Vereinigung von Freunden der Technischen Universität zu Darmstadt e.V. – Ernst-Ludwig-Hochschulgesellschaft

KSB-Stiftung – Förderungen 2019

Marc Berninger M.Sc. Fachbereich Rechts- und Wirtschaftswissenschaften Betriebswirtschaftslehre/Unternehmensführung Professor Dr. Dirk Schiereck	**Konferenz** Young Water Leader Summit (YWLS) Singapur, 07.-12.06.2019
Max Fleckenstein M.Sc. Fachbereich Chemie Clemens-Schöpf-Institut für Org. Chemie und Biochemie Professor Dr. Michael Reggelin	**Konferenzreise** 31st International Symposium on Chirality Bordeaux, Frankreich, 14.-17.07.2019
Christian Flore M.Sc.-Ing., M.Sc.-Wirtsch.-Ing. Fachbereich Rechts- und Wirtschaftswissenschaften Unternehmensfinanzierung Professor Dr. Dirk Schiereck	**Forschungsaufenthalt** University of Sydney Sydney, Australien, 01.04.-31.05.2019
Christian Friedrich M.Sc. Wirtsch.-Ing.-MB Fachbereich Rechts- und Wirtschaftswissenschaften Rechnungswesen, Controlling und Wirtschaftsprüfung/BWL 4 Professor Dr. Reiner Quick	**Konferenzreise und Doktoranden Workshop** 1ST EISAM WORKSHOP ON PREVENTING ACCOUNTING SCANDALS: PRACTICES AND PRACTITIONERS Berlin, 14.-15.03.2019 NHH „BEHAVIORAL AUDITING RESEARCH" Bergen, Norwegen 10.-15.05.2019
Eduard Gaar M.Sc. Fachbereich Rechts- und Wirtschaftswissenschaften Betriebswirtschaftslehre/Unternehmensführung Professor Dr. Dirk Schiereck	**Konferenz** Annual Conference der Academiy of Economics & Finance St. Petersburg, Florida, USA, 06.-09.02.2019
David Häfner M.Sc. Fachbereich Rechts- und Wirtschaftswissenschaften Betriebswirtschaftslehre/Unternehmensführung Professor Dr. Dirk Schiereck	**Konferenz** Annual Conference der Academiy of Economics & Finance St. Petersburg, Florida, USA, 06.-09.02.2019
Jianan He M.Sc. Fachbereich Rechts- und Wirtschaftswissenschaften Betriebswirtschaftslehre/Unternehmensführung Professor Dr. Dirk Schiereck	**Konferenz** Annual Conference der Academiy of Economics & Finance St. Petersburg, Florida, USA, 06.-09.02.2019
Julia Kredel Fachbereich Chemie Ernst-Berl-Institut für Techn. und Makromol. Chemie Dr.-Ing. Markus Gallei	**Konferenz** Sixth International Conference in Multifunctional, Hybrid and Nanomaterials Sitges, Spanien, 11.-15.03.2019
Makusee Masae Fachbereich Rechts- und Wirtschaftswissenschaften Produktion und Supply Chain Management Professor Dr. Christoph Glock	**Konferenzreise** 24th International Symposium on Logistics (ISL 2019) Würzburg, 14.-17.07.2019
Nicolas Pappert M.A. Fachbereich Rechts- und Wirtschaftswissenschaften Rechnungswesen, Controlling und Wirtschaftsprüfung/BWL 4 Professor Dr. Reiner Quick	**Konferenz** EDEN DOCTORAL SEMINAR On AUDIT RESEARCH Brüssel, Belgien, 18.-22.08.2019
Sven Winkelhaus Fachbereich Rechts- und Wirtschaftswissenschaften Produktion und Supply Chain Management Professor Dr. Christoph Glock	**Konferenzreise** IFAC MIM 2019 Berlin, 27.-30.08.2019

Vereinigung von Freunden der Technischen Universität zu Darmstadt e.V. – Ernst-Ludwig-Hochschulgesellschaft

KSB-Stiftung – Abschlussbericht über die Verwendung der Fördermittel 2019

Nachwuchswissenschaftler

Marc Berninger M.Sc.
Fachbereich Rechts- und Wirtschaftswissenschaften
Betriebswirtschaftslehre/Unternehmensführung
Professor Dr. Dirk Schiereck

Konferenzreise
Annual Conference der Academiy of Economics & Finance
St. Petersburg, Florida, USA, 06. bis 09. Februar 2019

Abstract

The influence of textual tone on underpricing - the explanatory power of machine learning based approaches

This paper analyzes the explanatory power of machine learning based approaches in comparison to classical word list based approaches in determining the sentiment of financial documents. We therefore use a unique sample of 852 IPO prospectuses from the years between 2007 and 2017 and apply two different machine-learning based approaches (Naïve Bayes Classifier, Linear Support Vector Classifier) as well as a traditional approach (Bag of Words) to determine the sentiment of the prospectuses. Our results are twofold: We develop some extensions of the Bag of Words-method and carve out strengths and limitations of the individual approaches. We furthermore find a significant positive relation between the textual tone and underpricing which stands in contrast to most recent literature.

JEL classification:

Vereinigung von Freunden der Technischen Universität zu Darmstadt e.V. – Ernst-Ludwig-Hochschulgesellschaft

KSB-Stiftung – Abschlussbericht über die Verwendung der Fördermittel 2019

Nachwuchswissenschaftler

Max Fleckenstein M.Sc.
Fachbereich Chemie
Clemens-Schöpf-Institut für Organische Chemie und Biochemie
Professor Dr. Michael Reggelin

Konferenzreise
31st International Symposium on Chirality
Bordeaux, Frankreich, 14. bis 17. Juli 2019

Abstract
Die Teilnahme des Kongresses in Bordeaux stellt für mich persönlich als auch in wissenschaftlicher Hinsicht einen absoluten Erfolg dar. Ich möchte kurz erläutern, wie mich die Tagungsreise geprägt hat und welchen Einfluss Sie auf meine Arbeit nimmt. Zunächst ist zu erwähnen, dass sich nur eine Handvoll Arbeitsgruppen weltweit mit der Thematik befassen, die ich in meiner Doktorarbeit erforsche. Die Chirality hat eben dieses Themengebiet aufgegriffen. Eine Reise nach Frankreich stellte für mich folglich ein absolutes Muss dar. Von besonderer Bedeutung waren dabei die Beiträge von M. Suginome und E. Yashima, welche die Vorreiter auf ihren Gebieten darstellen und meine Forschung in erheblichem Maße tangieren. Diese Vorträge und die intensive Kommunikation mit anderen Teilnehmern zeigten mir neue Ansatzpunkte auf, die ich im Zuge meiner weiteren Arbeit in Darmstadt untersuchen werde. Vor allem die ausführlichen Diskussionen mit einem französischen Kollegen waren besonders fruchtbar.
Die rein themenspezifische Weiterbildung und die Gewinnung neuer Ideen für die Dissertation konnten zusätzlich durch das Kennenlernen aktueller Fragestellungen in der organischen Chemie ergänzt werden. So konnte ich an spannenden Vorträgen zu fundamentalen Fragen wie der Homochiralität des Lebens oder neuer Chiralitätsausprägungen, beiwohnen. Rückblickend lässt sich die Tagung aus wissenschaftlicher Sicht für mich als ein Erfolg bewerten. Weiterhin stellt das Symposium für mich eine persönliche Bereicherung dar. Nicht nur das ich mich mit vielen Personen vernetzen konnte, ich konnte auch einen Ausschnitt der französischen Kultur erleben. Für die Unterstützung und das Möglichwerden dieser einmaligen Erfahrung will ich der KSB-Stiftung und den Freunden und Förderern meinen verbindlichsten Dank aussprechen.

Nachwuchswissenschaftler

Christian Flore M.Sc.-Ing., M.Sc.-Wirtsch.-Ing.
Fachbereich Rechts- und Wirtschaftswissenschaften
Unternehmensfinanzierung
Professor Dr. Dirk Schiereck

Forschungsaufenthalt

University of Sydney

Sydney, Australien, 1. April bis 31. Mai 2019

Report

Introduction: During his stay at Technische Universität Darmstadt in 2017 I got to know Dr. Henry Leung, who is a Senior Lecturer at the University of Sydney Business School. Dr. Leung is an accomplished researcher in the field of social media investor sentiment. We decided to work together on a project which will be the last chapter of my PhD thesis. As we became more specific as to our research question we started the data gathering process in 2018 and Mr. Leung invited me for a research visit. In 2019 from April to May we were finally able to make it happen. This visit allowed us and especially me a period of intense empirical work which significantly progressed our paper and thereby also my PhD. Besides the professional advancements, this trip also allowed for personal growth. I got to know new people, a new culture and made cherished memories. In the next three chapters I will focus on the professional part of my stay and explain the scientific goals, the relevance and degree of innovation of our project, and I will give a more detailed explanation the work performed during my stay.

Scientific goals: In the era of information technology, stock related information can be easily found on the internet, especially on social media. Thus, data in social media hold important information to predict the movement of stock prices. Classical efficient market theory assumes investors to be rational and security prices to incorporate all available information, thereby reflecting the intrinsic firm value. This view is not always consistent with anecdotal observations about investor behaviour which suggest that investors sometimes act sentimental. So far, prior studies had to employ indirect proxies for investor sentiment. Our project will generate a more

direct measure of investors sentiment by measuring it directly through traditional and social media news. The ascent of big data and social media during the past decade presents a novel opportunity to observe investor sentiment through these social "peepholes" and may enable us to directly measure, at least to a certain degree, investor sentiment and determine its effect on future share prices. Applied research methods include factor models for asset pricing, econometric models for volatility and risk measurement and investor behaviour.

Relevance and degree of innovation of the project: Our study is the first to directly measure investor sentiment from observable human interactions on a large scale from different social media sources and use this information to explain future stock returns. We believe that the methodologies developed in asset pricing research during the past 25 years in combination with the increased interconnection of people through social media which could be observed during the past 10 years and the novel computational means available for empirical research allows for new possibilities to explore new aspects of one of the oldest questions in finance research: What drives security prices?

The use of social media and online message forums as a financial information dissemination and gathering platform in Australia, US and Europe has been growing exponentially in the past decade and the impact of investor sentiment based research is expected to increasingly play an important role in determining the efficiency of financial markets. The relevance and degree of innovation of this project are extremely high.

Work during stay at the University of Sydney: Before my stay at the University of Sydney we had collected all articles from Seeking Alpha, a relatively sophisticated social media stock message board, since 2006. This led to a total of approximately 100,000 articles. For StockTwits, a less sophisticated social media stock message board, we had collected all messages relating to more than 7,000 individual stocks, leading to a database of approximately 30 million messages. We had further access to RavenPack news stories, which relate to traditional news media and delivers us another 17 million observations. We used the CRSP and Computstat databases for stock prices and company fundamentals.

Through the collective work with my host Henry Leung we significantly progressed our analysis. At the end of my stay the empirical analyses were finished to a large part and some writing has already been done. My empirical work over the two months can be generally structured into the following steps:

Social media data cleaning, sentiment measurement and aggregation
In a first step we reviewed the collected social media data in detail and performed plausibility checks. Next, we cleaned the data from any collection errors. Then we proceeded to the sentiment measurement. On the one hand we had information on self-disclosed sentiment. This means that the authors/users gave information regarding the sentiment of their messages, i.e., positive or negative. This type of sentiment information has thus far very seldomly been

investigated. We further defined traditional measures of investor sentiment, which are based on the percentage of negative words used as defined in a reference dictionary. Finally, we aggregated our sentiment data on a daily and monthly level in order to match it to our stock data.

Portfolio Analysis on daily and monthly level

Our first empirical goal was to measure the returns of portfolios which have been formed based on past sentiment measures. Although this does not enable us to control for different explaining factors, this yields a first indication to whether sentiment predicts stock returns. We therefore matched our sentiment data to our daily and monthly stock returns. We then calculated the portfolio returns based on negative, neutral, and positive sentiment. Especially on a daily level the results showed a very strong predictability for SeekingAlpha articles and self-disclosed sentiment which delivers an annualized return of 173%. Although each other sentiment source seemed to have some degree of predictability, this measure greatly outperformed the others.

Factor regressions on daily and monthly level

Our first results were promising, but we had to rule out that our measured effect is just a disguised size, or valuation effect. This could be the case if, e.g., positive sentiment stocks are always small and the effect is therefore driven by size rather than sentiment. We therefore conducted factor regressions on zero investment long-short portfolios, which go long on positive sentiment stocks and short and negative sentiment stocks. This enables us to control for known common risk factors. The results clearly showed that these common risk factors don't explain our results and that the effect really is driven by investor sentiment.

Panel regressions on daily and monthly level

To further strengthen our results, we employed another way to show the influence of sentiment on stock returns, by using abnormal returns in a panel framework. The basic idea is comparable to the approach with factor regressions, that is to show that no other factors are responsible for our hypothesized sentiment effect. The results strongly confirmed our hypothesis. Using the panel framework, we further investigated the relationship between sentiment and liquidity measures, like the bid-ask spread and trading volume. The results showed that the SeekingAlpha platform drives stock returns while the StockTwits platform drives liquidity. The general interpretation is that StockTwits seems to be more related to noise, i.e., uninformed trading, while SeekingAlpha is clearly related to actual stock returns.

Closing remarks: Professionally and personally my stay at the University of Sydney was a brilliant success and I am very happy to have been able to do it. I sincerely and cordially thank the Freunde der TU Darmstadt for their support. It has helped me a great deal to undertake this research visit.

KSB-Stiftung – Abschlussbericht über die Verwendung der Fördermittel 2019

Nachwuchswissenschaftler

Christian Friedrich M.Sc. Wirtsch.-Ing.-MB
Fachbereich Rechts- und Wirtschaftswissenschaften
Rechnungswesen, Controlling und Wirtschaftsprüfung/BWL 4
Proessor. Dr. Reiner Quick

Konferenzreise und Doktoranden Workshop
1ST EISAM WORKSHOP ON PREVENTING ACCOUNTING SCANDALS: PRACTICES AND PRACTITIONERS
Berlin, 14. bis 15. März 2019

NHH „BEHAVIORAL AUDITING RESEARCH"
Bergen, Norwegen 10. bis 15. Mai 2019

Abstract
Dank der Förderung durch die KSB-Stiftung hatte ich die einmalige Gelegenheit, im März und Mai 2019 an zwei prägenden Forschungsveranstaltungen teilzunehmen, die mich fachlich als jungen Forscher weitergebracht und mit den weltweit besten Professoren ihrer Teildisziplinen zusammengebracht hat.

In Monaco konnte ich mein Forschungsprojekt „How Do Western Economies And Cultures Pave The Way For Corporate Scandals? Insights From Inquiry Commissions On The Diesel Emission Scandal" präsentieren, in welchem ich eine qualitative Analyse des VW-Skandals anhand der Anhörungsprotokolle verschiedener parlamentarischer Untersuchungsausschüsse durchführe. Unter den Teilnehmern war mit Yves Gendron einer der bekanntesten qualitativen Forscher meiner Disziplin, mit dem ich im Nachgang ein sehr anregendes Gespräch führen konnte und der sich bereit erklärt hat, mich bei dem Projekt weiter zu beraten.

In Bergen konnte ich an einem exklusiven Kurs (drei Professoren für acht Teilnehmer) für experimentelle Wirtschaftsprüfungsforschung teilnehmen, der von Rick Hatfield, dem weltweit führenden Experimentalforscher auf diesem Gebiet, und Anna Gold, einer der führenden europäischen Forscherinnen, geleitet wurde. Die intensiven Diskussionen über vier Tage hinweg haben einen engen Kontakt unter den Teilnehmern und mit den Professoren ermöglicht. Außerdem konnte ich in diesem Zuge ein Projekt mit dem Titel „The effect of non-audit service failures and perceptions of general auditor favorability on auditor reputation" entwerfen und intensives Feedback der Professoren einholen.

Nachwuchswissenschaftler

Eduard Gaar M.Sc.
Fachbereich Rechts- und Wirtschaftswissenschaften
Betriebswirtschaftslehre/Unternehmensführung
Professor Dr. Dirk Schiereck

Konferenzreise
Annual Conference der Academiy of Economics & Finance
St. Petersburg, Florida, USA, 06. bis 09. Februar 2019

Abstract

Competence and return expectations: Horne bias with international investors

The share of foreign stocks in institutional and private portfolios is smaller than one could theoretically expect regarding the missing boundaries for international investments. This effect is called "harne bias" and describes a strong tendency towards domestic stocks. Cross-country studies reveal that investors feel more competent regarding domestic stocks. This asymmetric assessment of competence is connected with an asymmetric assessment of probability judgments about return expectations. To test this asymmetric assessment and to analyse the underlying effects that might cause distortions in investors' expectations, we conducted a cross country study in Germany and Russia comparing three groups of students' judgments about an identical set of German, Polish and Russian stocks.

Results show that the Russian and German test groups feel more competent about domestic stocks while the international group is indifferent. Subjective probability distributions of stock returns are significantly less dispersed and at least partly more optimistic for stocks associated with high competence levels than for stocks with low competence levels.

Nachwuchswissenschaftler

David Häfner M.Sc.
Fachbereich Rechts- und Wirtschaftswissenschaften
Betriebswirtschaftslehre/Unternehmensführung
Professor Dr. Dirk Schiereck

Konferenzreise
Annual Conference der Academiy of Economics & Finance
St. Petersburg, Florida, USA, 06. bis 09. Februar 2019

Abstract

The Informational Role of Financial Analysts: An Empirical Analysis of Stock Liquidity and Information Asymmetry

The informational role of financial analysts, especially the capability of financial analysts to unveil private information remains puzzling and has been widely discussed in the academic literature.

In this paper, we examine the effect of the decision of financial analysts to initiate or drop the coverage of a stock on stock liquidity and the level of information asymmetry. Using daily bid-ask spreads and the Amihud (2002) illiquidity measure we examine the effect of the decision of an analyst to drop or initiate the coverage of a stock. We find that a change in the number of analysts covering a stock significantly affects stock liquidity and information asymmetry, suggesting that analysts, at least to some extent, act as a source of information for investors.

In a second step, we employ a difference-in-differences approach by using daily data of 1,645 US firms and 1,276 EU firms to investigate the influence of the EU-wide implementation of the EU Markets in Financial Instruments Directive (MiFID II) in January 2018, which for the first time forces that investment research costs have to be paid explicitly rather than through soft-dollar commissions. We find that the implementation of MiFID II leads to a significant decrease in the average number of financial analysts covering a stock. This change comes along with a significant decrease in stock liquidity. Given these distinctive findings, this paper highlights the informational role of financial analysts under an exogenous financial shock such as MiFID II.

Vereinigung von Freunden der Technischen Universität zu Darmstadt e.V. – Ernst-Ludwig-Hochschulgesellschaft

KSB-Stiftung – Abschlussbericht über die Verwendung der Fördermittel 2019

Nachwuchswissenschaftlerin

Jianan He M.Sc.
Fachbereich Rechts- und Wirtschaftswissenschaften
Betriebswirtschaftslehre/Unternehmensführung
Professor Dr. Dirk Schiereck

Konferenzreise
Annual Conference der Academiy of Economics & Finance
St. Petersburg, Florida, USA, 06. bis 09. Februar 2019

Abstract

The Source of Value in Financial Intermediary Consolidation: Evidence from Insurance Intermediaries
By analysing mergers and acquisitions (M&A) from 1995 to 2015 in the global insurance intermediary sector, we focus on the transaction service providers who are enthused to integrate their resources. Our findings reveal that frequent acquirers gain significantly in M&A, who have completed multiple transactions in the observation period. We find no support for the cash flow hypothesis that cash-rich firms conduct M&A more often and decrease shareholder's wealth. In contrast, frequent acquirers are driven by great growth potentials, proxied by high market-to-book and low leverage. They tend to be better risk controllers, proved by lower idiosyncratic risk and more active engagement in cross-border deals and acquiring public targets. Our findings highlight the rationality of experienced acquirers and go in line with the practice that more and more firms build professional in-house M&A teams to manage the integration.

Vereinigung von Freunden der Technischen Universität zu Darmstadt e.V. – Ernst-Ludwig-Hochschulgesellschaft

KSB-Stiftung – Abschlussbericht über die Verwendung der Fördermittel 2019

Nachwuchswissenschaftlerin

Julia Kredel
Fachbereich Chemie
Ernst-Berl-Institut für Technische und Makromolekulare Chemie
Dr.-Ing. Markus Gallei

Konferenzreise
Sixth International Conference in Multifunctional, Hybrid and Nanomaterials
Sitges, Spanien, 11. bis 15. März 2019

Abstract
The preparation of highly ordered colloidal architectures has attracted significant attention and is a rapidly growing field for various applications e.g. as sensors, absorbers and membranes. A promising technique for the preparation of elastomeric inverse opal films relies on tailored core/shell particle architectures and application of the so-called melt-shear organisation technique. As core materials both organic polymer particles or inorganic particles can be used as a template, followed by a semi-continuous stepwise emulsion polymerisation for the synthesis of the soft shell material.

For this purpose, the core/shell particles are exposed to moderate pressure and temperature witch softens the shell material and whereby a radial flow profile for the polymer mass is induced. Noteworthy colloidal crystals based on the hard spheres can be obtained inside the comparably soft matrix material, which is formed by the particle shell. After subsequent cross-linking reaction, the core particles can be removed. As a result free-standing inverse opal films with well-ordered voids are obtained.

The use of functional monomers as shell-material offers the possibility to create opal and inverse opal films with striking optical properties according to Bragg´s law of diffraction. Herein the present work, we focus on a convenient route for the preparation of copolymers featuring highly fluorinated building blocks. Due to the adjustable amount of fluorinated moieties inside the shell material, the chemical resistance and thermal stability is significantly improved.

One of the most important properties of the herein developed fluorine-containing particles are their low surface energy and low refractive index, which paves a new way towards novel functional materials for application in fields of coatings and optical sensors

Nachwuchswissenschaftler

Makusee Masae

Fachbereich Rechts- und Wirtschaftswissenschaften

Produktion und Supply Chain Management

Professor Dr. Christoph Glock

Konferenzreise

24th International Symposium on Logistics (ISL 2019)

Würzburg, 14. bis 17. Juli 2019

Purpose of this paper: In manual picker-to-parts order picking systems, order pickers walk or drive through the picking area in the warehouse to retrieve the items requested by customers. The time order pickers spend on travelling through the warehouse accounts for almost 50% of the total order picking time. Therefore, reducing this non-value adding time will lead to a reduction in the total warehouse operating cost. Thus, the purpose of this paper is to develop a procedure for optimally routing order pickers through warehouses following the leaf layout.

Design/methodology/approach: The order picker routing problem in a warehouse is identical to the problem of finding the shortest picking tour in the graph representation of the warehouse. For optimally routing order pickers through the warehouse, we adapt the algorithms of Ratliff and Rosenthal (1983) and Roodbergen and de Koster (2001) that are based on an Eulerian graph and a dynamic programming procedure to the case of the warehouse layout investigated in this paper. The proposed procedure is evaluated in comprehensive numerical experiments.

Findings: The proposed solution procedure generates the minimum-length order picking tour and thus contributes to lowering the cost of warehousing. Its computational time is low, which enables warehouse managers to create efficient order picking routes quickly.

Value: The majority of the procedures developed for order picker routing are only applicable to conventional warehouses with parallel picking aisles. For non-conventional warehouses, only a few optimal algorithms have been developed so far, which makes it difficult to efficiently manage these warehouses in practice. This paper contributes to closing this research gap by developing an optimal order picker routing strategy for non-conventional warehouses following the leaf layout. The results of the paper at hand are valuable for warehouse managers that are interested in improving the efficiency of their order picking operations in the leaf warehouse.

Research limitations/implications (if applicable): One limitation of our proposed algorithm is that it is only applicable to a warehouse with a leaf layout. To apply it to other warehouse layouts, a modification is required.

Vereinigung von Freunden der Technischen Universität zu Darmstadt e.V. – Ernst-Ludwig-Hochschulgesellschaft

KSB-Stiftung – Abschlussbericht über die Verwendung der Fördermittel 2019

Nachwuchswissenschaftler

Nicolas Pappert M.A.
Fachbereich Rechts- und Wirtschaftswissenschaften
Rechnungswesen, Controlling und Wirtschaftsprüfung/BWL 4
Professor Dr. Reiner Quick

Konferenzreise
EDEN DOCTORAL SEMINAR On AUDIT RESEARCH
Brüssel, Belgien, 18. bis 22. August 2019

Abstract

Vom 18. bis 22. Februar 2019 fand das "EDEN Doctoral Seminar on Audit Research" an der Universität von Antwerpen statt. Das Seminar richtete sich an Nachwuchswissenschaftler im Bereich der Wirtschaftsprüfung aus ganz Europa. Neben einem Überblick über die wichtigsten Forschungsmethoden wurde der aktuelle Forschungsstand der internationalen Audit Forschung präsentiert. An dem einwöchigen Seminar referierten neben der Organisatorin Professorin Ann Vanstraelen (Maastricht University) auch Professorin Linda Myers (University of Tennessee Knoxville) und Professor Mark Peecher (University of Illinois). Alle drei weisen Publikations-erfahrung in den wichtigsten internationalen Journals vor. Vom Fachgebiet RCW nahm Nicolas Pappert an dem Seminar Teil. Die Teilnahme wurde dankenswerterweise von der KSB-Stiftung und der Vereinigung von Freunden der Technischen Universität zu Darmstadt gefördert.

Vereinigung von Freunden der Technischen Universität zu Darmstadt e.V. – Ernst-Ludwig-Hochschulgesellschaft

KSB-Stiftung – Abschlussbericht über die Verwendung der Fördermittel 2019

Nachwuchswissenschaftler

Sven Winkelhaus

Fachbereich Rechts- und Wirtschaftswissenschaften

Produktion und Supply Chain Management

Professor Dr. Christoph Glock

Konferenzreise

IFAC MIM 2019

Berlin, 27. bis 30. August 2019

Abstract

Within the fourth industrial revolution, customer requirements become more individual and enterprises are confronted with new challenges. On the one hand, Industry 4.0 addresses this paradigmatic pull-perspective and adds a push perspective, where new technologies like the Internet-of-Things and cyber-physical systems enable new applications. Both aspects have a tremendous influence on logistics tasks, since a mass production logistics is not albe to serve a mass customization demand without an increase in cost or a decrease in quality. Hence, Logistics 4.0 sysemts have to be developed that serve these new necessities.

Based on the derived definition of Logistics 4.0, a systematic literature review waas conducted assessing the state of knowledge on Logisitics 4.0. This leads tot he identification of a research gap on human factors. Within the conference contribution, this research gap was systematically addressed by showing the importance of human factors in logistics systems and examining the human factors aspects as derived in the review. It could be outlined that most contributions in the sample try to enable humans to fit to a given work system instead of designing a work system that fits to the given human capabilities. Grounding on that, future research neccessities are outlined concderning the incorporation of human factors in teh research of Industry 4.0 systems and the system design approaches in Industry 4.0. These could support the implementations of Industry 4.0 as well as future strategic decisions on product and system development.