

# **Bachelorarbeiten**

## **Vergabeverfahren und Themen**

Lehrstuhl für Electronic Commerce

Prof. Dr. Bernd Skiera

**Wintersemester 2021/2022**

## Allgemeine Hinweise

Allgemeine Hinweise zu den Voraussetzungen zur Bearbeitung von Bachelorarbeiten finden Sie unter:

<http://www.wiwi.uni-frankfurt.de/studium/studierende/pruefungsorganisation/allgemeine-informationen/bachelorarbeit.html>

**Bitte beachten Sie: Es findet keine Vergabe von Abschlussarbeitsplätzen außerhalb des zentralen QIS-Vergabeverfahrens statt!**

## Fristen

Aktuelle Fristen finden Sie unter:

<http://www.wiwi.uni-frankfurt.de/studium/studierende/pruefungsorganisation/pruefungen/fristen.html>

## Bearbeitungshinweise

Hinweise zum Bearbeiten von Bachelorarbeiten sowie eine Musterdatei des Marketing Schwerpunkts finden Sie unter:

<http://www.marketing.uni-frankfurt.de/studium/anleitung-zum-wissenschaftlichen-arbeiten.html>

## Bewertungsvorlage

Ein erster Anhaltspunkt für die Benotung der Bachelorarbeiten ergibt sich aus folgendem Bewertungsschlüssel:

[https://www.marketing.uni-frankfurt.de/fileadmin/user\\_upload/dateien\\_abteilungen/abt\\_marketing/Dokumente/Bachelorarbeiten/Gutachten-Bachelorarbeit\\_Lehrstuhl\\_Skiera.pdf](https://www.marketing.uni-frankfurt.de/fileadmin/user_upload/dateien_abteilungen/abt_marketing/Dokumente/Bachelorarbeiten/Gutachten-Bachelorarbeit_Lehrstuhl_Skiera.pdf)

## Kontakt bei Fragen zur Vergabe der Bachelorarbeiten

Orian Mahlow



RuW 1.218



mahlow@wiwi.uni-frankfurt.de

## 1. Schritt: QIS Anmeldung

Melden Sie sich vom **14. Oktober 2021 bis zum 27. Oktober 2021** über das QIS-System für einen Bachelorarbeitsplatz an. Wählen Sie hier als Betreuer Prof. Dr. Bernd Skiera aus.

## 2. Schritt: Themenvergabe

Wenige Tage nach Anmeldeschluss (**ab voraussichtlich dem 01. November 2021**) erhalten wir vom Prüfungsamt die Liste aller erfolgreichen Anmeldungen. Wir werden Sie nun unter Ihrer Studenten-Email-Adresse (@stud.uni-frankfurt.de) kontaktieren um die Vergabe der Themen zu koordinieren. Per E-Mail werden wir Ihnen das genaue Vorgehen zur Vergabe der Themen detailliert erläutern. Die Details zur Vergabe der Themen finden Sie auch auf der nächsten Folie.

## 3. Schritt: Termin mit Betreuer

Vereinbaren Sie, zügig nachdem Ihnen Ihr Bachelorarbeitsthema mitgeteilt wurde, einen Termin mit Ihrem Betreuer.

### Kontakt bei Fragen zur Vergabe der Bachelorarbeiten

Orian Mahlow



RuW 1.218



mahlow@wiwi.uni-frankfurt.de

## Es gibt zwei Möglichkeiten für die Findung eines Bachelorarbeitsthemas:

1. Sie wählen ein vom Lehrstuhl vorgeschlagenes Bachelorarbeitsthema („Normalfall“)

Bitte treffen Sie in jedem Fall (auch wenn Sie ein eigenes Thema für Ihre Bachelorarbeit vorschlagen möchten) unter den nachfolgend ausgeschriebenen Themen ein Ranking Ihrer 5 Wunschthemen. Sie bekommen von uns, sofern möglich, ein Thema gemäß Ihrer Themenpräferenzen zugeteilt.

2. Sie schlagen ein eigenes Thema für Ihre Bachelorarbeit vor

Wenn Sie ein eigenes Thema bearbeiten möchten, schicken Sie uns eine Datei in der Sie kurz Ihren Themenvorschlag vorstellen. Erklären Sie auf dort (1) welches Problem Sie lösen möchten, (2) warum Ihr Problem interessant ist und (3) wie Sie das Problem lösen möchten (z.B. welche Daten Sie verwenden wollen). Ein guter Grund für die Verwendung eines eigenen Themas ist beispielsweise eine empirisch ausgerichtete Arbeit, die auf Daten aufbaut, die Ihnen zur Verfügung stehen. Wir sind grundsätzlich auch bereit Bachelorarbeiten zu betreuen, welche zum Ziel haben, die im Rahmen von Datamining-Wettbewerben ausgeschriebenen Problemstellungen zu lösen (Beispiel <https://www.kaggle.com/c/avazu-ctr-prediction>).

Ihren Themenvorschlag werden wir am Lehrstuhl diskutieren. Wenn wir Ihr vorgeschlagenes Thema für geeignet halten, können Sie es bearbeiten. Sollten wir Ihr vorgeschlagenes Thema für ungeeignet halten, bearbeiten Sie das Ihnen vom Lehrstuhl zugeteilte Thema.

## Kontakt bei Fragen zur Vergabe der Bachelorarbeiten

Orian Mahlow



RuW 1.218



mahlow@wiwi.uni-frankfurt.de

In ihrem Studium haben Sie in einer ganzen Reihe an Veranstaltungen Kenntnisse erhalten, die Ihnen das empirische Arbeiten ermöglichen.

Professor Skiera selbst unterrichtet seit vielen Jahren die Veranstaltung PMAR („Marketing Analytics“), die eine Pflichtveranstaltung für die Wahl des Schwerpunkts Management ist. In dieser Veranstaltung haben Sie das Arbeiten mit der Software R/RStudio sowie das Anwenden von Verfahren wie der linearen und der logistischen Regressionsanalyse kennengelernt. Wir erwarten, dass Sie über derartige Kenntnisse verfügen, wobei Sie auch gerne andere Software, z.B. Python oder Stata, einsetzen können.

Ohne ein gewisses empirisches Toolkit, wird Ihnen die Bearbeitung der meisten Themen schwer fallen.

## Kontakt bei Fragen zur Vergabe der Bachelorarbeiten

Orian Mahlow



RuW 1.218



[mahlow@wiwi.uni-frankfurt.de](mailto:mahlow@wiwi.uni-frankfurt.de)

# Ausgeschriebene Themen

## What do the Courts Care about When Deciding GDPR Disputes?

### Overview

The General Data Protection Regulation (GDPR) enables users and authorities to defend their rights to data privacy with complaints and lawsuits. Firms face the risk of being sued and fined with an amount of up to millions of euros. It is difficult for firms to evaluate such risk quantitatively because court decisions are in text, and the key arguments leading to fines are hard to identify. What are the risky issues that frequently trigger legal disputes and fines? Answers to the question help firms to avoid the risks via acting cautiously regarding high risk issues.

The thesis aims to answer the following questions: (1) Which topics appear the most frequently in GDPR dispute descriptions? (2) Which topics correlate to denials and fines in GDPR decisions? (3) How do answers to (1) and (2) differ across countries? The student will either conduct textual analysis with the GDPR Decision Database summarized by GDPRhub, or read the court decisions in the database and build up dataset via manual counting.

### Requirements

- High interest in the topic
- Knowledge of econometrics
- Knowledge of programming skills (Python or R)

### Language

English

### Literature

**Berger, J./ Humphreys, A./ Ludwig, S./ Moe, W. W./ Netzer, O./ Schweidel, D. A.** (2020), "Uniting the Tribes Using Text for Marketing Insight", *Journal of Marketing*, 84 (1), 1-25.

**Noyb** (2020), "GDPRhub: The New Public Wiki With Local GDPR Decisions!", <https://noyb.eu/en/gdprhub-new-public-wiki-local-gdpr-decisions>

**Ruohonen, J./ Hjerpe, K.** (2020), "Predicting the Amount of GDPR Fines", *Proceedings of the First International Workshop "CAiSE for Legal Documents"*, 3-14

**Voisin, G./ Ruth, B./ Simon, A./ Clara, C./ Lupe, S./ Ester, V.** (2019), "ICO, CNIL, German and Spanish DPA revised Cookies Guidelines: Convergence and Divergence", <https://www.twobirds.com/en/news/articles/2019/global/ico-and-cnil-revised-cookies-guidelines-convergence-and-divergence>

### Contact

Supervisor:  
Yuxi Jin / Prof. Dr. Bernd Skiera



RuW 1.202



y.jin@wiwi.uni-frankfurt.de

## Investigating User Attitude toward Cookie Banners

### Overview

With the implementation of the General Data Protection Regulation (GDPR), websites display cookie banners to ask for user consent to process personal data. Journal articles and news suggest that users have negative feelings towards cookie banners, which harms user experience when browsing. Such negative attitudes also impair the effectiveness of privacy protection because users would not reveal their privacy preferences by making choices consciously. How to better design cookie banners to alleviate the negative feelings? An analysis of user attitude toward cookie banners helps websites to know what users like and dislike, and to improve cookie banner design accordingly. Policymakers would take user attitude as references when drafting guidelines and updates on privacy rules regarding cookie banners.

This thesis aims to answer the following questions: (1) Are users indeed having complaints about cookie banners? (2) Which topics correlate to negative/positive feelings? To answer the questions, the student could collect data by scraping tweets regarding cookie banners, and perform textual analysis.

### Requirements

- High interest in the topic
- Knowledge of econometrics
- Knowledge of programming skills (Python or R)

### Language

English

### Literature

**Dawson, C.** (2019), "Is the Cookie Law outdated and frankly just annoying?", <https://tamebay.com/2019/10/is-the-cookie-law-outdated-and-frankly-just-annoying.html>

**Kulyk, O./ Gerber, N./ Hilt, A./ Volkamer, M.** (2020), "Has the GDPR hype affected users' reaction to cookie disclaimers", *Journal of Cyber Security*, 6 (1), 1-14.

**Kulyk, O./ Gerber, N.** (2018), "'This Website Uses Cookies': Users' Perceptions and Reactions to the Cookie Disclaimer", *Proceedings of European Workshop on Usable Security (EuroUSEC)*

### Contact

Supervisor:  
Yuxi Jin / Prof. Dr. Bernd Skiera



RuW 1.202



y.jin@wiwi.uni-frankfurt.de



## Investigating Firms' Marketing Focus – Consistency Between Disclosure and Perception

### Overview

It is very common for U.S. listed firms to hold a conference call every fiscal quarter to discuss the financial results of the reporting period. In those calls, the firms' executives talk about their strategy and provide an outlook for the future. By analyzing such calls, researchers aim to find out how much a firm focuses on marketing topics. However, it is unclear whether such disclosed marketing focus from insiders (here managers) is also perceived by outsiders, such as newspapers.

The aim of this thesis is to empirically investigate the consistency between firms' marketing focus as disclosed by insiders and perceived by outsiders, and its impact on firm performance. You will obtain transcripts of earnings calls. One potential way to proceed is to: (1) collect firm-related news articles from a data source such as Nexis Uni; (2) use textual analysis to measure marketing focus; (3) investigate the consistency of focus measured using different text sources; (4) use a simple firm performance metric to investigate if higher consistency between the insiders and outsiders leads to better firm performance.

### Requirements

- High interest in the topic
- Programming skills in R or Python

### Language

English / German

### Literature

**Berger, J., Humphreys, A., Ludwig, S., Moe, W.W., Netzer, O., Schweidel, D.A.** (2020), "Uniting the Tribes: Using Text for Marketing Insight", *Journal of Marketing*, 84(1), 1–25.

**Han, S., Reinartz, W., Skiera, B.** (2021), "Capturing Retailers' Brand and Customer Focus", *Journal of Retailing*.

**Hassan, T.A., Hollander, S., vanLent, L., Tahoun, A.** (2019), "Firm-Level Political Risk: Measurement and Effects", *Quarterly Journal of Economics*, 134(4), 2135–2202.

**Homburg, C., Theel, M., Hohenberg, S.** (2020), "Marketing Excellence: Nature, Measurement, and Investor Valuations", *Journal of Marketing*, 84(4), 1–22.

### Contact

Simeng Han / Prof. Dr. Bernd Skiera



RuW 1.236



han@wiwi.uni-frankfurt.de

## Does the Disclosed Marketing Focus Influence a Firm's IPO Performance?

### Overview

For U.S. firms, filing a Form S-1 (IPO prospectus) is one of the first steps in going public. The Form S-1 “offers investors their first detailed glimpse of a firm's business model and financial statements” (Loughran and McDonald, 2013, p.307). Since IPOs usually do not have a large amount of tangible information, investors typically need to pay more attention to the intangible information to understand a firm's business strategy. Although marketing is an essential part of business strategy, it is unclear whether a firm's marketing focus disclosed in the S-1 has an influence on investors' evaluation of the firm.

The aim of this thesis is to empirically investigate the potential influence of a firm's disclosed marketing focus in S-1 filing on its IPO performance. One potential way to proceed is to: (1) collect S-1 filings from the Securities and Exchange Commission's (SEC) Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system; (2) use textual analysis to measure marketing focus; (3) use firms IPO performance metrics (e.g. IPO first-day returns) to investigate whether marketing focus has an influence on IPO performance

### Requirements

- High interest in the topic
- Programming skills in R or Python

### Language

English / German

### Literature

**Berger, J., Humphreys, A., Ludwig, S., Moe, W.W., Netzer, O., Schweidel, D.A.** (2020), “Uniting the Tribes: Using Text for Marketing Insight”, *Journal of Marketing*, 84(1), 1–25.

**Han, S., Reinartz, W., Skiera, B.** (2021), “Capturing Retailers' Brand and Customer Focus”, *Journal of Retailing*.

**Loughran, T., McDonald, B.** (2013), “IPO First-Day Returns, Offer Price Revisions, Volatility, and Form S-1 Language”, *Journal of Financial Economics*, 109(2), 307–326.

**Saboo, A. R., Grewal, R.** (2012), “Stock Market Reactions to Customer and Competitor Orientations: The Case of Initial Public Offerings”, *Marketing Science*, 32(1), 70–88.

### Contact

Simeng Han / Prof. Dr. Bernd Skiera



RuW 1.236



han@wiwi.uni-frankfurt.de

## Thinking AI and Feeling AI in Service: A Theoretical View

### Overview

The service industry has increasingly adopted artificial intelligence (AI) in shopping, dining, investing, and many more areas. Huang and Rust (2021) characterize service AI into thinking AI and feeling AI. Thinking AI refers to AI's traditional role in information processing and logical reasoning. Feeling AI refers to AI's ability to recognize, respond to, and influence human emotion. Despite the wide application of AI, the theory behind AI lacks attention and a comprehensive literature review.

In this thesis, you will conduct an extensive literature review to answer the following questions: (1) What are the theoretical foundations of thinking AI and feeling AI? (2) How can theory in human thinking and human feeling be applied to thinking and feeling AI? (3) How can these theories guide researchers and practitioners in applying thinking and feeling AI in the service industry?

### Requirements

- High interest in the topic
- Extensive literature review

### Language

English

### Literature

**Picard, R. W.** (2004), "Toward Machines with Emotional Intelligence", Proceedings of the First International Conference on Informatics in Control, Automation and Robotics, 29-30.

**Hoffman, D. L., Novak, T. P.** (2018), "Consumer and Object Experience in the Internet of Things: An Assemblage Theory Approach", Journal of Consumer Research, 44(6), 1178-1204.

**Huang, M. H., Rust, R. T.** (2018), "Artificial Intelligence in Service", Journal of Service Research, 21(2), 155-172.

**Huang, M. H., Rust, R. T.** (2021), "Engaged to a Robot? The Role of AI in Service", Journal of Service Research, 24(1), 30-41.

### Contact

Shunyao Yan / Prof. Dr. Bernd Skiera



RuW 1.236



yan@wiwi.uni-frankfurt.de

## Textual Analysis Beyond Sentiment: Exploring Information-Seeking Argument Mining

### Overview

Business research and practice widely use textual analysis, particularly sentiment analysis, to monitor consumer and brand emotions from unstructured data. However, sentiment analysis falls short of automatically identifying the reasons behind changes in sentiment, and these reasons behind sentiment are usually the fundamental interests of business researchers and practitioners. Information-seeking argument mining, a recent advance in natural language processing, provides us with the opportunity to extract these reasons at scale. Platforms such as ArgumenText (<https://www.argumentsearch.com/>) support this task by providing ready-to-use software.

One way to understand the potential of information-seeking argument mining in business research is to: (1) collect textual data that you think is suitable for information-seeking argument mining (2) apply information-seeking argument mining to the data and derive results that show additional insights information-seeking argument mining contributes beyond sentiment mining.

### Requirements

- High interest in the topic
- Programming skills such as R or Python
- Basic econometric knowledge

### Language

English

### Literature

**Skiera, B., Yan, S., Daxenberger, J., Dombois, M., & Gurevych, I.** (2021), "Information-Seeking Argument Mining: A Step Towards Identifying Reasons in Textual Analysis to Improve Services", Available at SSRN: <https://ssrn.com/abstract=3851093> or <http://dx.doi.org/10.2139/ssrn.3851093>

**Stab, C., Daxenberger, J., Stahlhut, C., Miller, T., Schiller, B., Tauchmann, C., Eger, S. & Gurevych, I.** (2018), "Argumenttext: Searching for Arguments in Heterogeneous Sources", Proceedings of NAACL-HLT 2018: Demonstrations.

**Schoenmueller, V., Netzer, O. & Stahl, F.** (2020), "The Polarity of Online Reviews: Prevalence, Drivers and Implications", Journal of Marketing Research, 57(5), 853-877.

### Contact

Shunyao Yan / Prof. Dr. Bernd Skiera



RuW 1.236



yan@wiwi.uni-frankfurt.de

## Measuring User Data Protection on Websites

### Overview

Tools like <https://webbkoll.dataskydd.net/de/> enable users to analyze websites with respect to their data-protecting policies, but the results from these tools are very technical and therefore hard to understand for the majority of users. As a consequence, it is very difficult for users to understand how well their data is protected on a website. Knowledge about the level of data protection on a website is important for users, for instance, when users need to make the decision if they want to share their data with a website or not by registering at the website.

Thus, there is a need for a simple and transparent way of reporting the level of user data protection on a website. The aim of the thesis is to develop such a reporting standard and apply the reporting standard to e.g. the German Top 50 websites. The vision of the thesis is to provide a better understanding to users on well their data is protected on websites beyond legal requirements.

### Requirements

- High interest in Topic
- High interest in Information Systems Research

### Language

German / English

### Literature

**Beke, F. T. / Eggers, F. / Verhoef, P. C.** (2018), "Consumer Informational Privacy: Current Knowledge and Research Directions", *Foundations and Trends® in Marketing*, 11 (1), 1-71.

**Martin, K. D. / Borah, A. / Palmatier, R. W.** (2016), "Data Privacy: Effects on Customer and Firm Performance," *Journal of Marketing*, 81 (1), 36-58.

**Maass M./ Wichmann P. / Pridöhl H. / Herrmann D.** (2017) "PrivacyScore: Improving Privacy and Security via Crowd-Sourced Benchmarks of Websites". In: Schweighofer E., Leitold H., Mitrakas A., Rannenber K. (eds) *Privacy Technologies and Policy*. Springer, Cham, 178-191.

**Wieringa, J. / Kannan, P. K. / Ma, X. / Reutterer, T. / Risselada, H. / Skiera, B.** (2021), "Data Analytics in a Privacy-Concerned World", *Journal of Business Research*, 122, 915-925.

### Contact

Rene Laub / Prof. Dr. Bernd Skiera



RuW 1.202



rlaub@wiwi.uni-frankfurt.de

## When is an App privacy-intrusive?

### Overview

(Smartphone) Apps differ widely in the amount and type of data they collect from the user and the purpose of the data collection. While certain data types are necessary for an App's functionality, such as the user's location for a navigation App, other data collection practices seem surprising, such as a weather App collection health-related data for advertising. Sharing data with an App always increases the risk that the user's data will be misused or shared with a third party, ultimately threatening the user's privacy. However, it is hard to tell the user if an App is collecting "more data than common" in most cases. Thus, a user cannot make an informed decision about the privacy-intrusiveness of an App, before downloading the App.

The thesis aims to develop a measurement for an App's privacy-intrusiveness and apply the measurement to a set of Apps.

### Requirements

- High interest in Topic
- High interest in Information Systems Research

### Language

German / English

### Literature

**Beke, F. T. / Eggers, F. / Verhoef, P. C.** (2018), "Consumer Informational Privacy: Current Knowledge and Research Directions", *Foundations and Trends® in Marketing*, 11 (1), 1-71.

**Kummer, M., / Schulte, P.** (2019), "When Private Information Settles the Bill: Money and Privacy in Google's Market for Smartphone Applications." *Management Science*, 65 (8), 3470-3494.

**Wottrich, V. M. / Van Reijmersdal, E. A. / Smit., E. G.** (2018), "The Privacy Trade-off for Mobile App Downloads: The Roles of App Value, Intrusiveness, and Privacy Concerns." *Decision Support Systems* 106, 44-52.

**Appvisory** (2021), "Apps und Datenschutz Report 2020", available online: <https://appvisory.com/news/apps-und-datenschutz-2020>

### Contact

Rene Laub / Prof. Dr. Bernd Skiera



RuW 1.202



rlaub@wiwi.uni-frankfurt.de

## Deep-Dive into the Unit Economics of Public Apparel e-Commerce Firms

### Overview

Recent IPOs of apparel e-commerce firms such as AboutYou, MyTheresa, Hylete, and Revolve have earned much attention in the media. With e-commerce booming, investors need to assess the value of those firms to decide which firms to place bets on. To do this, investors increasingly analyze the *unit economics* (UE) of those firms. For apparel e-commerce firms, that means analyzing the profitability of the fundamental *unit* that makes up the business: the customer. The profitability of a customer is a function of key marketing metrics: acquisition costs, spend per user, and customer retention. Luckily, these firms are disclosing related data in their investor reports. This thesis aims to leverage publicly disclosed customer data of apparel e-commerce firms for a unit economics analysis, that is, for an analysis of the profitability of customers. A comparison of the different firms' unit economics allows to further identify differences in their business model, and insight into whether these differences are reflected in public market valuations.

### Requirements

- A love for detective-like work: searching, collecting and drilling down into numbers
- Interest in startups, venture capital, and data-driven analyses of business models
- A curious mind

### Language

German / English

### Literature

**ABOUT YOU Company Presentation** (2021),  
[https://ir.aboutyou.de/download/companies/58027/CompanyPresentation/21-07-21\\_ABOUT\\_YOU\\_company\\_presentation.pdf](https://ir.aboutyou.de/download/companies/58027/CompanyPresentation/21-07-21_ABOUT_YOU_company_presentation.pdf). (retrieved 01/08/2021)

**Ripplinger, S.** (2019), "Chewy's IPO: Customer Analytics and Valuation Using Probability Models",  
<https://www.steveripplinger.com/posts/chewys-ipo>. (accessed 20/08/2021)

**Tribe Capital** (2021), "Unit Economics and The Pursuit of Scale Invariance", Tribe Capital Essays,  
<https://tribecap.co/unit-economics-and-the-pursuit-of-scale-invariance/>. (accessed 20/08/2021)

### Contact

Nils Gandlau / Prof. Dr. Bernd Skiera



RuW 1.202



[gandlau@wiwi.uni-frankfurt.de](mailto:gandlau@wiwi.uni-frankfurt.de)

## Estimating Customer Equity of a B2B SaaS company by analyzing publicly disclosed customer data

### Overview

If you bought stocks of Software-as-a-Service (SaaS) companies such as Dropbox, Shopify, Datadog, and HubSpot three years ago, your return on investment would be +192%. The reason SaaS companies are so valuable is their loyal, ever-expanding customer base. On average, customers of these firms generate more revenues with every year they stay. Customers of Dropbox constantly expand their cloud storage. Customers of HubSpot constantly purchase more features from their software suite. An ever-expanding customer base is directly linked to a company's stock price via customer equity. Customer equity is the net present value of the customer base, which is a function of overall customer behavior. Thus, if we want to take a big step towards understanding why SaaS firms are so highly valued, we first need to estimate customer equity. In this thesis, you should pick one (B2B) SaaS firm that discloses customer data to forecast aggregate customer behavior into the future to ultimately estimate the value of the existing customer base.

### Requirements

- A love for detective-like work: searching, collecting and drilling down into numbers
- Interest in understanding how to value startups and high-growth businesses
- A curious, analytical mindset

### Language

German / English

### Literature

**McCarthy, D.M., Fader, P.S., Hardie, B.G.S.** (2017), "Valuing Subscription-Based Businesses Using Publicly Disclosed Customer Data", *Journal of Marketing* 81(1), 17–35.

**Ripplinger, S.** (2019), "Chewy's IPO: Customer Analytics and Valuation Using Probability Models", <https://www.steveripplinger.com/posts/chewys-ipo>. (accessed 12/08/2021)

**Theta Equity Partners** (2019), "Slack: Very Attractive Unit Economics But With a Very Long Payback Period", *Theta Equity Partners Blog*, <https://www.thetaequity.com/slack-ipo>. (accessed 02/08/2021)

**Wiesel, T., Skiera, B., Villanueva, J.** (2008), "Customer Equity: An Integral Part of Financial Reporting", *Journal of Marketing* 72(2), 1–14.

### Contact

Nils Gandlau / Prof. Dr. Bernd Skiera



RuW 1.202



[gandlau@wiwi.uni-frankfurt.de](mailto:gandlau@wiwi.uni-frankfurt.de)



## Process or product innovation in the sharing economy

### Overview

The pursuit of differentiation through product innovation is widely regarded as the basis for success in the traditional market economy. In contrast, the sharing economy (e.g., include companies such as Uber, Airbnb) has relied heavily on business model innovation (i.e., different ways platforms create value by enabling transactions between providers and users) rather than product innovation (Kumar et al., 2018). This lack of product differentiation is evidenced by the fact that some sharing economy platforms use largely identical products. For example, Chinese scooter manufacturer Ninebot supplies products to both Lime and Bird. Similarly, many cars used for Uber are also registered to Lyft (Eckhardt et al., 2019).

This thesis should investigate the role of process innovation and product innovation for sharing economy companies. This could be addressed, for example, by analyzing financial reports with text mining methods to examine the development of process and product innovation over time.

### Requirements

- High interest in the topic
- Interest in analytical tasks
- Programming skills in R or Python

### Language

German / English

### Literature

**Eckhardt, G. M., Houston, M. B., Jiang, B., Lamberton, C., Rindfleisch, A., & Zervas, G.** (2019). Marketing in the sharing economy. *Journal of Marketing*, 83(5), 5-27.

**Kumar, V., Lahiri, A., & Dogan, O. B.** (2018). A strategic framework for a profitable business model in the sharing economy. *Industrial Marketing Management*, 69, 147-160.

### Contact

Jennifer Jiang / Prof. Dr. Bernd Skiera



RuW 1.218



jiang@wiwi.uni-frankfurt.de

## What types of value do participants seek in the sharing economy?

### Overview

Traditional marketing thinking assumes that consumers are utility maximizers who seek to minimize costs and maximize financial gains (Bettman, Luce, and Payne 1998). However, in the sharing economy (e.g., include companies such as Uber or Airbnb), these financial incentives can be complemented by social concerns. Although previous research suggests that economic motivations tend to dominate (Lamberton and Rose 2012), a study by Chung et al. (2021) shows that participants in the sharing economy highly value the opportunity to engage in the act of sharing and the connection with others.

This thesis should investigate the role of social versus economic motivations among the sharing economy participants. For example, forum posts with text mining methods could be analyzed to identify different motives of the participants.

### Requirements

- High interest in the topic
- Interest in analytical tasks
- Programming skills in R or Python

### Language

German / English

### Literature

**Bettman, J. R., Luce, M. F., & Payne, J. W.** (1998). Constructive consumer choice processes. *Journal of Consumer Research*, 25(3), 187-217.

**Chung, J., Johar, G. V., Li, Y., Netzer, O., & Pearson, M.** (2021). Mining Consumer Minds: Downstream Consequences of Host Motivations for Home Sharing Platforms. *Journal of Consumer Research*.

**Eckhardt, G. M., Houston, M. B., Jiang, B., Lamberton, C., Rindfleisch, A., & Zervas, G.** (2019). Marketing in the sharing economy. *Journal of Marketing*, 83(5), 5-27.

**Lamberton, C. P., & Rose, R. L.** (2012). When is ours better than mine? A framework for understanding and altering participation in commercial sharing systems. *Journal of Marketing*, 76(4), 109-125.

### Contact

Jennifer Jiang / Prof. Dr. Bernd Skiera



RuW 1.218



jiang@wiwi.uni-frankfurt.de

## Smartphone Location Data in Marketing

### Overview

Smartphone location data has played a prominent role during the pandemic. The public was able to follow in real-time to which degree people stayed at home during the lockdown and how fast movement picked up again. Apart from such pandemic-related insights, we can use smartphone location data to answer substantial marketing research questions. You can, for example, use the daily number of store visitors to estimate the effects of marketing campaigns. Or track consumer trends — which fast-food chain becomes more or less popular over time?

This thesis aims (a) to provide an overview of marketing studies that have used location data, (b) suggest potential new research areas where scientists could use such data, and (c) pick one of those questions and perform a small empirical study with it. We will provide you with a smartphone location data set fitting your empirical question.

### Requirements

- Programming skills in a statistical language such as R (preferred), Python, Stata
- Basic econometric knowledge

### Language

English (preferred) / German

### Literature

**Athey, S., Blei, D., Donnelly, R., Ruiz, F. & Schmidt, T.** (2018), "Estimating Heterogeneous Consumer Preferences for Restaurants and Travel Time Using Mobile Location Data". *AEA Papers and Proceedings* 108, 64–67.

**Ossola, A.** (November 23, 2020), "Meet the Company Helping Scientists Study Covid-19 With Your Location Data", *Quartz* <https://qz.com/1934587/who-is-safegraph-the-company-giving-your-location-data-to-covid-researchers>, accessed July 8, 2021.

**Yavorsky, D., Honka, E. & Chen, K.** (2021), "Consumer Search in the U.S. Auto Industry: The Role of Dealership Visits". *Quantitative Marketing and Economics* 19, 1–52.

### Contact

Lukas Jürgensmeier / Prof. Dr. Bernd Skiera



RuW 1.202



[juergensmeier@wiwi.uni-frankfurt.de](mailto:juergensmeier@wiwi.uni-frankfurt.de)

## Pick a Problem and Solve It: Developing and Publishing an R Package

### Overview

Science increasingly relies on open-source statistical software such as R. Scientists can easily share software in their specific domain through R packages. Tools such as `devtools` have made it comparatively easy to write your own software and distribute it as an R package.

This thesis aims to (a) pick a relevant problem in business and economics that would benefit from a collection of functions making this problem easier to solve. You then (b) write R code that solves this problem and (c) document it systematically in package documentation and vignettes. As the last step, if your package provides value to the scientific community, we encourage you to submit it to CRAN. You will write your thesis in the style of articles in “The R Journal,” but we will assign considerable weight to the problem’s technical solution. In that process, we encourage you to learn and apply software engineering best practices such as version control and unit tests.

### Requirements

- Programming skills in R and the ambition to become an expert
- Motivation to learn R software development

### Language

English

### Literature

**The R Journal** (2021), <https://journal.r-project.org/>, accessed July 9<sup>th</sup>, 2021.

**Wickham, H., Bryan, J.** (2015), “R Packages: Organize, Test, and Share Your Code”, <https://r-pkgs.org/>

### Contact

Lukas Jürgensmeier / Prof. Dr. Bernd Skiera



RuW 1.202



[juergensmeier@wiwi.uni-frankfurt.de](mailto:juergensmeier@wiwi.uni-frankfurt.de)

## Exploring the Market of Chrome Browser Extensions

### Overview

Browser extensions – small pieces of software that enhance browser functionality – are used by millions of Chrome users worldwide (ChromeStats, 2021). Chrome users can install browser extensions from a Chrome Web Store where developers publish such extensions. However, Google shut down paid browser extensions in February 2021, and developers can no longer receive financial compensation for their efforts.

This thesis aims to describe how a market for Chrome browser extensions currently operates. Some of the motivating questions are: Why should developers create free Chrome browser extensions for users? Did Google force Chrome users to trade their privacy for free browser extensions? A student can use [CRXcavator](#) or [ChromeStats](#) as the data source(s) for tackling the research aim.

### Requirements

- High interest in the topic
- Willingness to collect and analyse necessary data (help with data collection will be provided)
- Experience with statistical software (preferably R, Python, STATA, Excel)

### Language

English

### Literature

**Krebs, B.** (2021), "Is Your Browser Extension a Botnet Backdoor?", KrebsonSecurity, <https://krebsonsecurity.com/2021/03/is-your-browser-extension-a-botnet-backdoor/>. (accessed 06/08/2021).

**Peters, J.** (2020), "Google is shutting down paid Chrome extensions", The Verge, <https://www.theverge.com/2020/9/22/21451111/google-paid-chrome-extension-monetize-shut-down-end>. (accessed 06/08/2021).

**Martin, D. M., Smith, R. M., Brittain, M., Fetch, I., & Wu, H.** (2001), "The Privacy Practices of Web Browser Extensions", Communications of the ACM, 44(2), 45-50. <https://doi.org/10.1145/359205.359226>.

### Contact

Karlo Lukic / Prof. Dr. Bernd Skiera



RuW 1.202



lukic@wiwi.uni-frankfurt.de

## Are Chrome Browser Extensions Less Risky After Google Updates?

### Overview

Browser extensions add new features to users' browsers. Users of the Google Chrome browser can install extensions – written by developers – in the Chrome Web Store. However, installing (free) browser extensions invites privacy risks for users. For example, in January 2020, Google removed 500 extensions that were "...injecting malicious ads into users' web browsing sessions and uploading private browsing data to servers without their consent" (Iyer, 2020). To combat such developers' efforts in the future, Google decided to show the extensions' privacy practices to users as of January 2021. Yet, a month later, Google discontinued paid browser extensions. So, Chrome users cannot financially compensate developers for their efforts anymore.

This thesis should investigate if Google Chrome extensions are less privacy risky for users after Google updates. A student can use [CRXcavator](#) or [ChromeStats](#) as the data source(s) for tackling that research aim.

### Requirements

- High interest in the topic
- Willingness to collect and analyse necessary data (help with data collection will be provided)
- Experience with statistical software (preferably R, Python, STATA, Excel)

### Language

English

### Literature

**Heule, S., Devon R., Alejandro R., & Deian S.** (2015), "The Most Dangerous Code in the Browser", 15th Workshop on Hot Topics in Operating Systems, 1-7. <https://www.usenix.org/conference/hotos15/workshop-program/presentation/heule>.

**Iyer, K. S.** (2020), "500+ Malicious Google Chrome Extensions Removed From the Web Store", Techworm, <https://www.techworm.net/2020/02/chrome-extensions-removed-web-store.html>. (accessed 05/08/2021).

**Popa, B.** (2020), "Google Announces Major Google Chrome Extensions Privacy Update", Softpedia News, <https://news.softpedia.com/news/google-announces-major-google-chrome-extensions-privacy-update-531576.shtml>. (accessed 05/08/2021).

### Contact

Karlo Lukic / Prof. Dr. Bernd Skiera



RuW 1.202



lukic@wiwi.uni-frankfurt.de

## The Renaissance of Contextual Targeting

### Overview

A large share of digital advertising is based on techniques such as behavioural targeting that require the users' personal data. However, recent and future regulation of privacy increase the burden for publishers and advertisers to store and use personal data. As a reaction, the advertising and publishing industry increasingly focuses on targeting consumers with advertising related to context, such as the content and topics of a website or article.

The bachelor thesis should investigate this emerging trend by conducting a systematic literature review covering various research disciplines, such as management, marketing, journalism and information systems. Furthermore, the literature can be supplemented with examples and challenges from business practice. The findings of the thesis are relevant as they may reveal gaps of existing research, identify business problems and address directions for further research.

### Requirements

- High interest in the topic
- Ability to structure a broad stream of literature

### Language

German or English

### Literature

**Broder, A., Fontoura, M., Josifovski, V., Riedel, L.** (2007), "A Semantic Approach to Contextual Advertising", Proceedings of the 30th annual international ACM SIGIR conference on Research and development in information retrieval, ACM, 559-566.

**Digiday** (2021), "Digiday Research: Contextual Targeting will have its Renaissance", <https://digiday.com/media/digiday-research-contextual-targeting-will-have-its-renaissance/> (retrieved 12/08/2021).

**Zhang, K., Katona, Z.** (2012), "Contextual Advertising", Marketing Science, 31(6), 980-994.

### Contact

Timo Müller-Tribbensee / Prof. Dr. Bernd Skiera



RuW 1.202



mueller-tribbensee@wiwi.uni-frankfurt.de

## The Cost of an Ad-Free Digital World

### Overview

In today's digital environment, a vast share of the content and service is financed by advertising. Users see ads everywhere, for example when reading news articles online, searching the web, watching videos or using apps. Some websites already offer ad-free subscription models, but little is known about the total cost a user would need to compensate for in order to experience all digital content and service without any advertising.

The aim of the bachelor thesis is to estimate a compensation price that an average user would need to pay for a completely ad-free digital experience. One way to reach this aim is to search for information about advertising revenues, identify the main components, make reasonable assumptions and break it down to an individual level. Moreover, it could be interesting to further distinguish between different user types by integrating information about demographics or usage behavior.

### Requirements

- High interest in the topic
- Strong ability to structure a broad question and analysis

### Language

German or English

### Literature

**Bandt** (2020), "Revealed: The Cost of an 'Ad-Free' Internet", <https://www.bandt.com.au/revealed-the-cost-of-an-ad-free-internet/> (retrieved 10/08/2021).

**Statista** (2021), "Digital Advertising Report 2021. Statista Digital Market Outlook - Market Report", <https://de.statista.com/statistik/studie/id/42327/dokument/digital-advertising-report/> (retrieved 10/08/2021).

**Tåg, J.** (2009), "Paying to Remove Advertisements", Information Economics and Policy, 21(4), 245-252.

**Vox** (2019), "The Cost of an Ad-Free Internet: \$35 more per Month", <https://www.vox.com/recode/2019/6/24/18715421/internet-free-data-ads-cost> (retrieved 10/08/2021).

### Contact

Timo Müller-Tribbensee / Prof. Dr. Bernd Skiera



RuW 1.202



mueller-tribbensee@wiwi.uni-frankfurt.de



## Firms' Carbon Footprint: Contrasting Consumer Perceptions and Actual Data

### Overview

Today, consumers increasingly recognize the environmental impact of their consumption behavior. Thus, managing and communicating a firm's carbon footprint has become an important part of some firms' marketing strategy. For instance, firms such as Amazon heavily advertise their climate goals in the media. The question arises: How knowledgeable are consumers actually about firms' carbon footprints? That is, can consumers differentiate firms with higher vs. lower emissions (both within and across different industries) at all?

To answer this question, the student should combine data from two sources: First, secondary data from the carbon disclosure project (CDP, see <https://www.cdp.net/>), which contains self-disclosed emission data for many firms. Second, primary data from a survey (run by the student) of actual consumers.

### Requirements

- High interest in the topic
- Motivation to design, run and evaluate a small survey

### Language

The thesis can be written in German or English.

### Literature

**Bertini, M. / Buehler, S. / Halbheer, D. / Lehmann, D. R. (2020)**, "Carbon Footprinting and Pricing Under Climate Concerns", Journal of Marketing, OnlineFirst: [doi:10.1177/0022242920932930](https://doi.org/10.1177/0022242920932930)

**Depoers, F. / Jeanjean, T. / Jérôme, T. (2016)**, "Voluntary Disclosure of Greenhouse Gas Emissions: Contrasting the Carbon Disclosure Project and Corporate Reports.", Journal of Business Ethics, 134(3), 445-461.

**Meinrenken, C. J. / Chen, D. / Esparza, R. A. / Iyer, V. / Paridis, S. P. / Prasad, A. / Whillas, E. (2020)**, "Carbon Emissions Embodied in Product Value Chains and the Role of Life Cycle Assessment in Curbing Them.", Scientific Reports, 10(1), 1-12.

### Contact

Maximilian Matthe / Prof. Dr. Bernd Skiera



RuW 1.233



matthe@wiwi.uni-frankfurt.de

## Helping Universities to Better Understand their Students' Needs

### Overview

As firms compete for customers, so do universities compete for students. While firms regularly consult market research to better understand their customer needs, doing so is not very prevalent among universities. The aim of this thesis is to empirically investigate if (and to what extent) universities could better understand their students' needs – e.g., for segmenting the market and designing or promoting their Master programs.

To answer this question, the student is granted access to a novel market research tool based on online search tasks. Using this tool, the student needs to gather a sample of student probands willing to participate in the study. Finally, the student needs to analyze and evaluate the resultant data (e.g., using simple regression or clustering techniques).

### Requirements

- High interest in the topic, motivation to run and evaluate a student survey
- Basic understanding of marketing analytics – for instance, as covered in the “Marketing Analytics”-course (PMAR)

### Language

The thesis can be written in German or English.

### Literature

**Lilien, G. L. / Rangaswamy, A (2004)**, “Marketing Engineering: Computer-Assisted Marketing Analysis and Planning.”, Trafford Publishing, Victoria, BC, Canada.

**Timoshenko, A., & Hauser, J. R. (2019)**, “Identifying Customer Needs from User-Generated Content.”, *Marketing Science*, 38(1), 1-20.

**Urban, G. L. / Hauser, J. R. (2004)**, “Listening in’ to Find and Explore New Combinations of Customer Needs.”, *Journal of Marketing*, 68(2), 72-87.

### Contact

Maximilian Matthe / Prof. Dr. Bernd Skiera



RuW 1.233



matthe@wiwi.uni-frankfurt.de

## Thinking AI and Feeling AI in Service: A Theoretical View

### Overview

The service industry has increasingly adopted artificial intelligence (AI) in shopping, dining, investing, and many more areas. Huang and Rust (2021) characterize service AI into thinking AI and feeling AI. Thinking AI refers to AI's traditional role in information processing and logical reasoning. Feeling AI refers to AI's ability to recognize, respond to, and influence human emotion. Despite the wide application of AI, the theory behind AI lacks attention and a comprehensive literature review.

In this thesis, you will conduct an extensive literature review to answer the following questions: (1) What are the theoretical foundations of thinking AI and feeling AI? (2) How can theory in human thinking and human feeling be applied to thinking and feeling AI? (3) How can these theories guide researchers and practitioners in applying thinking and feeling AI in the service industry?

### Requirements

- High interest in the topic
- Extensive literature review

### Language

English

### Literature

**Picard, R. W.** (2004), "Toward Machines with Emotional Intelligence", Proceedings of the First International Conference on Informatics in Control, Automation and Robotics, 29-30.

**Hoffman, D. L., Novak, T. P.** (2018), "Consumer and Object Experience in the Internet of Things: An Assemblage Theory Approach", Journal of Consumer Research, 44(6), 1178-1204.

**Huang, M. H., Rust, R. T.** (2018), "Artificial Intelligence in Service", Journal of Service Research, 21(2), 155-172.

**Huang, M. H., Rust, R. T.** (2021), "Engaged to a Robot? The Role of AI in Service", Journal of Service Research, 24(1), 30-41.

### Contact

Shunyao Yan / Prof. Dr. Bernd Skiera



RuW 1.236



yan@wiwi.uni-frankfurt.de

## Textual Analysis Beyond Sentiment: Exploring Information-Seeking Argument Mining

### Overview

Business research and practice widely use textual analysis, particularly sentiment analysis, to monitor consumer and brand emotions from unstructured data. However, sentiment analysis falls short of automatically identifying the reasons behind changes in sentiment, and these reasons behind sentiment are usually the fundamental interests of business researchers and practitioners. Information-seeking argument mining, a recent advance in natural language processing, provides us with the opportunity to extract these reasons at scale. Platforms such as ArgumenText (<https://www.argumentsearch.com/>) support this task by providing ready-to-use software.

One way to understand the potential of information-seeking argument mining in business research is to: (1) collect textual data that you think is suitable for information-seeking argument mining (2) apply information-seeking argument mining to the data and derive results that show additional insights information-seeking argument mining contributes beyond sentiment mining.

### Requirements

- High interest in the topic
- Programming skills such as R or Python
- Basic econometric knowledge

### Language

English

### Literature

**Skiera, B., Yan, S., Daxenberger, J., Dombois, M., & Gurevych, I.** (2021), "Information-Seeking Argument Mining: A Step Towards Identifying Reasons in Textual Analysis to Improve Services", Available at SSRN: <https://ssrn.com/abstract=3851093> or <http://dx.doi.org/10.2139/ssrn.3851093>

**Stab, C., Daxenberger, J., Stahlhut, C., Miller, T., Schiller, B., Tauchmann, C., Eger, S. & Gurevych, I.** (2018), "Argumenttext: Searching for Arguments in Heterogeneous Sources", Proceedings of NAACL-HLT 2018: Demonstrations.

**Schoenmueller, V., Netzer, O. & Stahl, F.** (2020), "The Polarity of Online Reviews: Prevalence, Drivers and Implications", Journal of Marketing Research, 57(5), 853-877.

### Contact

Shunyao Yan / Prof. Dr. Bernd Skiera



RuW 1.236



yan@wiwi.uni-frankfurt.de

## Predicting Election Outcomes from Twitter Data

### Overview

Social media and especially primarily text-based platforms such as Twitter are extensively used for political deliberation. While some researchers claim (Tumasjan et al. 2011) that the mere number of party mentions can predict election results in a brief timeframe before an election, these results have been questioned (Jungherr et al. 2012). Inaccuracies of polling agencies (e.g., Forsa and Allensbach) in forecasting actual election outcomes contribute to the ongoing appeal of electoral prediction from alternative sources, e.g., Twitter data.

This research shall investigate how accurately Twitter data can predict weekly election surveys ("Sonntagsumfragen"). You will collect Twitter posts through the Twitter API and then examine the ability to use this data to predict weekly election surveys. Thereby you will help shed light on the validity of using Twitter data for election prediction.

Your study will assess the validity of alternative data sources in electoral prediction.

### Requirements

- Programming skills in R and the ambition to become an expert
- Interest in multidisciplinary research
- Initial knowledge of NLP approaches preferable

### Language

English

### Literature

**Gayo-Avello, D.** "A Meta-Analysis of State-of-the-Art Electoral Prediction From Twitter Data." *Social Science Computer Review* 31, no. 6 (December 1, 2013): 649–79. <https://doi.org/10.1177/0894439313493979>.

**Jungherr, A., Jürgens, P., Schoen, H.** "Why the Pirate Party Won the German Election of 2009 or The Trouble With Predictions?" *Social Science Computer Review* 30, no. 2 (May 1, 2012): 229–34. <https://doi.org/10.1177/0894439311404119>.

**Tumasjan, A., Sprenger, T. O., Sandner, P. G., Welpe, I. M.** "Election Forecasts With Twitter: How 140 Characters Reflect the Political Landscape." *Social Science Computer Review* 29, no. 4 (November 1, 2011): 402–18. <https://doi.org/10.1177/0894439310386557>.

### Contact

Orian Mahlow / Prof. Dr. Bernd Skiera



RuW 1.218



mahlow@wiwi.uni-frankfurt.de