

Designing trustworthy situated services

An implicit and explicit assessment of locative images'
effect on trust



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Definition

- **Locativeness:** a design element reflecting the extent to which a cue (e.g. image, sound) relates to a user's physical environment

Motivation

- Understand the effect of locativeness on trust
 - can services become more trustworthy by integrating locative cues?
 - how does locativeness compare to other design elements (e.g. branding)?

Challenges

- Studying situated trust is a challenge
 - In the lab: white coat effect
 - In the wild: little control [Kindberg et al., 2008]

Methodology

- Two-stage online study
 - Study 1: Implicit association test (IAT) - measure **implicit** association between locativeness and trust
 - Study 2: Conjoint analysis - measure **explicit** association between locativeness/branding/“quality” and trust

Study I - IAT

- Users are timed on how quickly they can associate cues and concepts (repeated trials)
- Cues (images): *local / foreign*
- Concepts (text): *trustworthy / untrustworthy*

Local Images



Forte, Madeira



Funchal, Madeira



UMa, Madeira



Penhasco, Madeira



Igreja, Madeira



Levada, Madeira

Foreign Images



Paris, França



Icebergs, Antártida



San Francisco, USA



Uluru, Austrália



Pirâmides, Egipto



Everest, Himalaia

Trustworthy Words

Safe; Unshakeable; Credible

Honest; Protected; Loyal

Untrustworthy Words

Hazardous; Suspect; Deceitful

Unsafe; Disbelieving; Cautious

Foreign
or
Untrustworthy

Local
or
Trustworthy

Foreign
or
Trustworthy

Local
or
Untrustworthy



Loyal

Study 2 - Conjoint analysis

- Multi-factor binary forced choice
- “Which WiFi network do you prefer?”
- Factors:
 - locativeness
 - branding
 - quality



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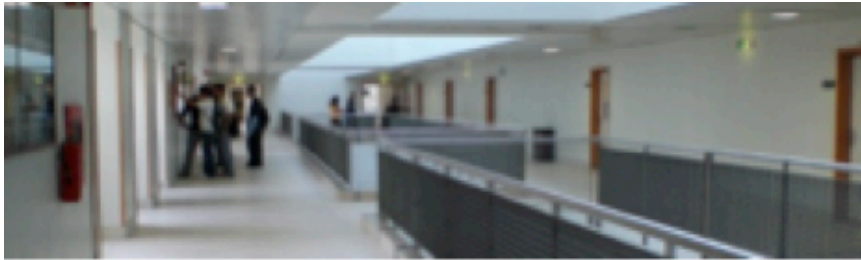







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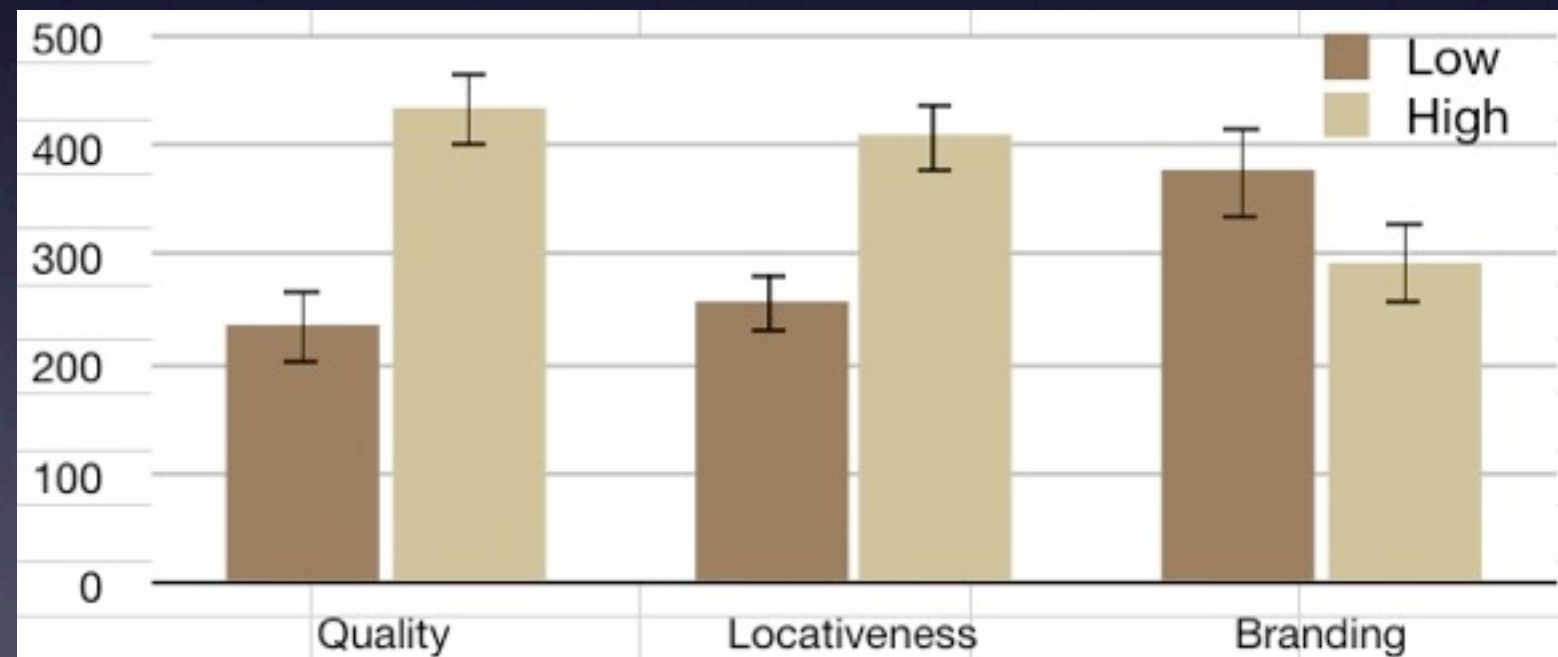
		High Quality	Low Quality
Locative	Low Branding		
	High Branding		
Foreign	Low Branding		
	High Branding		

Results - Study I

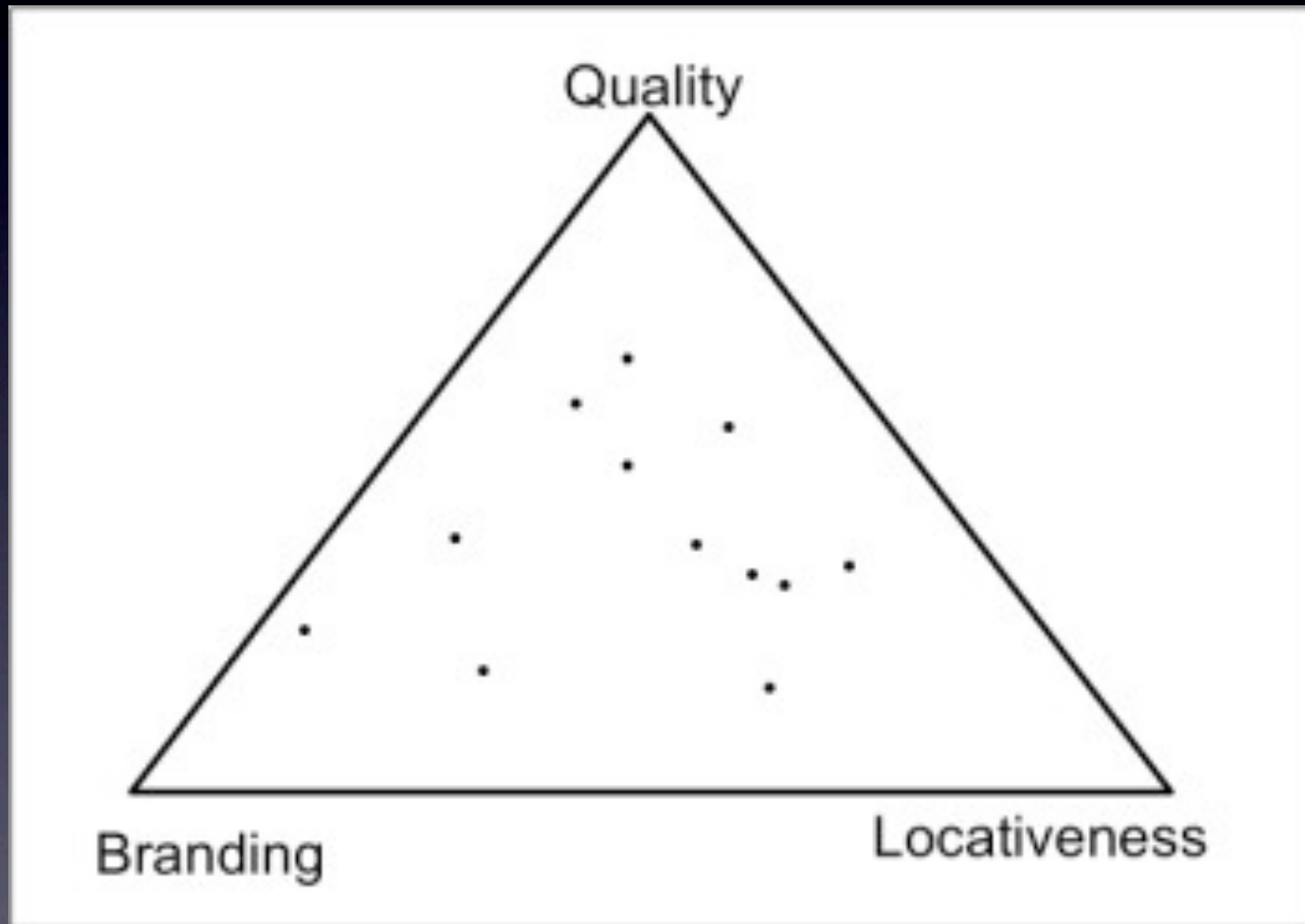
- Quicker completion time indicates stronger association
- Smallest completion time for condition
Local/Trustworthy vs Foreign/Untrustworthy
ANOVA $F(1,25)=8.79, p<0.005$

Results - Study 2

- Relative impact of each factor ($p < 0.05$)
 - quality: 45.6%
 - locativeness: 35%
 - branding: 19.4%



Participant profiles



Results - comparative

- Effect of participant profile on implicit association ($F(2,9)=17.63, p<0.05$)
 - Regression shows this effect is mostly due to locativeness (by a factor of 20).
- Correlation between participants' performance in Study 1 & relative impact of locativeness (Study 2) ($r(8)=0.64, p<0.05$)

Conclusions

- Locativeness is an important design element
 - Pre-consciously associated with trust
- Not biggest explicit effect on trust (overall)
 - More important than branding
 - Range of trust assessment strategies
- Methodology for studying situated trust: implicit & explicit assessment
 - balance of control & validity

Acknowledgments

- Thanks to Monchu Chen.

The end

Questions?

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