Institute for Media
and Communications Management
University of St.Gallen



Antecedents and Outcomes of Online Serendipity

Contextual Differences between Online Services

Christoph Lutz, Christian Pieter Hoffmann, Miriam Meckel

ICA Annual Conference 2015
San Juan, Puerto Rico
22 May 2015

Executive Summary



- *How do self-disclosure, trust and self-efficacy affect digital serendipity?*
- *How do their effects vary between three online contexts?*

⇒Substantial differences depending on context



Background

Institute for Media
and Communications Management
University of St.Gallen

Facebook Study on Filter Bubble

BACKCHANNEL

Science AAAS.ORG | FEEDBACK | HELP | LIBRARIANS

All Science Journals ▾ Enter Search Term

GUEST ALERTS | ACCESS

AAAS NEWS SCIENCE JOURNALS CAREERS MULTIMEDIA COLLECTIONS

Science The World's Leading Journal of Original Scientific Research, Global News, and Commentary.

Science Home | Current Issue | Previous Issues | Science Express | Science Products | My Science | About the Journal

Home > Science Magazine > Science Express > Bakshy et al.

Article Views

- Abstract
- Full Text
- Full Text (PDF)
- Supplementary Materials

VERSION HISTORY

- science.aaa1160v2 (most recent)
- science.aaa1160v1

Article Tools

- Leave a comment (1)
- Save to My Folders
- Download Citation
- Alert Me When Article is Cited
- Post to CiteULike
- Article Usage Statistics
- E-mail This Page

Published Online May 7 2015

< Science Express Inde

Science DOI: 10.1126/science.aaa1160

Leave a comment (1

REPORT

POLITICAL SCIENCE

Exposure to ideologically diverse news and opinion on Facebook

Eytan Bakshy[1,*,†], Solomon Messing[1,†], Lada Adamic[1,2]

Author Affiliations

*Corresponding author. E-mail: ebakshy@fb.com

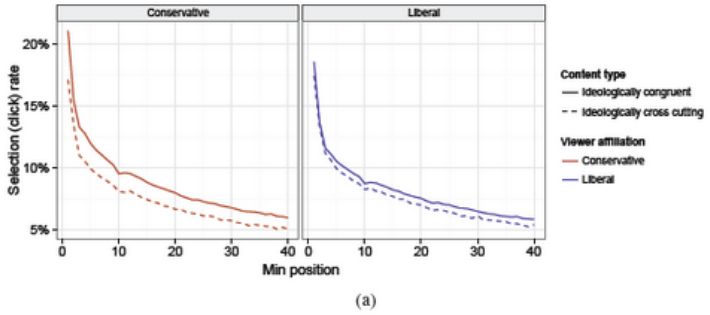
† These authors contributed equally to this work.

ABSTRACT

Exposure to news, opinion and civic information increasingly occurs through social media. How do these online networks influence exposure to perspectives that cut across ideological lines? Using de-identified data, we examined how 10.1 million U.S. Facebook users interact with socially shared news. We directly measured ideological homophily in friend networks, and examine the extent to which heterogeneous friends could potentially expose individuals to cross-cutting content. We then quantified the extent to which individuals encounter comparatively more or less diverse content while interacting via Facebook's algorithmically ranked News Feed, and further studied users' choices to click through to ideologically discordant content. Compared to algorithmic ranking, individuals' choices about what to consume had a stronger effect limiting exposure to cross-cutting content.

Did Facebook's Big New Study Kill My Filter Bubble Thesis?

Not really. Let's dive into it and see why not.

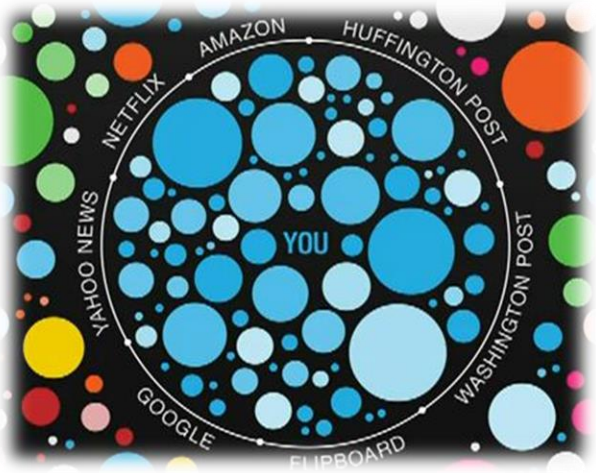


How Facebook's Algorithm Suppresses Content Diversity (Modestly) and How the Newsfeed Rules Your Clicks

Does Internet Foster or Inhibit Serendipity?







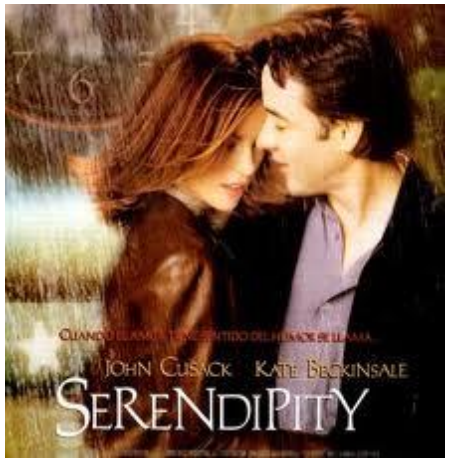
Foster: wealth of information and social ties leads to serendipity

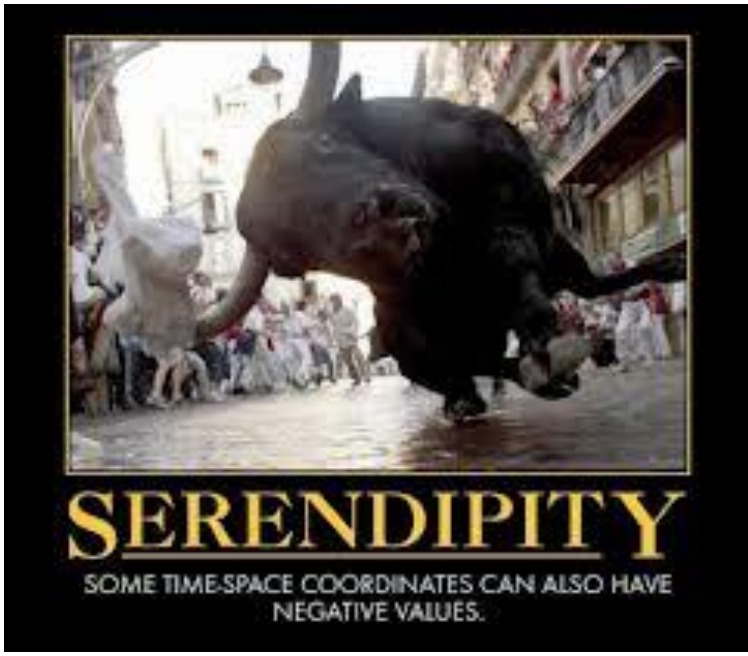
Inhibit: personalization and filter bubble through algorithmic selection

Institute for Media and Communications Management
University of St.Gallen

Serendipity is very hyped







VENICE BIENNALE

Serendipity Spices a Surprising Venice Biennale



Daniel Zakharov

In the Russian Pavilion, Mr. Zahkarov restages the myth of Zeus's seduction of Danae in the form of a shower of gold coins as a comment on the greed of modern times.

Yeas and Nays

Sightings: Sasha Obama enjoys Serendipity 3

June 9, 2013 | 7:15 pm

0 Comments Like 2 Tweet 0 Submit Share



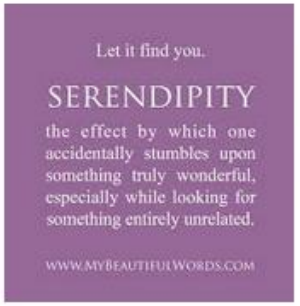
On Thursday, **Sasha Obama** was spotted dining at Serendipity 3 in Georgetown. The younger Obama daughter was joined by four girlfriends, a restaurant source tells Yeas & Nays. All the girls enjoyed the D.C. Chicken Strips and Frrrozen Hot Chocolate. Obama also tasted the Oreo milkshake.

Sign Up for the Yeas & Nays newsletter! ›

Nikki Schwab
Staff Reporter – Yeas & Nays
The Washington Examiner

...it has (almost) become mainstream



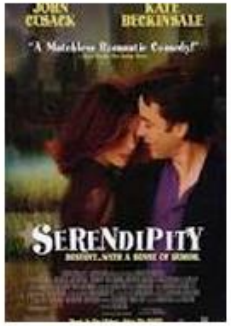













Source: Google Images; Search Term «Serendipity»

Serendipity

(noun)

“The occurrence and development of events by chance in a happy or beneficial way.”

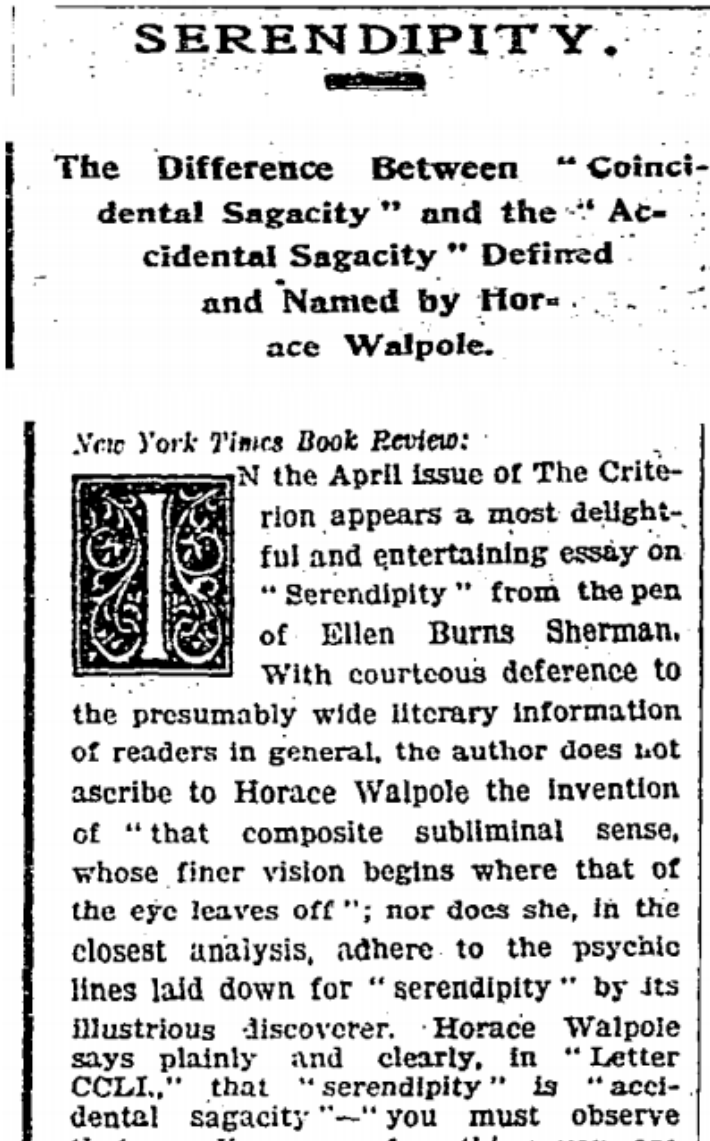
A fortunate stroke of Serendipity

Serendipity and Accidental Sagacity

Accidental **sagacity** a necessary element for serendipity

Discoverer must be able to recognize the value

“Chance favors the prepared mind.”



SERENDIPITY.

The Difference Between "Coincidental Sagacity" and the "Accidental Sagacity" Defined and Named by Horace Walpole.

New York Times Book Review:

IN the April issue of The Criterion appears a most delightful and entertaining essay on "Serendipity" from the pen of Ellen Burns Sherman. With courteous deference to the presumably wide literary information of readers in general, the author does not ascribe to Horace Walpole the invention of "that composite subliminal sense, whose finer vision begins where that of the eye leaves off"; nor does she, in the closest analysis, adhere to the psychic lines laid down for "serendipity" by its illustrious discoverer. Horace Walpole says plainly and clearly, in "Letter CCLI.," that "serendipity" is "accidental sagacity"—"you must observe

Institute for Media and Communications Management
University of St.Gallen

Previous Research

Rubin, Burkell & Quan-Haase (2011)

Process model of serendipity; prior need, background knowledge, creativity and psychological factors as antecedents

McCay-Peet & Toms (2015), McCay-Peet et al. (2015)

Role of the environment more important than personal characteristics; trigger-rich environments and openness decisive

Makri & Blandford (2012a), Makri & Blandford (2012b)

Unexpectedness, insight and value essential parts of serendipity

Limitations of Previous Research

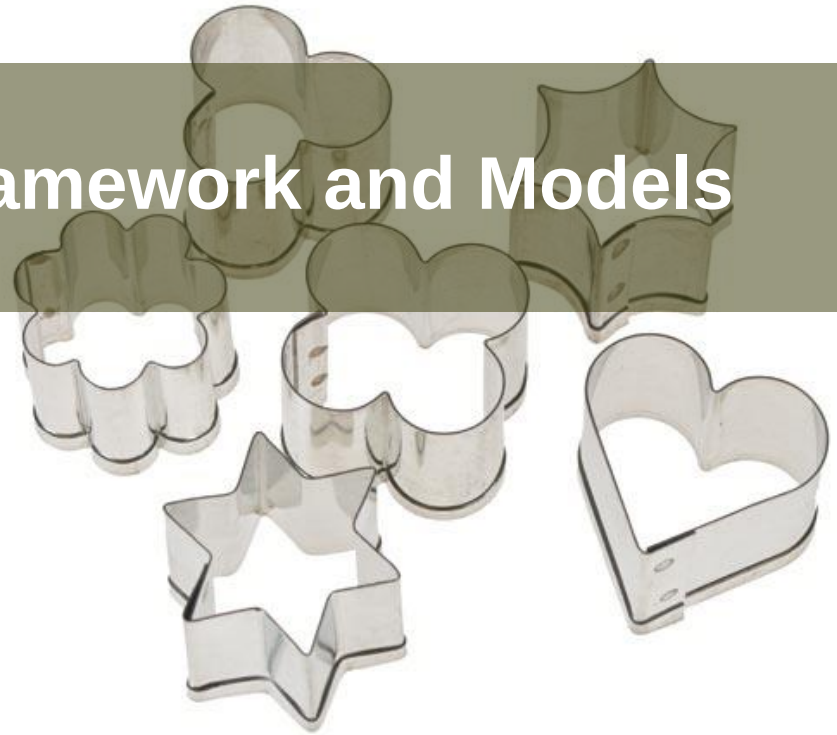
Focus on process

Personal antecedents and outcomes neglected

Little contextual differentiation

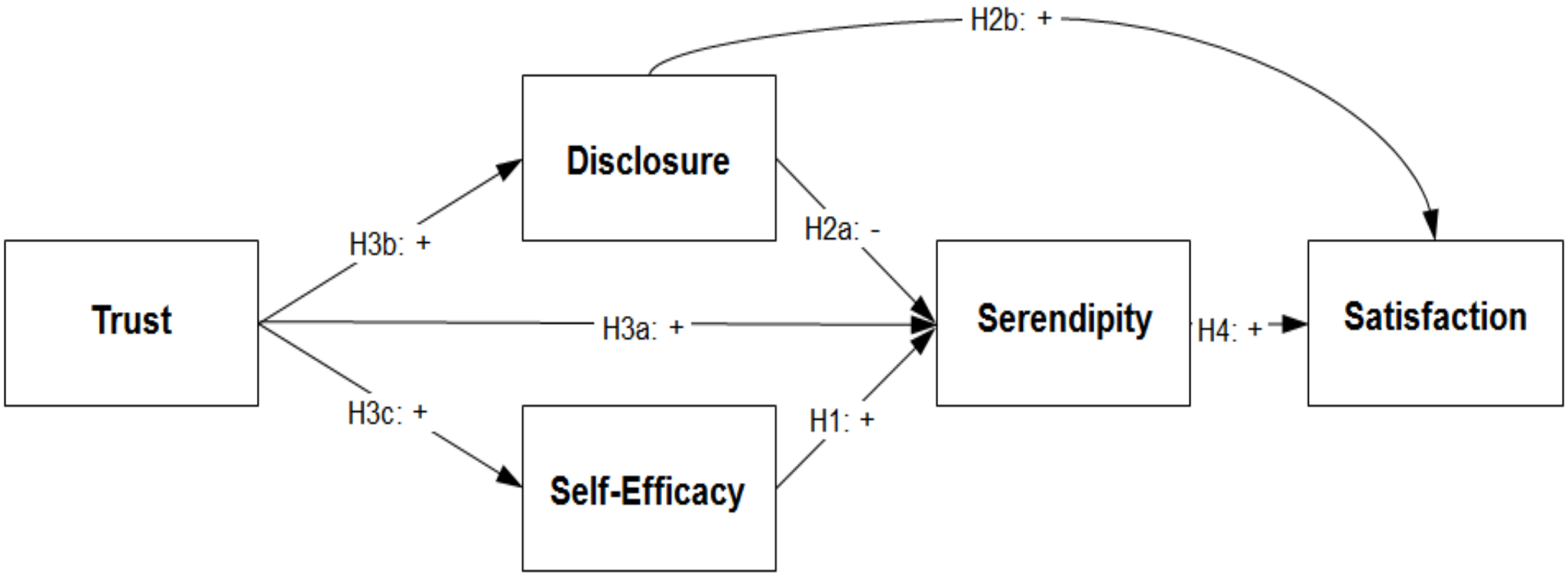
Studies almost exclusively qualitative and experimental

Research Framework and Models

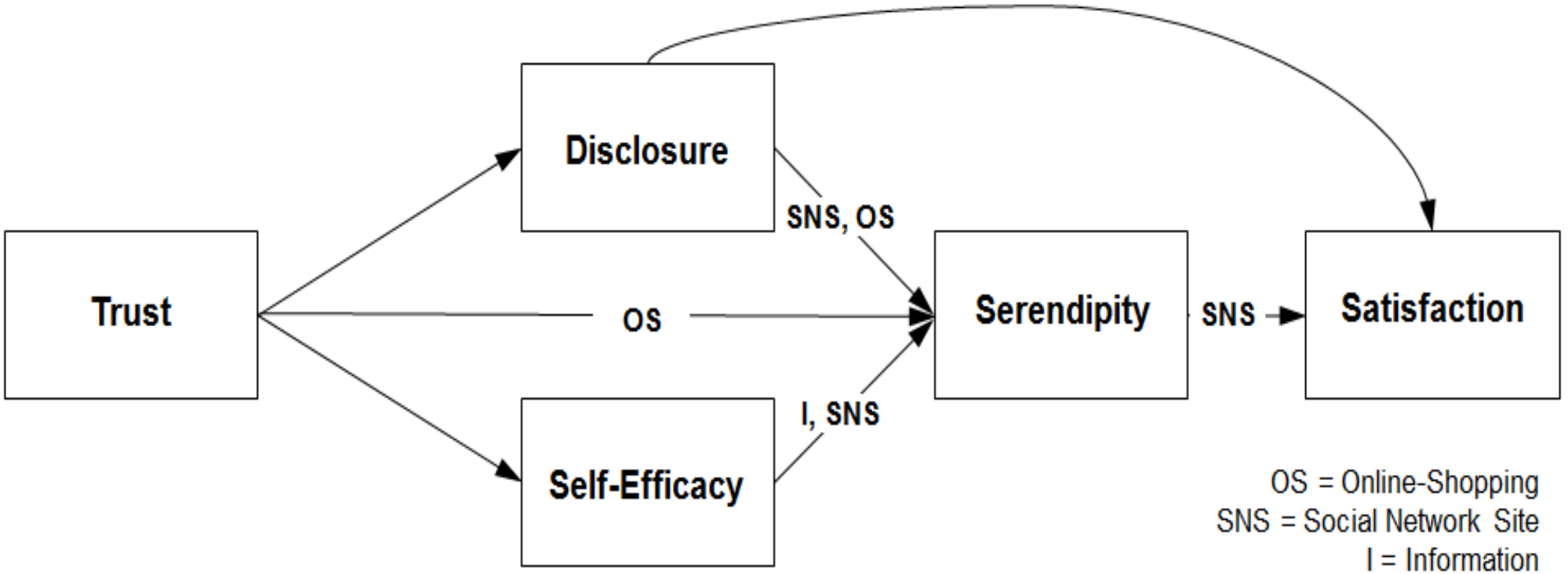


Institute for Media
and Communications Management
University of St.Gallen

Baseline Model



Differentiation along Online Context



Methodology



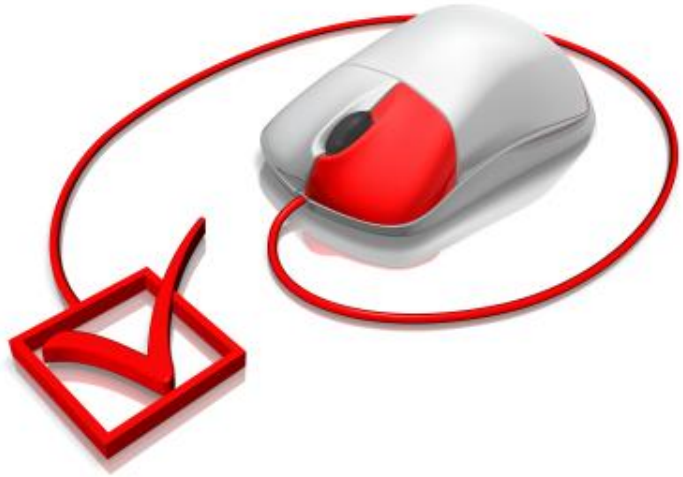
Institute for Media
and Communications Management
University of St.Gallen

Data and Method

Online survey with 1247 participants

Representative distribution of gender, age and region of **German Internet population**

Structural equation modeling



Institute for Media
and Communications Management
University of St.Gallen

Measurement

Serendipity

New scale by McCay-Peet (2013) with 4 items

Self-efficacy

3 items from previous studies (Compeau et al., 1999; Venkatesh et al., 2003; Venkatesh & Bala, 2008)

Self-disclosure

4 items from Krasnova et al. (2010)

(Institution-based) trust

Established scale with 4 items by McKnight et al. (2012)

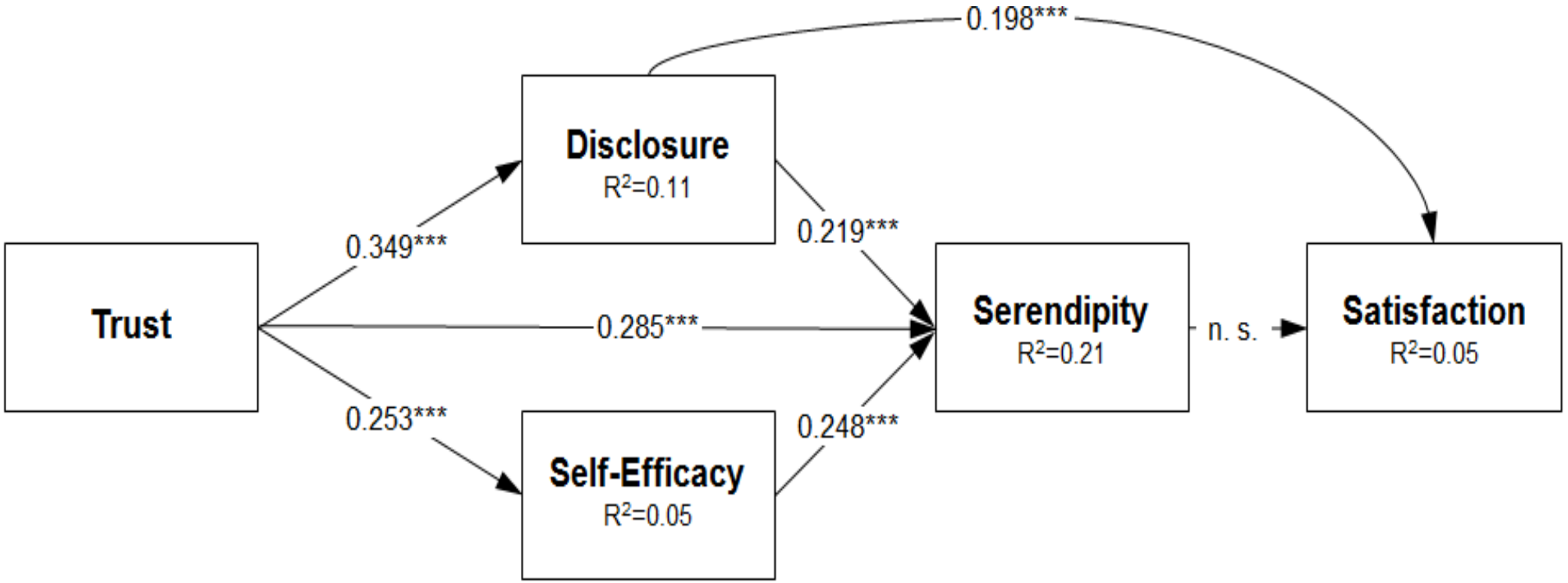




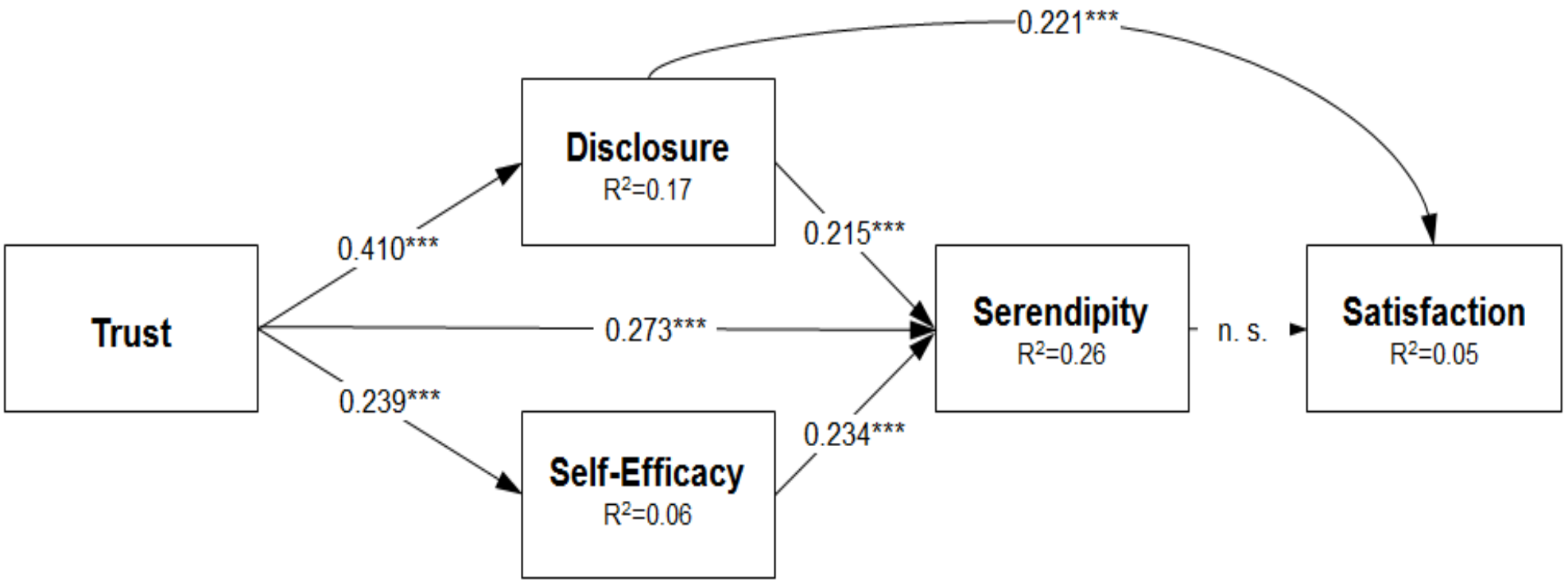
Results

Institute for Media
and Communications Management
University of St.Gallen

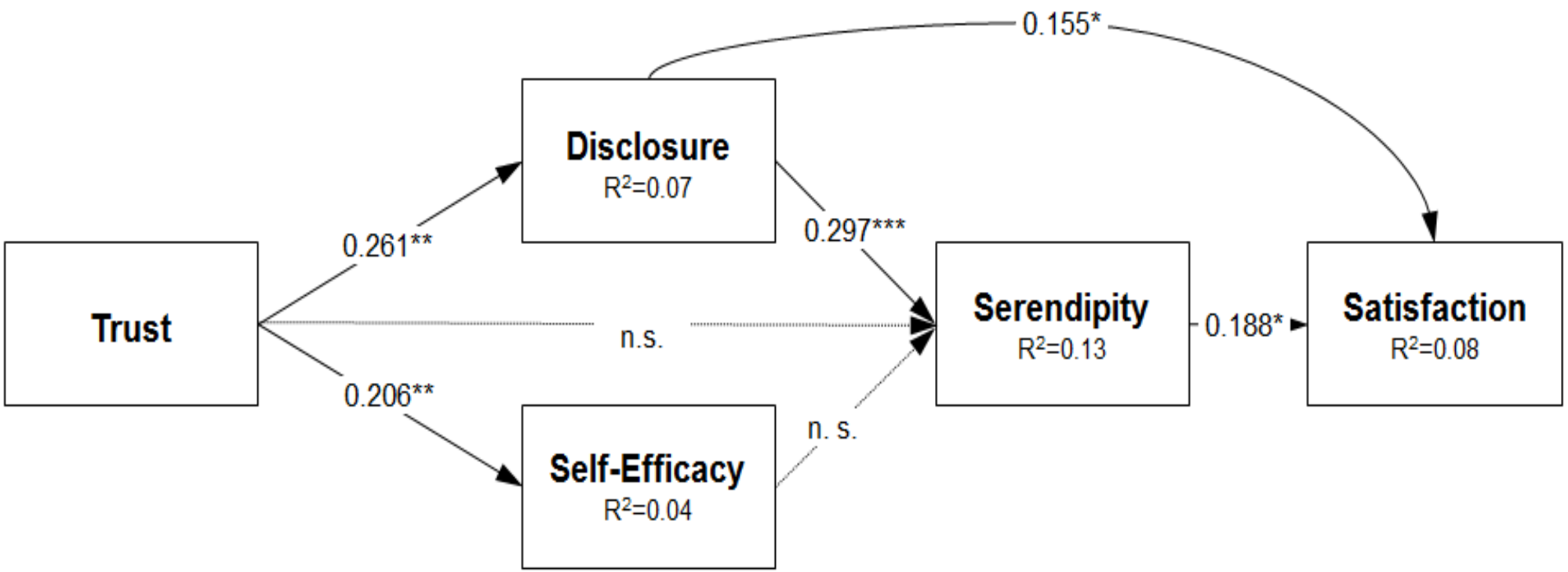
Baseline Model



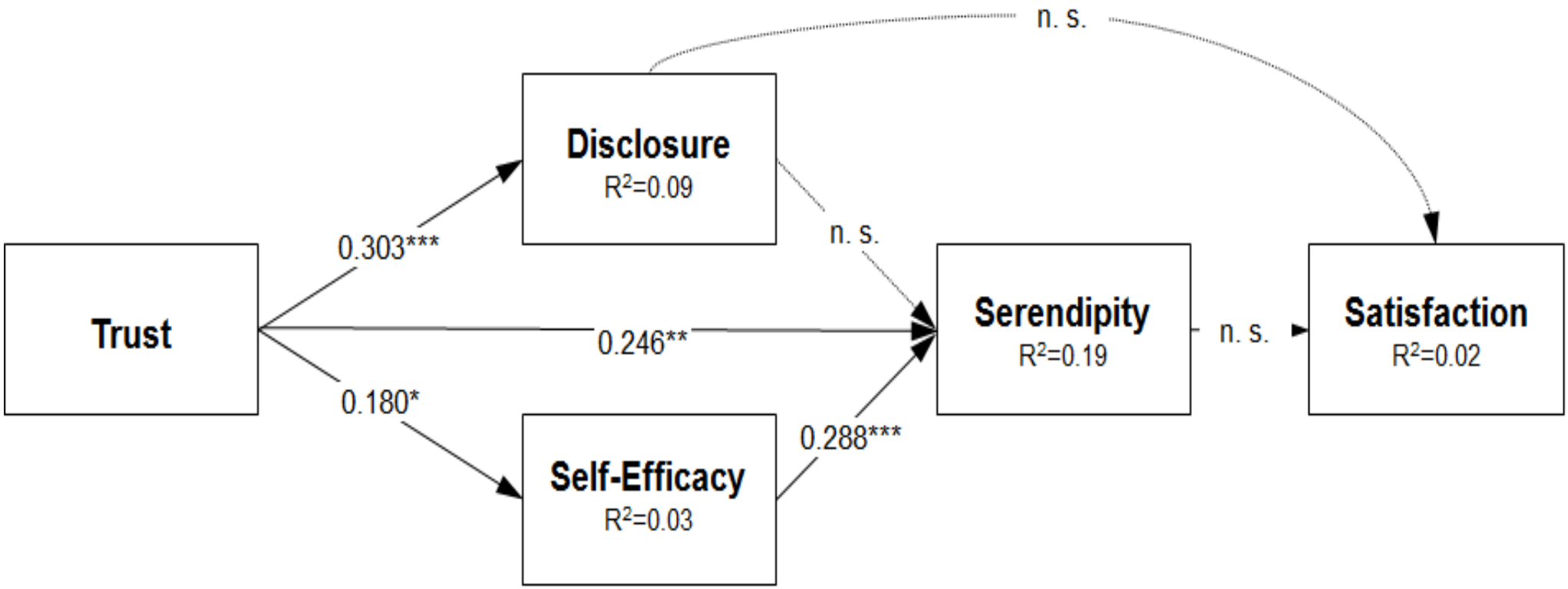
Online Shopping



Social Network Sites



Information



Main Findings

Serendipity depends on online context and leads to most satisfaction in SNS

Different **antecedents** influence serendpity more strongly across contexts: trust in online shopping, self-disclosure in SNS, self-efficacy in information





Implications and Limitations

Institute for Media
and Communications Management
University of St.Gallen

Implications

Digital serendipity needs to be differentiated according to the **context/environment** in question

Established antecedents of other «Internet variables» work for serendipity as well (trust, self-efficacy)

The interrelation of self-disclosure and serendipity as well as satisfaction is noteworthy



Limitations

Cross-sectional study and **quantiative** study

Not an exhausting **typology** of antecedents

Only on **country** considered





Thanks for Your Attention

Institute for Media and Communications Management
University of St. Gallen
Blumenbergplatz 9
CH-9000 St. Gallen

References

Compeau, D., Higgins, C.A. & Huff, S. (1999). Social Cognitive Theory and Individual Reactions to Computing Technology: A Longitudinal Study. *MIS Quarterly,* 23(2), 145-158.

Krasnova, H., Spiekermann, S., Koroleva, K., & Hildebrand, T. (2010). Online social networks: why we disclose. *Journal of Information Technology, 25*, 109–125.

Makri, S., & Blandford, A. (2012a). Coming across information serendipitously-Part 1: A process model. *Journal of Documentation*, *68*(5), 684-705.

Makri, S., & Blandford, A. (2012b). Coming across information serendipitously-Part 2: A classification framework. *Journal of Documentation, 68*(5), 706-724.

References

McCay-Peet, L. (2013). *Direct measures of serendipity*. Technical report. Online: http://www.academia.edu/4508818/Direct_measures_of_serendipity

McCay-Peet, & Toms, E. G. (2015). Investigating serendipity: How it unfolds and what may influence it. *Journal of the Association for Information Science and Technology, online first*.

McCay-Peet, L., Toms, E. G., & Kelloway, E. K. (2015). Examination of relationships among serendipity, the environment, and individual differences. *Information Processing & Management, 51*(4), 391-412.

McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and Validating Trust Measures for e-Commerce: An Integrative Typology. *Information Systems Research, 1*3(3), 334–359.

References

Rubin, V. L., Burkell, J., & Quan-Haase, A. (2011). Facets of serendipity in everyday chance encounters: a grounded theory approach to blog analysis. *Information Research, 16(3*). Online: http://informationr.net/ir/16-3/paper488.html

Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. *Decision Sciences, 39*(2), 273-315.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425–478.

Construct	Item	Wording (Scale)
Digital Serendipity (DS)	DS1	In digital environments, I experience serendipity that has an impact on my everyday life.
	DS2	In digital environments, I experience serendipity that has an impact on my work.
	DS3	I encounter useful information, ideas, or resources that I am not looking for when I use digital environments.
	DS4	In digital environments, I experience mixes of unexpectedness and insight that lead to valuable, unanticipated outcomes.
Institution-based Trust (T)	T1	The Internet has enough safeguards to make me feel comfortable using it to transact personal business.
	T2	I feel assured that legal structures adequately protect me from problems on the Internet.
	T3	In general, the Internet is a robust and safe environment in which to transact personal business.
	T4	I feel confident that technical structures, such as encryption applications, adequately protect me from problems on the Internet.
Online Self-efficacy (OSE)		How well do you think you are able to…
	OSE1	…publish information on a blog or on Twitter?
	OSE2	…publish a video on the Internet (e.g. on Youtube)?
	OSE3	…create or edit an article on Wikipedia?

Construct	Item	Wording (Scale)
Self-Disclosure (SD)	SD1	My user profile contains all data requested by the service.
	SD2	My user profile is comprehensive.
	SD3	My user profile is up-to-date.
	SD4	My user profile says a lot about me.
Satisfaction	S1	All together, how satisfied are you with the service you chose?