

Users Psychological Profiles for Leisure Activity Recommendation: User Study

Laboratoire d'InfoRmatique en Image et Systèmes d'information

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Motivation: Number of Leisure Activities

26/07/2017

	Chicago, USA	Vancouver, Canada	Leeds, UK
Meetup.com	133	79	41

meetup

31 Events

31/08/2017

as of 26/07/2017

	Chicago, USA	Vancouver, Canada	Leeds, UK
Meetup.com	3	2	2
Facebook	14	22	13
Couchsurfing	2	-	-


couchsurfing


550,000
EVENTS

Key Question

Do users' psychological profiles influence their selection of leisure activities?

no



Forget it



yes

- ➔ Can we **implicitly acquire** the psychological profiles from users' behavioural data?
- ➔ Can we **make use** of them **for recommendation**?

Background Axis

- Problem definition

Activity/Event
Recommendation

- Personality Traits (Big5)
- Orientations to Happiness (OTH)
- Fear of Missing Out (FoMO)

Psychological
Profiles

Activity / Event Recommendation

What We Have

- Set of Activities, $\mathcal{A} = \{a_i\}_{i=1,N}$:
 $a = \langle l, t, \delta, c, d \rangle$

$l = (x, y, z)$ – location

$t = (t_s, t_e)$ – time window (start & end)

$\delta \leq (t_e - t_s)$ – duration

$c = (c_1, c_2, \dots, c_k)$ – vector of categories

d – textual description

- Set of Users, $U = \{u_j\}_{j=1,M}$

- Users' History, \mathcal{M} :

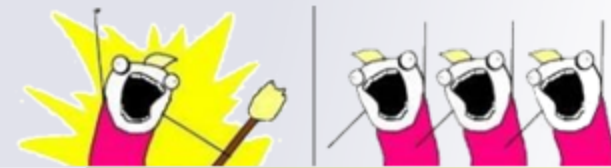
$$\mathcal{M}_{i,j} = \begin{cases} 1, & j^{\text{th}} \text{ user joined } i^{\text{th}} \text{ activity} \\ 0, & \text{otherwise} \end{cases}$$

What We Want

- Activity Desirability for a User :

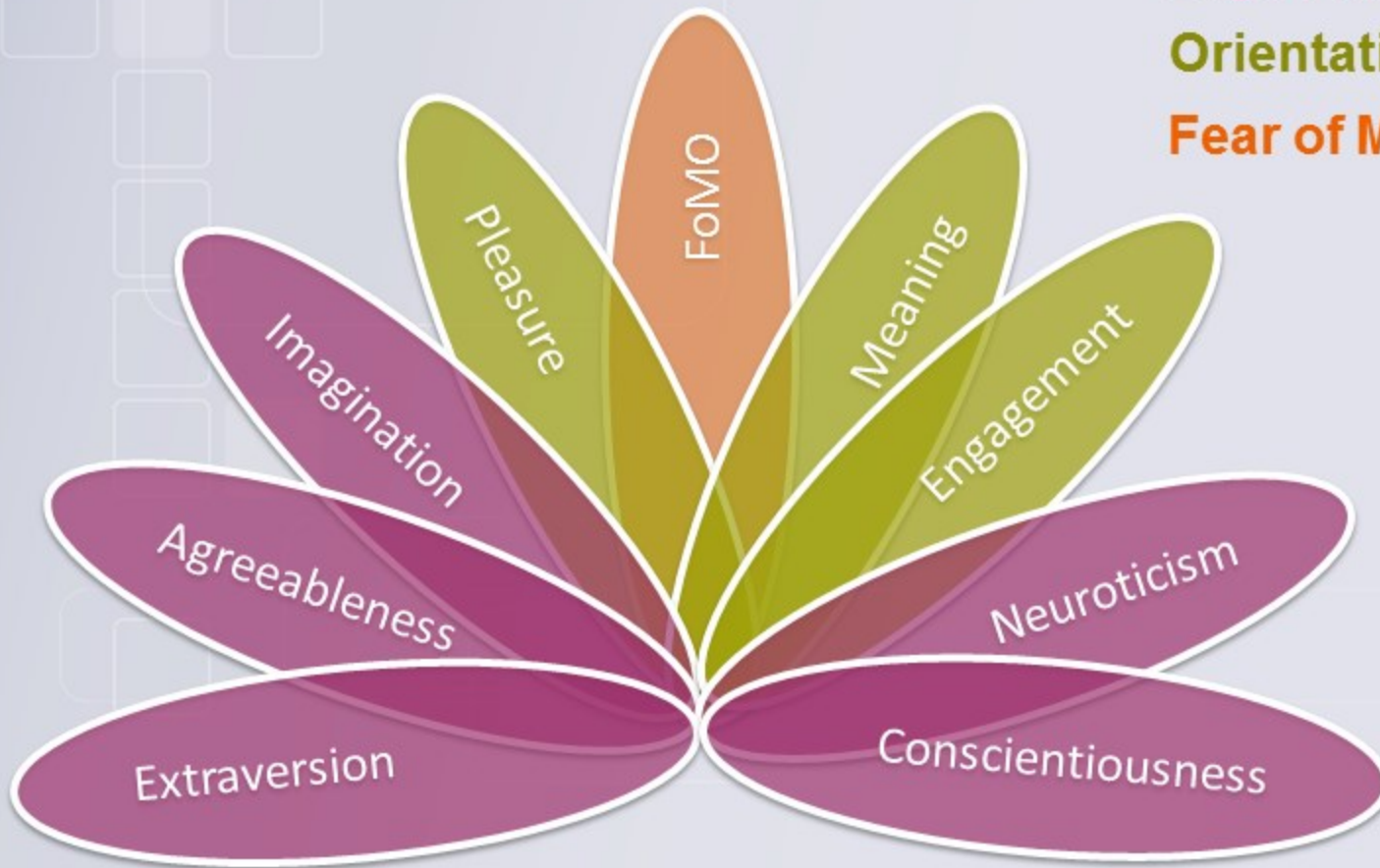
- $r(a, u), r: \mathcal{A} \rightarrow \mathbb{R}^+$

- Find a the most desirable activities for $\forall u \in U$



User's Psychological Profiles or Individuality

Big5 Personality Traits
Orientations to Happiness
Fear of Missing Out

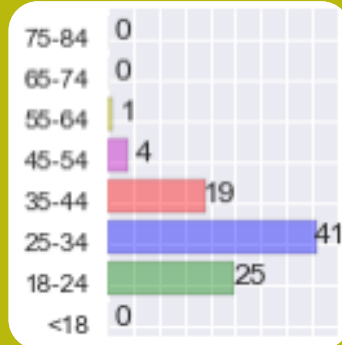


User Study

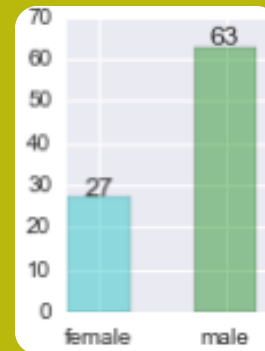


90
participants
+ **84**
abandoned

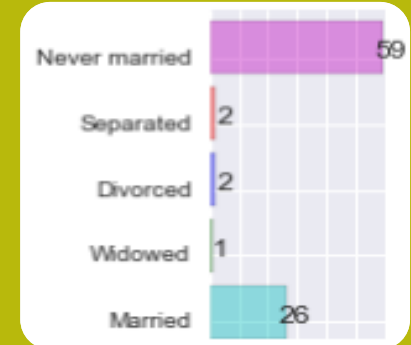
Demographics



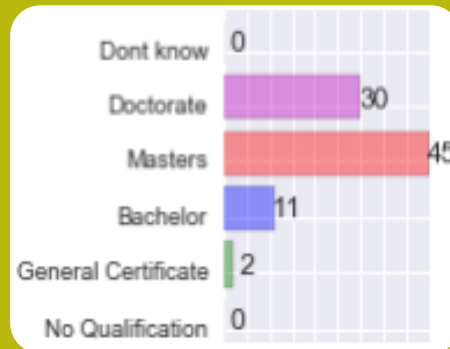
Age group



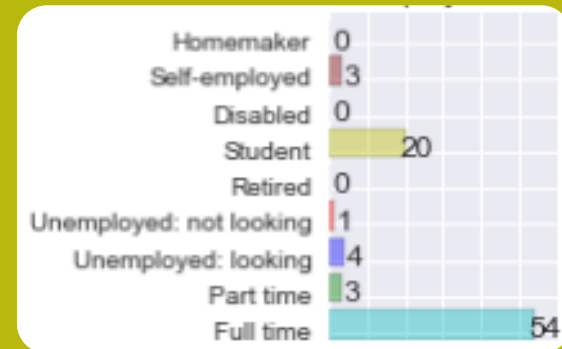
Sex



Marital status



Education level



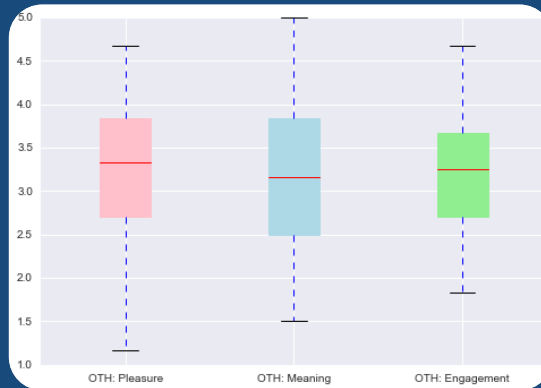
Employment

User Study

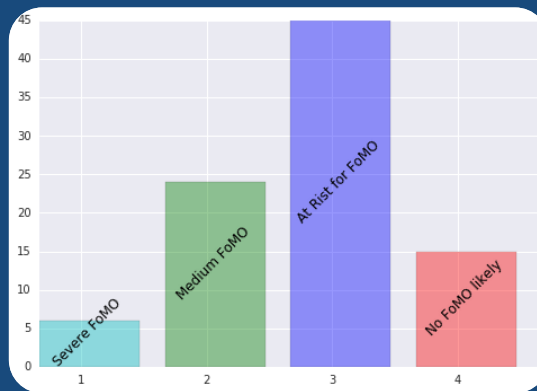
Psychological Profiles



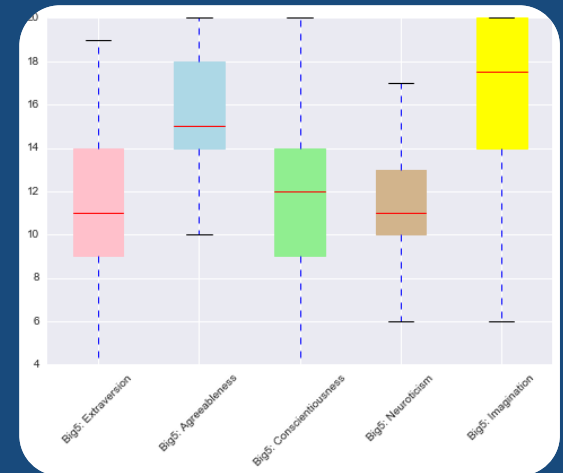
90
participants



Orientations to Happiness:
Peterson's scale (Peterson *et al.*, 2005)



FoMO:
Przybylski's FoMO scale (Przybylski *et al.*, 2013)



Personality traits:
Mini-International Personality
Item Pool (Mini IPIP) (Donnellan
et al., 2006)

User Study

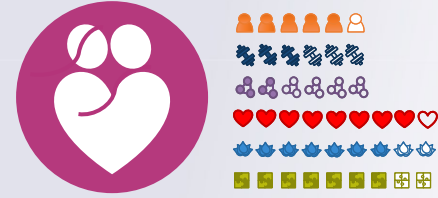
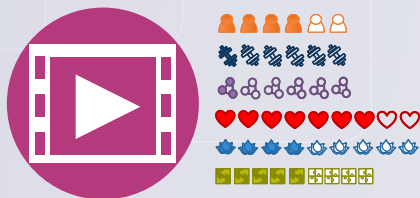
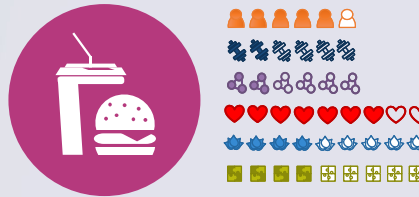
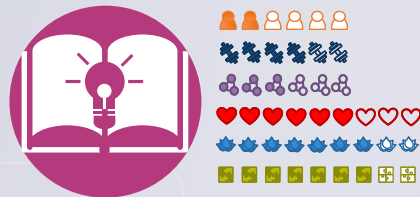


Leisure Activities

- Leisure activity preferences (selection out of 28)
- Involved Social contact
- Required Effort
- Determined Structure
- Experienced Pleasure
- Brought Meaning
- Immersed Engagement

28
categories

910
RSVPs



User Study

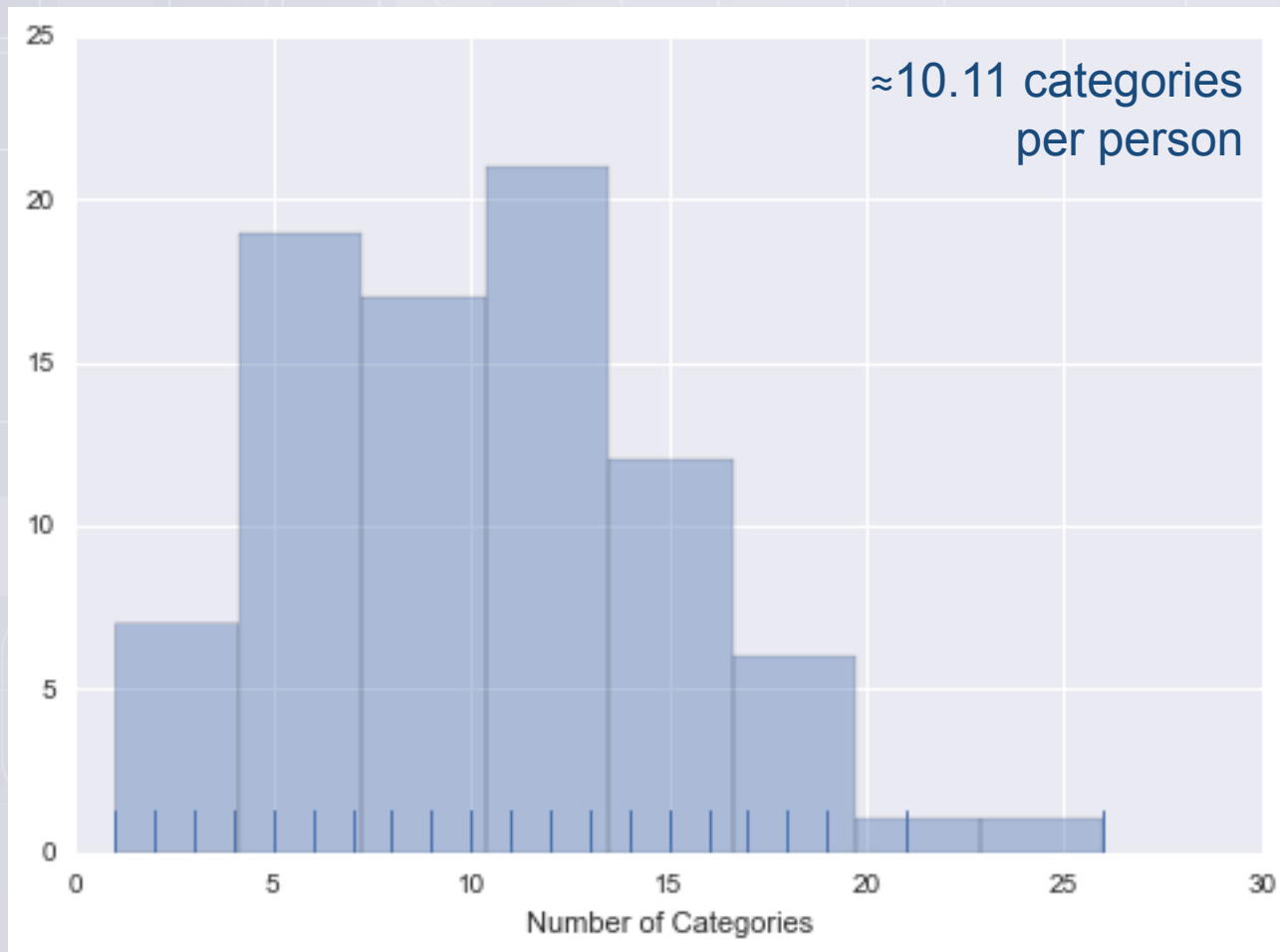
Vacation Preferences



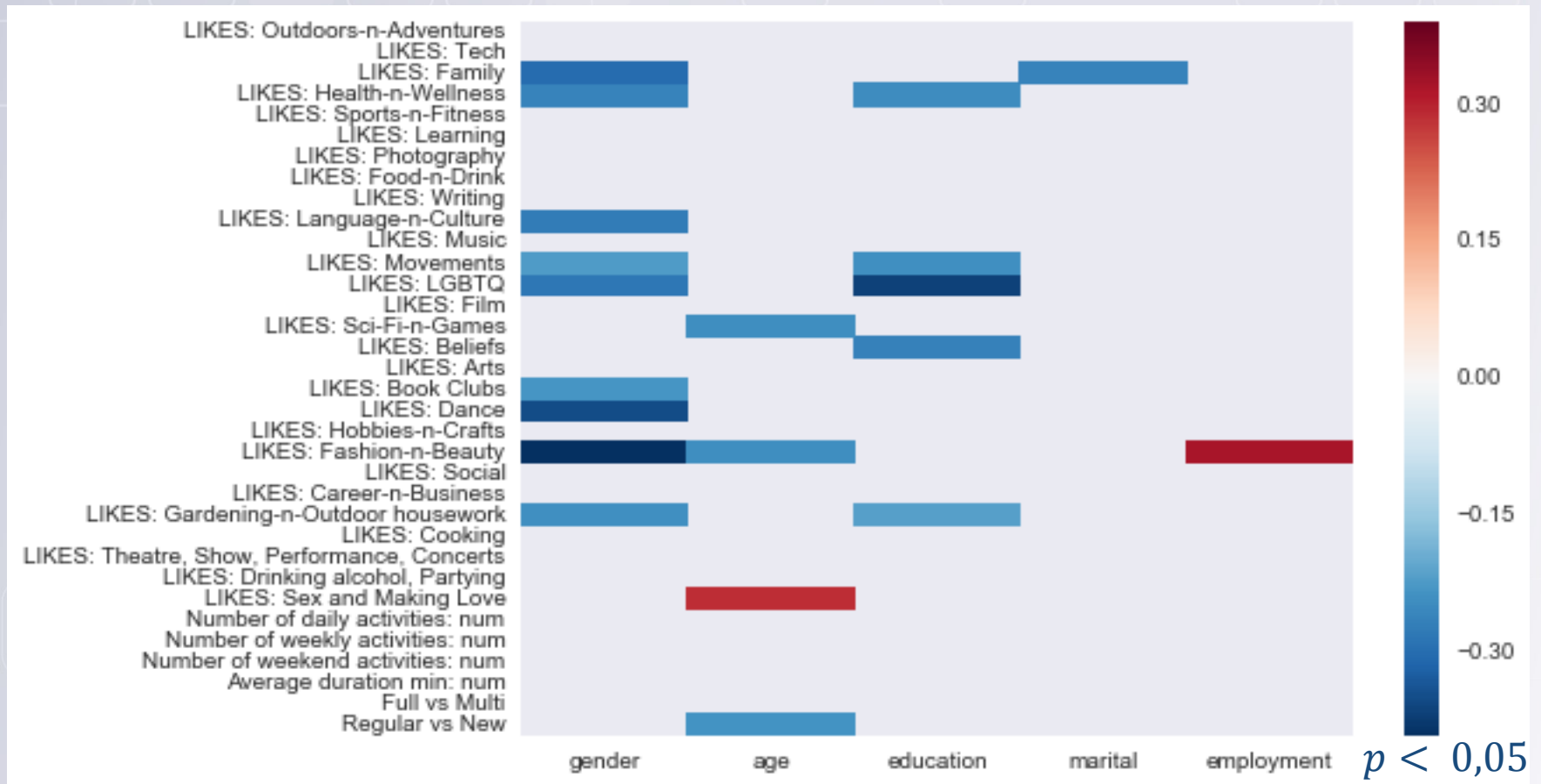
- Time of the most recent vacations
- Frequency of vacations by type
- Group of people to travel with
- Holidays planning habits (daily planning/must-do/no planning)



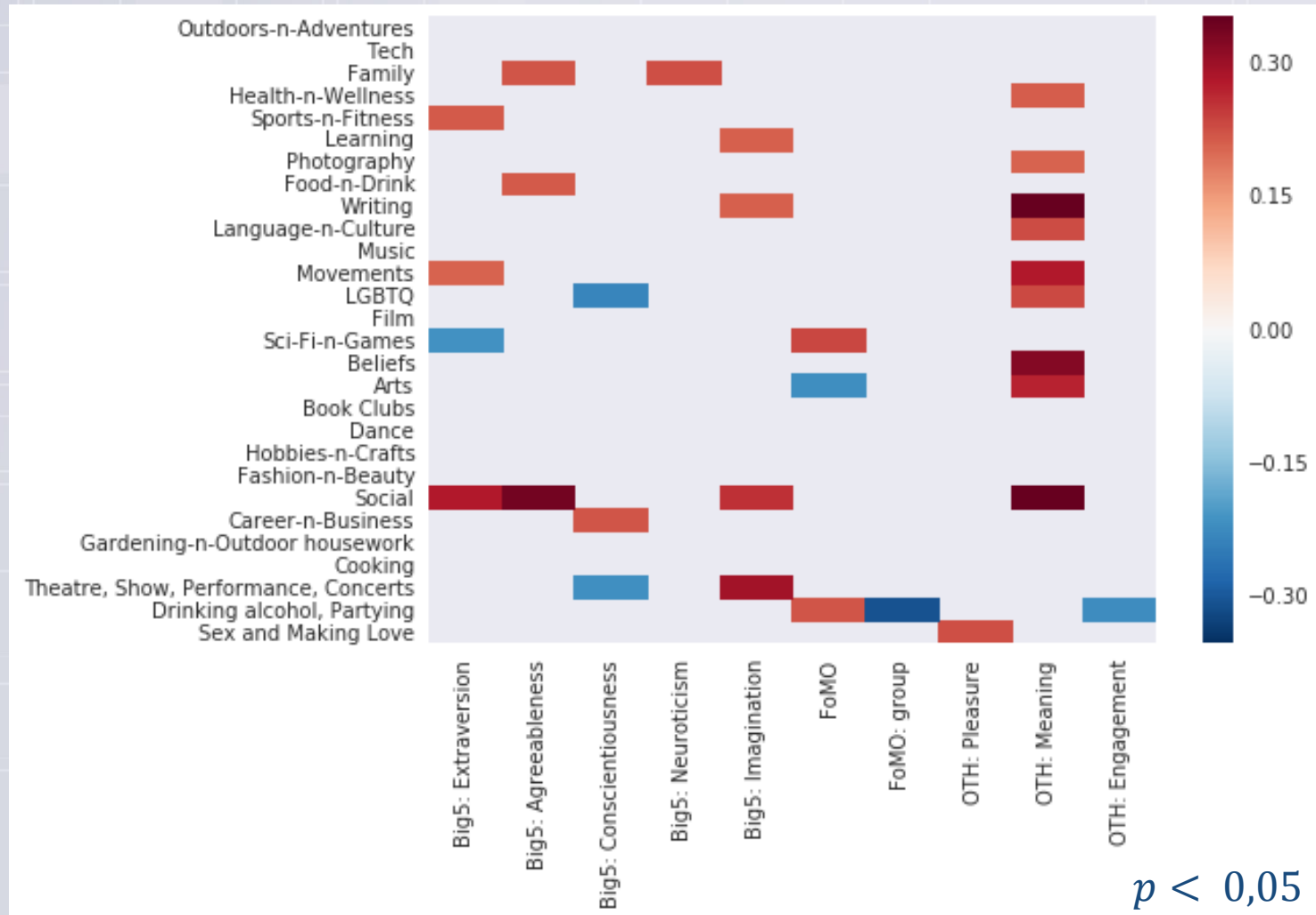
User Study: Analytics. Number of Categories



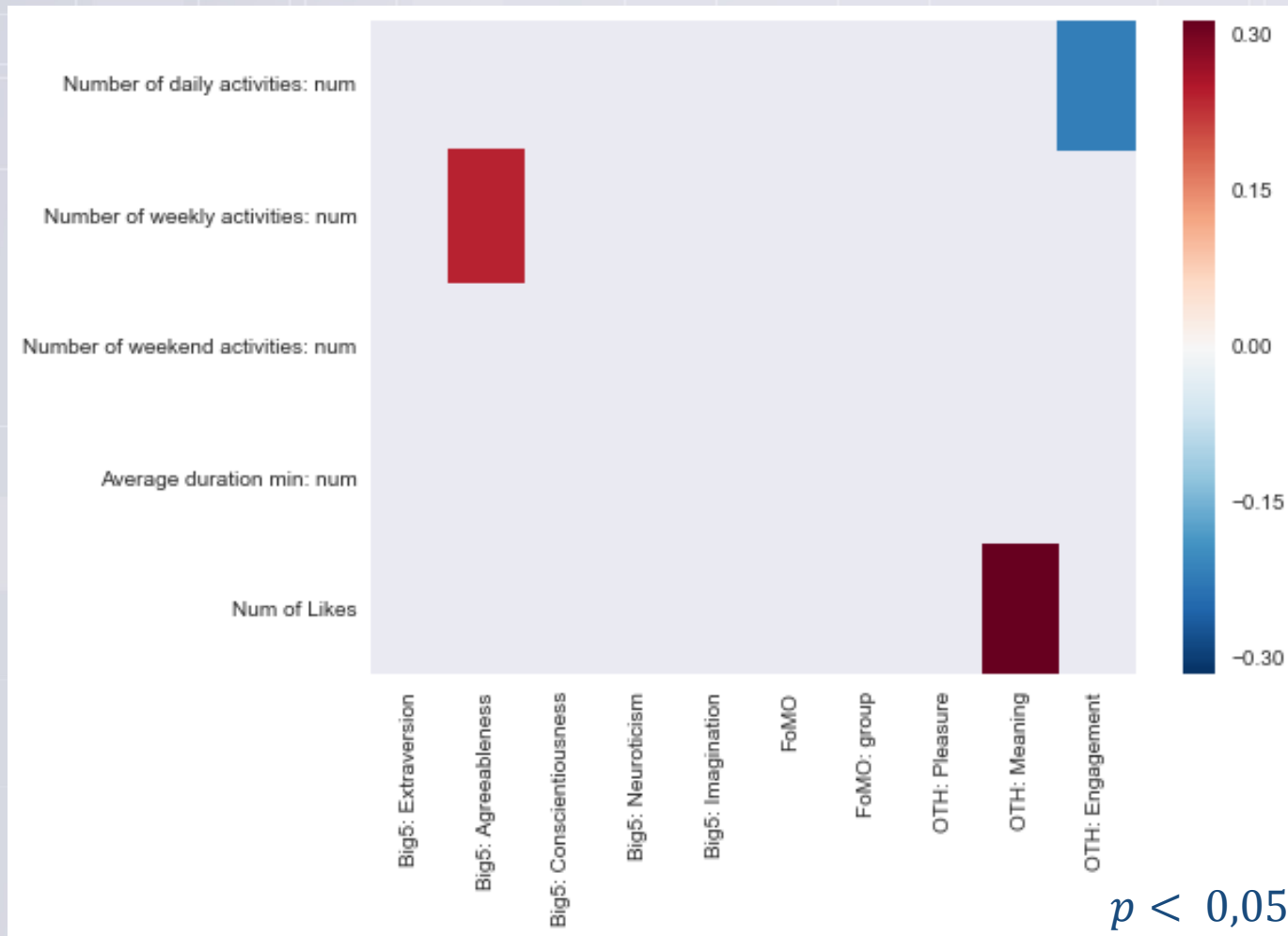
User Study: Analytics. Demo-Categories



User Study: Analytics. Psy-Categories



User Study: Analytics. Psy-Categories



What We've Learnt?

- ➔ Need for shorter questionnaire to get more complete answers
- ➔ Need for more data
- ➔ Behavioural patterns:
 - ⇒ Correlation between certain leisure categories & users demographics
 - ⇒ Correlation between certain leisure categories & users psychological profiles



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Future Work

- ✓ Extension of the User Study
- ✓ Bi-directional model:
 - ➊ from Categories to Individuality (psychological profiles)
 - ➋ from Individuality to Category Desirability
- ✓ Incorporation to the recommendation model





References

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