
"I'm not going to use this portal… but [it could be] … useful… if my son used it for me."

Medical
Frederick has type 2 diabetes mellitus.

Functional
Frederick does not have significant issues with caring for himself or with his hygiene. He reports being quite exhausted.

(Holden, 2017)

Why Should We Use Personas?



(Le Rouge, 2013)

Persona Development

Persona Creation

- Goal definition
- Survey creation
- Survey dissemination

Data Collection

- Data preparation
- Clustering
- Statistical analysis

Data Analysis

- Persona Cards development
- Qualitative data collection

Personification

Persona Implementation

- Personas validation
- Implementation in real world situations

Implementation

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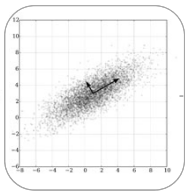
Data Analysis: Data Preparation

Quantitative

Ordinal — Ordered scale values

Age	Marital Status	Education
35	Married	Elementary
48	Engaged	Master Degree
66	Married	Master Degree
51	Single	High School

Nominal — One Hot Encoding



PCA
FAMD
MCA

Missing Data

Multiple-Answers Questions

- MCA: as PCA for qualitative variables
- FAMD: as PCA for quantitative variables and as MCA for qualitative variables.

Data is then reduced by means of either PCA, Factorial analysis of mixed data (FAMD) or Multiple correspondence analysis (MCA) based upon the data resulting from the questionnaire.

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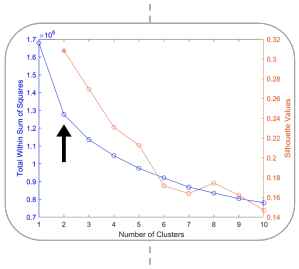
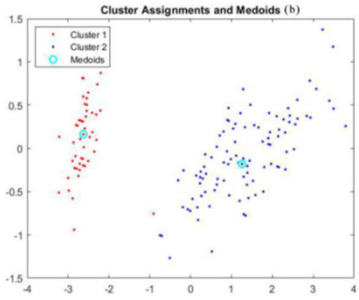
Data Analysis: Clustering

Total within sum of square distances



Average silhouette

K-medoids Clustering



K-medoids chooses data points as centers and can be used with arbitrary distances, while in k-means the centre of a cluster is not necessarily one of the input data points (it is the average between the points in the cluster).

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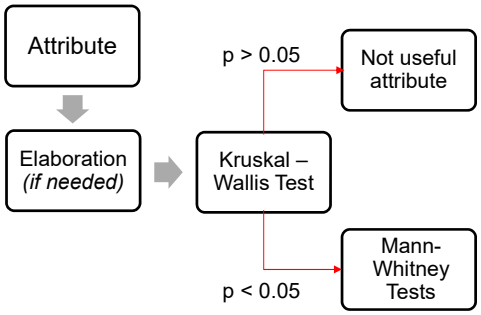
Data Analysis: Statistical analysis



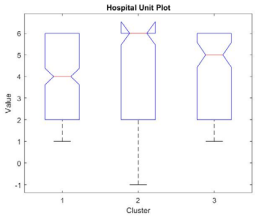


Table 3.1: Mann-Whitney tests between three clusters.

Test	p-value	Statistical Significance ($p < 0.0167$)
Cluster 1 vs Cluster 2	0.0061	Yes
Cluster 1 vs Cluster 3	0.2510	No
Cluster 2 vs Cluster 3	0.1471	No

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Persona Development - Personification

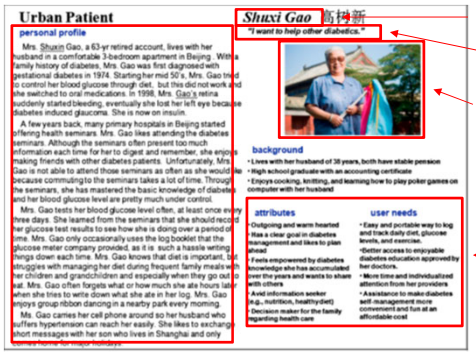
Personification

- Create persona cards based on clusters.
- Add images, photos and backgrounds to persona cards.

Inferred Information

Quantitative Information

Qualitative Information



Name

Quote

Photo

Goals & Indexes

(Le Rouge, 2013)

Personal Profile

Persona Implementation

Validation

Semi-structured interviews

Personas evaluation

Focus Group

Real-case scenarios

Implementation

How to convey information?

Why non-adherent ?

Which information?

Guide the development of Persuasive Design Approaches

Example: COVID-impact on health care professionals

Problems:

- Covid-19 outbreak has highly increased healthcare workers' workload.
- Increased stress and burnout syndrome risk.
- Psychological interventions are not tailored towards recipients.

Solution:

Develop a **method** to generate *healthcare workers personas* to tailor psychological support interventions.

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Example: COVID-impact on health care professionals

	CLUSTER 1 *(67)*	CLUSTER 2 *(38)*	CLUSTER 3 *(70)*	p-value
Sex	female	male	female	0,587
Age	46 *(37,5; 52)*	40 *(30; 47)*	44,5 *(34; 50)*	0,074
Children	yes [C2]	no [C1, C3]	yes [C2]	< 0,001
Marital status	married [C2]	engaged [C1, C3]	married [C2]	0,018
Protective measures at home	yes [C2]	no need [C1, C3]	not always available [C2]	< 0,001
COVID cases in ward	yes [C3]	yes [C3]	no [C1, C3]	0,015
Workload impact	76,77 *(70; 82,44)* [C2, C3]	68,94 *(58,22; 76,67)* [C1, C3]	51,11 *(43,33; 57,78)* [C1, C2]	< 0,001
Stress	80 *(64,63; 95)* [C3]	70 *(60; 85)* [C3]	60 *(52,5; 75)* [C1, C2]	< 0,001
Maugeri Stress Index	51 *(44; 60,5)* [C3]	55,5 *(51; 63)*	57 *(51; 64)* [C1]	< 0,001
Maslach Burnout Inventory	16 *(12; 20)* [C2, C3]	12 *(8; 18)* [C1, C3]	8 *(5; 13)* [C1, C2]	< 0,001
Impact of Event Scale	38 *(27; 49,75)* [C2, C3]	25 *(15;44)* [C1]	20 *(12; 31)* [C1]	< 0,001
Patient Health Questionnaire	5 *(4; 8,75)* [C2, C3]	4 *(2; 6)* [C1]	3 *(2; 5)* [C1]	< 0,001

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Example: COVID-impact on health care professionals

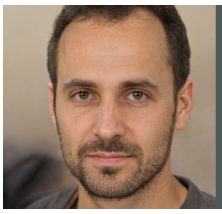
Marianna Female 42 Nurse

ABOUT

Marianna is a 42 years old nurse. She is a married woman who lives with her family. She has a child, a male elementary schooler. At home she does not always uses protective measures to avoid spreading the infection, as she does not always have them available. At work she is quite stressed, as her workload has increased during the pandemic. She has low risk of developing PTSD, and does not shows symptoms of anxiety and depression. Furthermore, she is at low risk of developing burnout, and has a good deal of knowledge about it.

INDEXES

Workload Impact	51.11
Stress	60
Maugeri Stress Index (MASI)	57
Maslach Burnout Inventory (MBI)	8
Impact of Event Scale (IES)	20
Patient Health Questionnaire (PHQ)	3
Burnout Knowledge	4



Alessandro Male 36 Nurse

ABOUT

Alessandro is a 36 years old nurse. He is an engaged man who lives by himself in a small apartment. He has no children, but he might want some in the near future. At home he does not need protective measures. At work he is very stressed, as his workload has greatly increased during the pandemic. Furthermore, he currently has COVID-19 cases at his ward. He has a medium risk of developing PTSD, and shows mild symptoms of anxiety and depression. Furthermore, he is at risk of developing burnout, but has a good deal of knowledge about it.

INDEXES

Workload Impact	68.94
Stress	70
Maugeri Stress Index (MASI)	55.5
Maslach Burnout Inventory (MBI)	12
Impact of Event Scale (IES)	25
Patient Health Questionnaire (PHQ)	4
Burnout Knowledge	4

Elisa Female 49 Nurse

ABOUT

Elisa is a 49 years old nurse. She is a married woman who lives with her family. She has a child, a female high-schooler. At home she always uses personal protective equipment to avoid spreading the infection, as she has them available. At work she is very stressed, as her workload has greatly increased during the pandemic. Furthermore, she currently has COVID-19 cases at her ward. The implications of this situation are taking a huge toll on her mind, as she is showing severe symptoms of PTSD, anxiety and depression. She is at a very high risk of developing burnout, however she knows quite a lot about it.

INDEXES

Workload Impact	76.77
Stress	80
Maugeri Stress Index (MASI)	51
Maslach Burnout Inventory (MBI)	16
Impact of Event Scale (IES)	38
Patient Health Questionnaire (PHQ)	5
Burnout Knowledge	4

Photos randomly generated by AI at: thispersondoesnotexist.com

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Learning objectives

1) To understand the meaning of patient empowerment, engagement and enablement, how to measure them and relevant barriers

2) To learn the basics of user characterization and Persona creation

3) To explore the concept of empowered patient

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