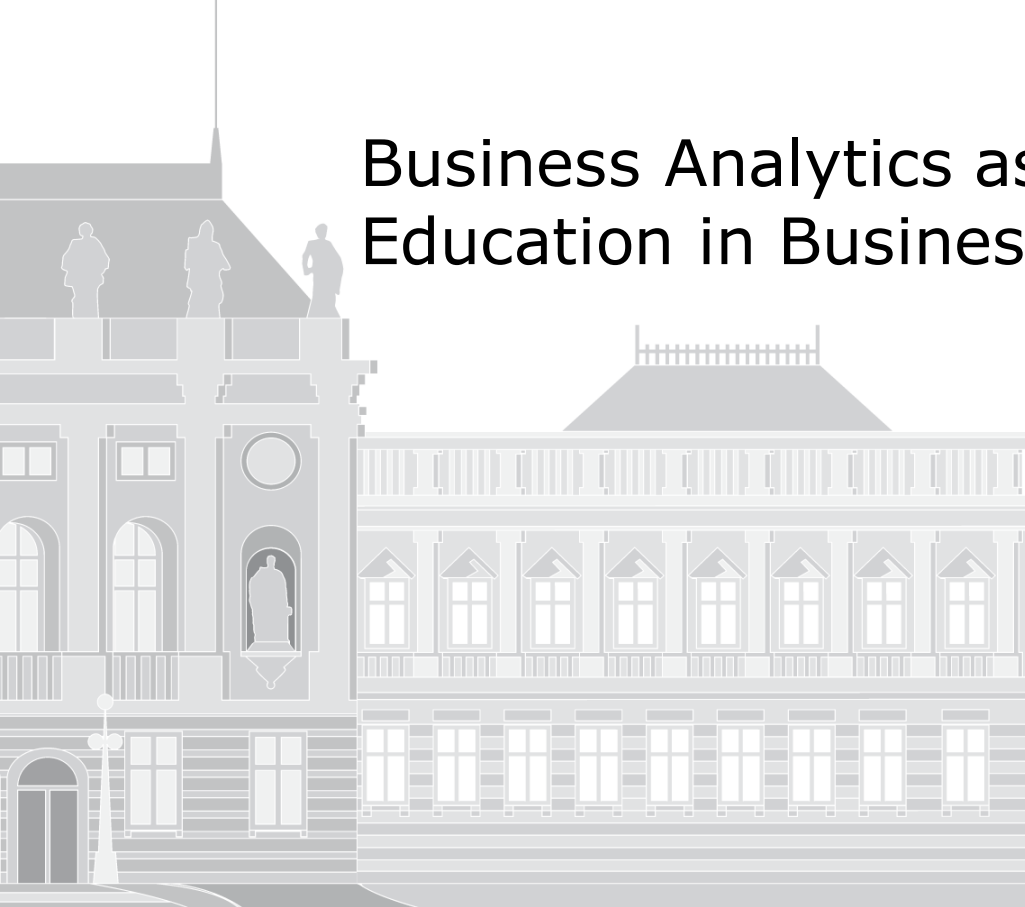


Business Analytics as Part of Marketing Education in Business Schools Settings

Stefan Thalmann
René Hubert Kerschbaumer
Thomas Foscht



Problem definition

- Big Data and Data Science are shaping our society, but degree programs in data analytics are focusing mostly on technical aspects.
- In business education, the number of courses covering practical application of data analytics remains rather small.

How can we integrate data science in marketing courses?

How far can we go?

How far can we get?

Seminar in Business-to-consumer Management

- master program in business studies
- small groups, approx. 10 students

Course objectives

- dealing critically with theoretical and empirical aspects of marketing research
- explaining and critically evaluating empirical methods of marketing- and customer behavior research,
- designing, carrying out and analyzing empirical studies as well as interpreting their results

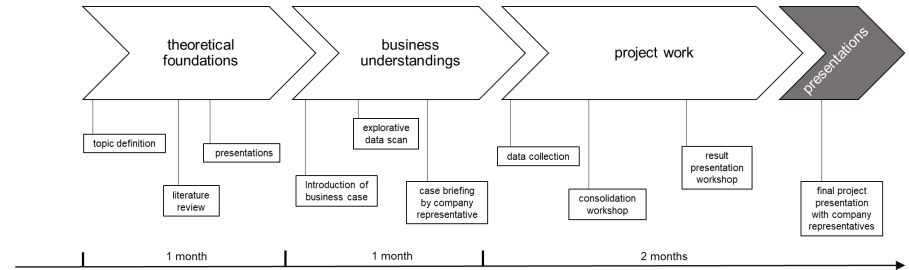
How to integrate Business Analytics

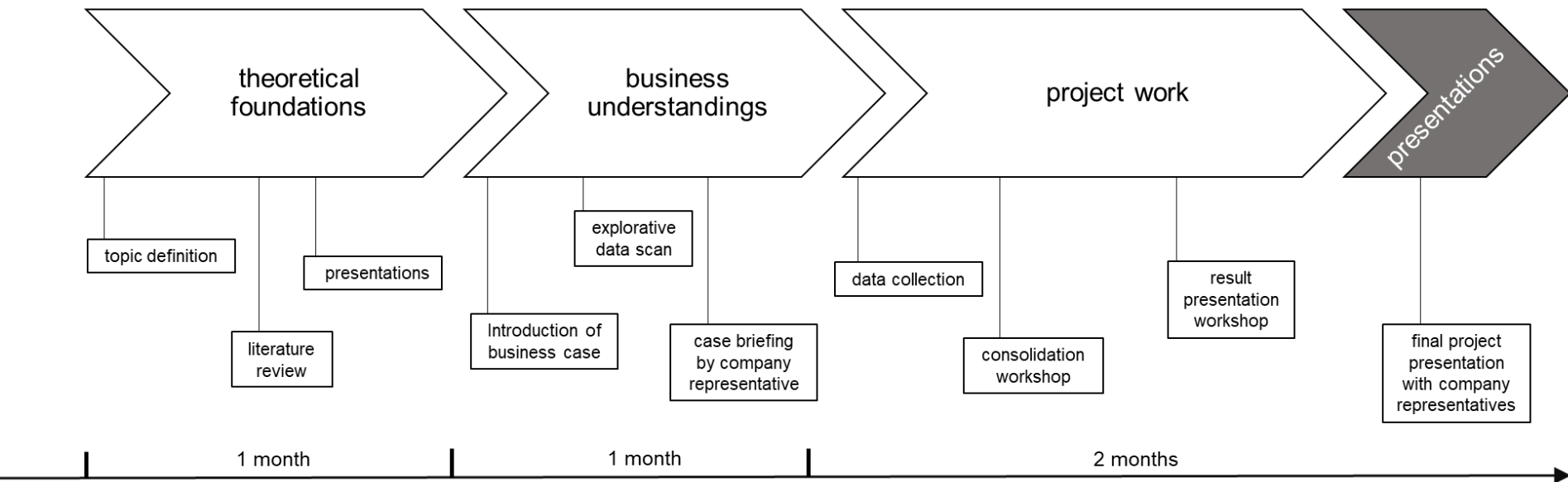
Goals

- combine already known marketing approaches with methods from business analytics
- apply web mining
- use web data

Organization

- Three groups
- Three phases



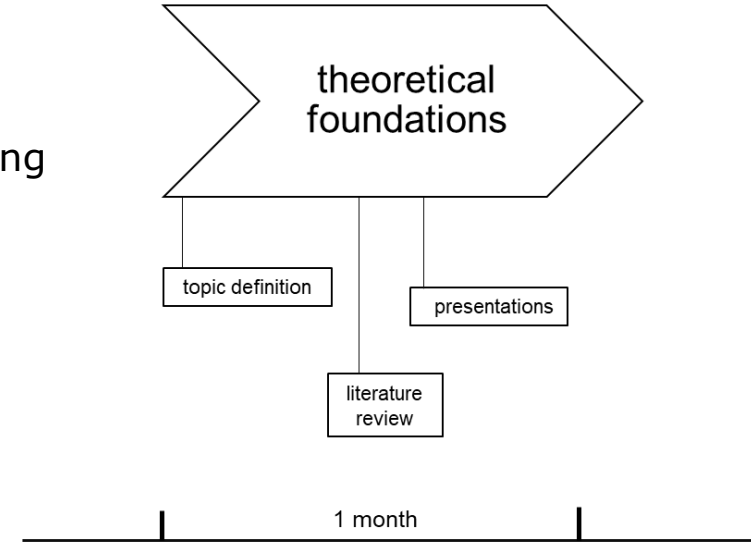




Phase one - theoretical foundations

marketing theory

1. Extraction of electronic word of mouth via web mining
2. Consumer segmentation via web mining
3. Predicting consumer behavior via web mining



Phase two - business understandings

Density and concentration meter: EasyDens

- determines extract content and sugar content of home-produced fruit juices
- determines alcohol content in spirits
- monitors the fermentation process of beer and wine
- Easy-to-use with smartphone app

Anton Paar

- Business-to-business supplier of measurement instruments
- 110 countries, 3100+ employees
- Net sales rev. € 309 million (2017)
- **EasyDens: first B2C product**

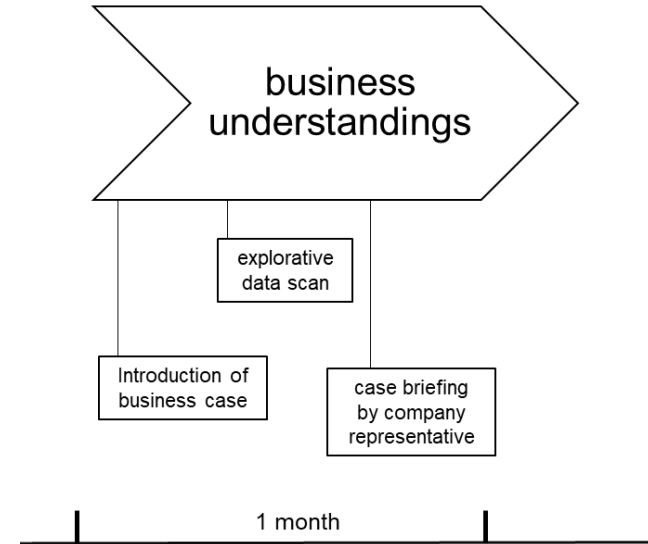




Phase two – business understandings

Group work – **understanding the business case**

1. Exploring data set
2. Exploring variables for customer segmentation
3. Exploring opportunities for predictions



Phase two – business understandings

r/TheBrewery · Posted by u/Wilder_Mann · Brewer · 1 year ago

Anton Paar EasyDens?

Is anyone using one of these? We're currently using hydrometer and refractometer (I know, I know).
<https://www.anton-paar.com/us-en/products/details/density-and-concentration-meter-easydens/>

This thing is less than half the price of the DMA 35, and seems to use the same technology. Obviously it's not as robust in all the parameters the DMA 35 can measure. I guess my question is, do you guys think the EasyDens is good enough, or should we spring for the DMA 35?

27 Comments · Give Award · Share · Save · Hide · Report · 100% Upvoted

This thread is archived
New comments cannot be posted and votes cannot be cast

SORT BY **BEST**

ThreeBeersIn · Brewer/Owner · 4 points · 1 year ago

After breaking two DMAs over the last 3 years, we switched to EasyDens and functionally, at least for how we were using it, it is almost identical. One of my guys likes the syringe better than the built in plunger on the DMAs too.

Give Award · Share · Report · Save

njcbs · Brewer · 1 point · 1 year ago

How did you break two DMA35s?!

Give Award · Share · Report · Save

maltcheese · 1 point · 1 year ago

They have this insatiable need to meet the ground from height

Give Award · Share · Report · Save

TheSeksi · 1 point · 1 year ago

Just to make sure, the EasyDens does not require a specific calculator for fermented wort like a refractometer?

Give Award · Share · Report · Save

ThreeBeersIn · Brewer/Owner · 2 points · 1 year ago

The presence of alcohol does not mess with the EasyDens, it still accurately reads gravity, pre & post fermentation.

Give Award · Share · Report · Save

r/TheBrewery

33.6k Members · 125 Online

TheBrewery is a professional community focused on issues related to the production of Beer, Wine and Liquor. This subreddit is for the discussion of all things related to the industry such as Business Plans, Marketing, Startup, Licensing, Distribution, and Technical issues.

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COMMUNITY OPTIONS

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u/Nefarious- · Hoptimus Prime

u/whiskeydeltatango · 1 <3 hops

u/solaris79 · Asst to the Regional Brewer

u/ThreeBeersIn · Brewer/Owner

u/AutoModerator · Job stealing robot

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https://www.reddit.com/r/TheBrewery/comments/7w56sr/anton_paar_easydens/

Definitely a great gadget to have

Easy learning curve, works awesome, really glad I bought it. Have been triple checking its accuracy, and its been dead on. I like not having to do a conversion to get close to fg. Was going to buy a hannah digital refractometer, but went with this one instead. Very happy

Was this review helpful? **Yes (0) No (0)** · **Flag as Inappropriate**

March 29, 2019
james V
Purchased 1 month ago

Must be the best thing I have ever done to improve the efficiency of my brews. 50/10

Was this review helpful? **Yes (0) No (0)** · **Flag as Inappropriate**

February 15, 2019
Ivan E Wolozny Gomez R
Purchased 3 months ago

Great device

Very happy with the EasyDens. It's pricey but does the job really wel. I especially like the fact it only needs 2-3 ml of sample to give you a reading. It has really improved and shortened my whole brewing process

Was this review helpful? **Yes (0) No (0)** · **Flag as Inappropriate**

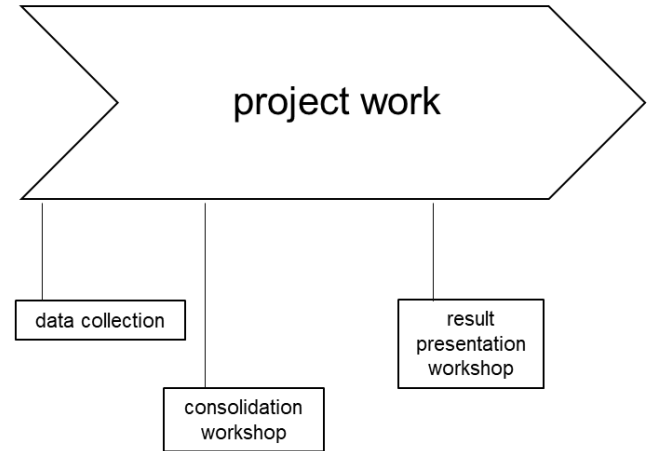
December 14, 2018
Peter S
Purchased 5 months ago

<https://www.morebeer.com/products/easydens-anton-paar.html>



Phase three – project work

- Extracting electronic word of mouth
- Visualization of electronic word of mouth.
- Customer segmentation based on web contents



| 2 months

Phase three – (1) extracting eWOM

Columns:

- Name: Titel
- Extract: Text
- Selector: .first
- Kommentar: content
- Datum: author
- Nutzername: username
- Anzahl Beiträge: profile-posts
- ZP Registrierung: profile-joined
- Wohnort: profile-custom-field

Data Miner

Public | Bookmarks | My recipes

Search

Beitrag2

Columns (7): Titel | Kommentar | Datum | Nutzername | Anzahl Beiträge

Beitrag2

Columns (6): Titel | Kommentar | Datum | Nutzername | Anzahl Beiträge

Beitrag1

Columns (6): Titel | Kommentar | Datum | Nutzername | Anzahl Beiträge

test

Columns (3): Column 1 | Text | anzahl beiträge

Recipe:

Beitrag2

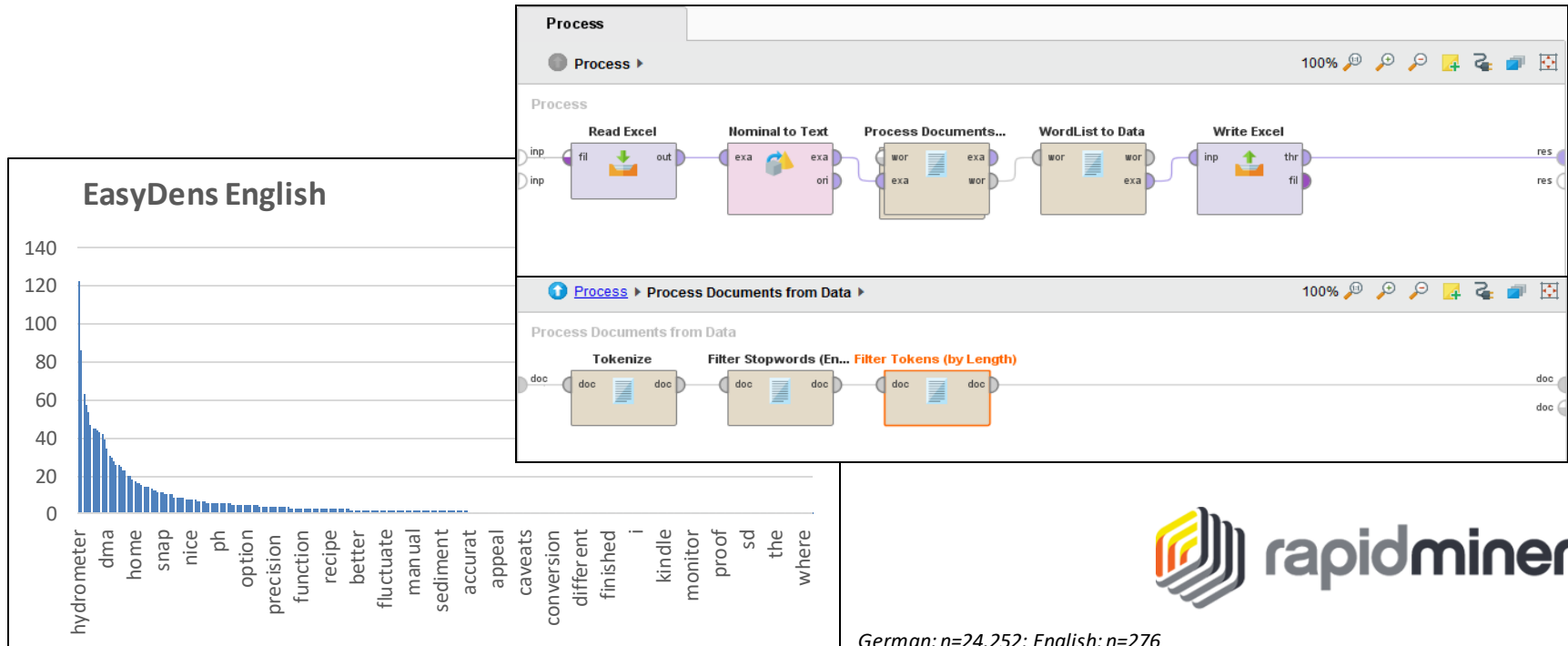
Pagination: New rows: 41 Total: 41

Download

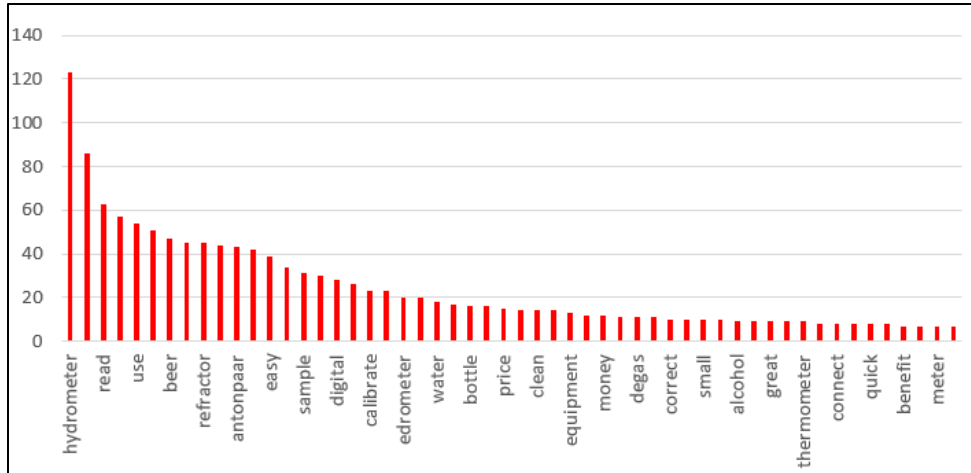
Table:

Titel	Kommentar	Datum	Nutzername	Anzahl Beiträge
			DonaldDuck	
Imperial Yeast W15 "Suburb...	Servus zusammen, hat scho...	Beitrag von Tozzi » Mittwoch...	Tozzi Tozzi	Beiträge: 37
	WLP Übersicht ab Folie 140 ...	Beitrag von tbin » Mittwoch 1...	tbin tbin	Beiträge: 28
	Hallo, ich habe damit gebrau...	Beitrag von DarkUtopia » Mit...	DarkUtopia DarkUtopia	Beiträge: 51
	Danke für die Links! Milk the ...	Beitrag von Tozzi » Mittwoch...	Tozzi Tozzi	Beiträge: 37
	Moin Stephan, hastest Du let...	Beitrag von Bierwisch » Don...	Bierwisch Bierwisch	Beiträge: 31
	Naja also hatte auch schon e...	Beitrag von heizungsrohr » ...	heizungsrohr heizungsrohr	Beiträge: 24
	Ja ich hatte das probiert und ...	Beitrag von Tozzi » Donnerst...	Tozzi Tozzi	Beiträge: 37
	Die Brett. clausenii ist ja eh...	Beitrag von flying » Donnerst...	flying flying	Beiträge: 12
	Danke für den Tipp, die sollt...	Beitrag von Tozzi » Donnerst...	Tozzi Tozzi	Beiträge: 37
	Habe bereits mit beiden (cla...	Beitrag von Bierwisch » Freit...	Bierwisch Bierwisch	Beiträge: 31
	Dummenweise knabbert Bret...	Beitrag von flying » Freitag 1...	flying flying	Beiträge: 12
	Mel, jetzt hab ich eh die falsc...	Beitrag von Tozzi » Freitag 1...	Tozzi Tozzi	Beiträge: 37
	Macht er das auch bei 100%...	Beitrag von flying » Sonntag...	flying flying	Beiträge: 12
	Hatte bei meinem 100% Bret...	Beitrag von heizungsrohr » S...	heizungsrohr heizungsrohr	Beiträge: 24
	heizungsrohr hat geschriebe...	Beitrag von Bierwisch » Dien...	Bierwisch Bierwisch	Beiträge: 31
	Bei S. cer. var. diastaticus ha...	Beitrag von Tozzi » Dienstag...	Tozzi Tozzi	Beiträge: 37
	Moin Stephan, die 3724 schl...	Beitrag von Bierwisch » Mitt...	Bierwisch Bierwisch	Beiträge: 31
	Ich bleib mal noch bei diese...	Beitrag von Tozzi » Dienstag...	Tozzi Tozzi	Beiträge: 37
	Hallo Stephan, dein Maischp...	Beitrag von Malzmagen » Di...	Malzmagen Malzmagen	Beiträge: 84
	So richtig verstehe ich die A...	Beitrag von flying » Dienstag...	flying flying	Beiträge: 12
	Hmm... da liege ich offenbar ...	Beitrag von Tozzi » Dienstag...	Tozzi Tozzi	Beiträge: 37
	Für die Säuerung gibt es ein...	Beitrag von flying » Dienstag...	flying flying	Beiträge: 12

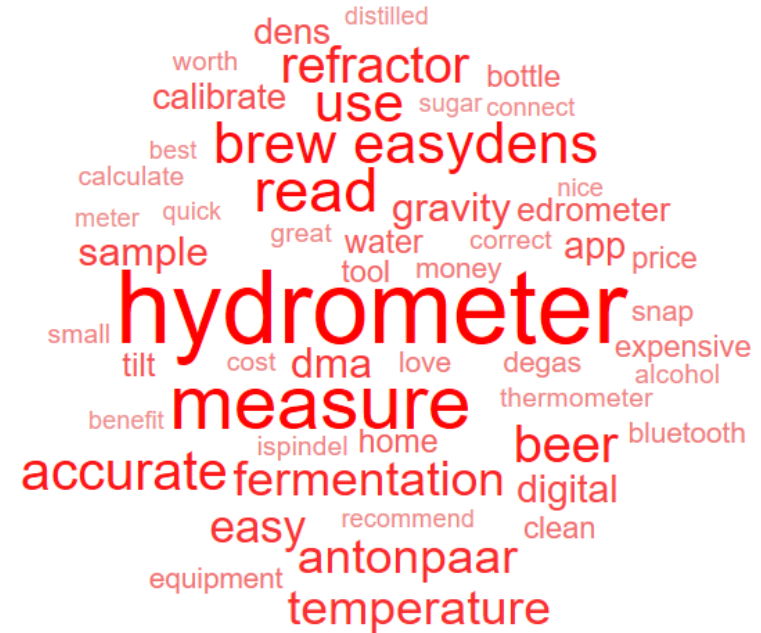
Phase three – (1) extracting eWOM



Phase three – (2) visualization of eWOM

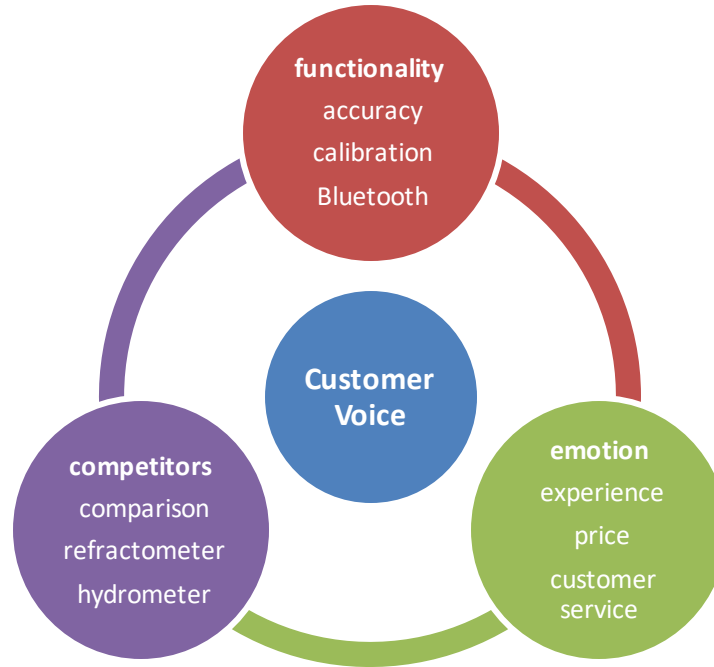


German: n=548; English: n=317



Phase three – (2) visualization of eWOM

„Accurate and totally worth the money if you plan on using it in a semi or professional application.”



„Very easy to set up and use. Readings clear and concise. I like the small amount of work needed to take a reading. I would recommend this to anyone considering purchasing it.”

Phase three – (3) customer segmentation

Cluster I (59.5%)

Positive comments

keywords

- great
- accurate

topics

- measurement results
- usage

“Great resource, especially for those shopping to upgrade their measurements!”

Cluster II (8%)

Lovingly comments

keywords

- love
- simplicity

topics

- experience
- usage

“The EasyDens is so easy to use and I love that it only needs a very small degassed sample to work. Highly recommended!”

Cluster III (32.5%)

Price critical comments

keywords

- price
- hydrometer

topics

- product comparison
- high price

“Unless you just have unlimited budget to throw at your first attempt, I can think of a dozen ways to more effectively spend money in the quest to make good beer.”

English sample, n=126, k means, distance = 0.807, Davies-Bouldin Index = 4.577

Phase three – (3) customer segmentation

The Sceptic

- price critical
- inexperienced



*“I use a hydrometer.”
“\$ 400 is a bit pricey ...”*

The Potential

- price sensitive
- interested



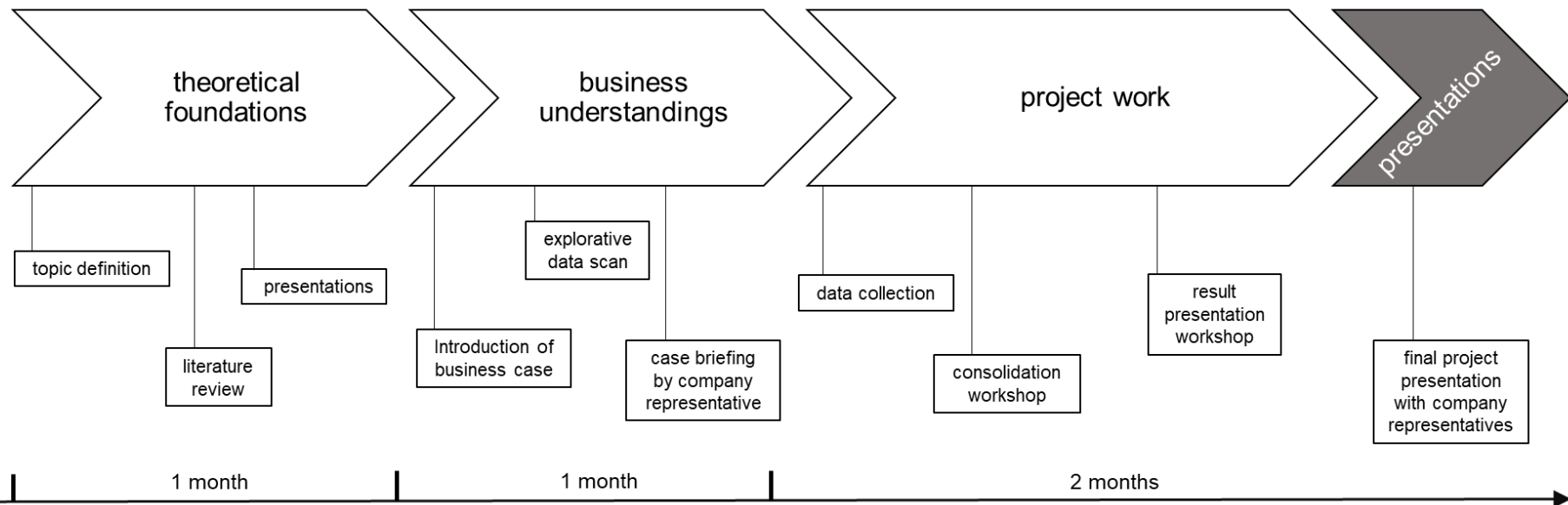
*“Would love to know someone’s
experiences with the EasyDens, I’ve
been eyeing it for a while.”*

The Convinced

- enthusiasm
- intention to recommend
- price acceptance



*“Love my EasyDens!”
“The EasyDens works great!! Fast,
easy, accurate.”*



Conclusion

- Web mining of eWOM proofed to be a promising use case for teaching data analytics to marketing students.
- Using a real case was key for student's motivation and learning experience.
- Business students lost their awe regarding data analytic approaches and were much more motivated to experiment.
- Students understood the phases of the data science life cycle and the necessity of acquiring business understandings.
- A plenty of easy-to-handle software applications enable also non-technicians to realize simple data science projects.

Creating knowledge for future scientific and/or practical application of big data analytics in a marketing context.

thank you very much

Stefan Thalmann
René Hubert Kerschbaumer
Thomas Foscht

