

“Consumer Trends Research with E-Commerce Data”

Prof. Dr. Robert Daubner, Director IIFK (Center of Consumer & Trend Research, Berlin)

1. A new quality in trend research

In a very short time, we've gone from living in a world where data was a relatively rare commodity controlled by a small group of information gatekeepers, to one where massive amounts of data on every imaginable subject are available at the click of a mouse. Consumer behaviour today provides an overall digital examination of the economic, social, cultural and psychological factors that affect consumers in the marketplace. The IIFK examines the consumer from two perspectives – first, the effects of internal forces on an individual including perceptions, motivations, lifestyles and attitudes, then second, the effects of external factors as a group member considering family and group influences, including age, gender, social class, social, regional, household and other sub-cultural and cultural influences. For private and public organisations using big data nowadays has created a significant opportunity. By using sophisticated analytical tools it is possible to interrogate and sift through the digital information generated by the online world to discover patterns and trends in consumer behaviour and sentiment, and then cross-analyse this with traditional types of data in order to create a new “Consumer Trend Prediction Algorithm” (CTPA). As such, big data enables organisations to develop closer, more personal relationships with consumers, based on what they actually want rather than a crude demographic guess.

2. Center of market and consumer trends at the Business School Berlin Potsdam

Research topic is the consumer research and its deduction of forecasts and trends by using latest perceptions of data collection and analysis. The global gusto, consumer and shopping markets get more and more impacted by a fundamental change. In general, measuring and managing website key performance metrics, such as the number of visitors, view time, conversion rates and click-out data has become crucial to E-Commerce shops as well as manufacturers. An understanding of what influences these metrics of success and how to improve them is thus of great interest to researchers. Sustainability, Social Commerce and a never seen technology impetus (Quick Response, Augmented Reality, Near Field Communication, Peer-to-peer-Markets) make huge demands to the retailer industry. Trends like shared networks, the do-it-yourself and co-creative consumption guide us the way out of the past markets and research status quo from the 20th century. By courtesy of the digital communication and its new possibilities of non-reactive measurement methods (Kroeber-Riel, Werner, Peter Weinberg und Andrea Gröppel-Klein (2009): Konsumentenverhalten, 36-44), the gain of insights by empiric results can increased conspicuously (e.g. by using the „Click-through-rate“ or „Click-out-rate“ of independent online price comparison platform or shops). In addition to that, during the last years a bunch of external influence factors have been merged but wasn't often research topic at the general consumer research up to now: search engines, price search engines, comparison services, testing services, trends platforms, trend blogs

or social networks. The center of market and consumer trends has set the mission to research new measurements methods at the consumer behavior. Furthermore, it wants to verify new rising influence factors of the digital economy impacting consumers and their quantifier & effect. (MacKenzie, Scott B., Richard J. Lutz, and George E. Belch (1986), "The Role of Attitude toward the Ad as a Mediator of Advertising Effectiveness: A Test of Competing Explanations," *Journal of Marketing Research*, 23 (May), 130–143. Fishbein, Martin and Icek Ajzen (1975), *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*, Reading, MA: Addison-Wesley.)

3. Using "Non reactive data" (NRD) has advantages in predicting Consumer Trends

Non reactive data collection is conducted in a naturalistic setting in such a way that persons studied are not aware of it; such as tracking "click-out" data.

Thus, non-reactivity is not a characteristic of the data or the data collection procedure per se, but of the awareness of the persons (not) studied.

Three kinds of non reactive data:

- Environmental (Physical) Traces
- Simple Observations
- Archival Sources

Often, a reactive equivalent to NRD does not exist. It would be cumbersome to develop or it would severely interfere with the phenomena studied. The phenomenon of interest would be distorted or disappear if studied in a reactive way. *Example: Studying dating on the Internet via reactive measures would defeat its purpose and/or would be open to criticism that an unsuitable method has been used.* Today, many social phenomena (e.g., communication in organisations) unfold especially or even exclusively via the Internet. NRD collected on the Internet highlight behavioral & social phenomena, but is also indispensable for organising online research. *Example: Using cookies, IP-Addresses or time stamps to control if persons participate several times in an online study.* Also the data collection

- is relatively simple
- not limited to a fixed area/time
- may yield Data may be collected in large quantities
- can be done in an automated and objective way
- may cover "sub-symbolic information"

But there are limits of Non Reactive Data Collection on the Internet: Many techniques used for NRDCI have not been designed for online research studies in the first place. *Example: Log files have been devised to allow technical staff to control the proper working of systems like web server.* NRDC techniques facilitate studying a very small part of the spectrum of behavioral or social phenomena. Person characteristics like

appearance, height and weight, attire, gender, age, ethnic group, facial expressions, eye contact, body language, gestures and emotive responses are filtered away. This research stream is still in its infancy. As stated above, the studies focus on different research questions, different types of websites, and the data volume is often quite limited. Moreover, one advantage of using NRD click-out data is the vast amount of “data” which can lead to better predictions.

4. Implications for Online Retailers, Manufacturers and ordinary people

Many of us underestimate just how empowering big data will soon be for ordinary people. We look at data as a corporate tool – “they” are tracking “us,” and we can only hope that the big corporations with all this data will use it humanely. A service called “decide.com”, which used even more data and analytics to predict future price changes on a whole range of consumer products was sold to eBay in September 2013. For a small subscription fee, you could access decide.com on your computer or your smartphone, and find out whether the price on an item is likely to increase or decrease in the next four weeks or so. For instance, If you’re considering whether to buy an Apple iPad, Decide.com predicts that the 399 EURO current price for the iPad Gen 4 will likely drop by 30 Euro within the next two weeks (85% confidence). So you might want to wait a few days before you buy. These were the predictions on Decide.com as of early Monday morning, July 28 2013. But they changed regularly, as new data came in. Imagine now an app or website that taps into decide.com’s price history analytics as well as wajam.com’s social filtering information connected with “Peer-Group-Signals” (PGS) and advertising activities around the globe! Connect your credit card information to this app, preload the app with a list of purchases you’re considering, and authorize it to “pull the trigger” on a purchase when its algorithm calculates that the price is optimal and your PGS is on “go” (because the product is still “cool”), provided that none of your friends or your more distant social connections has weighed in with a highly negative review in the meantime. But big data can also directly benefit consumers themselves. Today’s big-company analytics programs and research initiatives are tomorrow’s consumer apps.