

Book of Abstracts



European
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EurOMA 2018

25th International EurOMA Conference
24-26 June 2018 | Budapest, Hungary

Dear Colleague,

We are delighted to invite you to the **25th International EurOMA Conference** in Budapest, Hungary, 24-26 June 2018. The conference will be hosted by the *Budapest University of Technology and Economics, Széchenyi István University*, and the *Institute for Computer Science and Control* (Hungarian Academy of Sciences).

The theme of EurOMA 2018 is:

„To Serve, to Produce and to Servitize in the Era of Networks, Big Data, and Analytics.”

This theme aims at fulfilling EurOMA’s vision in the new era of networks, big data, and advanced data analytics by giving theory-based, practically relevant, generalizable and innovative answers to current and emerging issues in services, manufacturing and capability development (that is servitization, at its core). We also intend to broaden EurOMA’s base in by highlighting the interfaces between operations management – engineering and operations management – data analytics, by securing organizational commitments from reputable academic and industrial partners and, lastly, by placing the conference, after 13 years, again in the centre of Europe, in the inspiring environment of Hungarian history and culture.

We welcome papers addressing a variety of operations management topics and in particular those that fit in the tracks listed; the full list will be available soon at our site. At this point we also invite proposals for special sessions.

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The interconnected role of cognition, commitment, and capability in supply chain relationships: A hermeneutic approach

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Researchers argue that appropriate management of SC relationships is a determinant of firm performance. The literature argues that managing relationships across a supply chain network can help a firm establish a distinctive advantage. However, research has shown that major methodological issues blur our understanding of the link between tightly coupled relationships and performance. Through hermeneutical analysis, we evaluate the operationalization of these relationships using interview data from 11 manufacturers and retailers. We identify the conditions under which these relationship strategies are justified and the elements that constitute an effective relationship strategy. We then introduce the cognizance, commitment, capability framework.

Keywords: Collaboration, SC Relationships, Hermeneutics

The impact of service level requirements and product perishability information on demand forecasting bias

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Motivated by forecasting practices in the Fast-Moving Consumer Goods (FMCG) industry, this research aims to understand the extent to which sales forecasts are treated as the most likely sales quantities, and not demand plans. We study the impact of retailer service level on demand forecasts, and the moderating impact of product perishability and sales promotions. A laboratory experiment is designed using empirical sales data and promotional events from two FMCG companies. Data is collected from 248 subjects (over 85% experienced forecasters) across four treatment groups. Our analysis arrives at interesting results on how forecasters respond to different mix of information.

Keywords: Judgmental demand forecasting, Service level, Laboratory Experiment

The use of social network analysis in operations and supply chain management: A systematic literature review

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Understanding of supply chains is transforming from a linear interaction of different operating functions to a network-based ecosystem. Social network analysis (SNA) as a powerful methodology to study patterns of inter-firm behaviours and relationships, though has been widely adopted in different research areas, how to design research using SNA for operations and supply chain management research has remained a gap that this paper seeks to address. This paper offers contributions to SNA research design derived from a systematic literature review of relevant studies.

Keywords: systematic literature review, social network analysis, supply chain management

Organizational structure, dynamic capability development and the strategic flexibility of operations: A behavioral approach

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In this paper, we examine how the degree of modularity of the operations function influences operations managers' learning processes and the way they make choices in capabilities development. We ran a set of experiments for different organizational architectures with respect to modularity using a system dynamics model to represent the dynamics of the competitive environment and the dynamics of the operations function, with respect to resource and capability accumulation. Our research indicated that an integrated operations function structure is more likely to contribute to the achievement of strategic operations flexibility through stronger dynamic capabilities.

Keywords: operations strategy, behavioral operations, dynamic capabilities

Assessing perceived managerial behaviour as an insight to leadership efficiency

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This paper operationalises the design of a leadership behaviour model with an intention to serve as base for a leadership behaviour assessment tool aiming to define behaviour competencies necessary to be an effective leader. The models of Bryman (2007) and Kouzes & Posner (2007) were utilised for the analysis. The research was carried out in two sectors: in a Hungarian subsidiary of an American pharmaceutical multinational company and in a Hungarian Higher Education institute, with the method of Critical Incident Technique (Flanagan, 1954).

Keywords: Leadership competency, effective leadership behaviour model, Critical Incident Technique

The role of culture in lean implementation: Evidence from the construction industry

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The purpose of this study is to investigate how cultural tensions are managed in a service organization going through a lean implementation. We have conducted an in-depth single case study in the construction sector, using paradox theories. The identification of the tensions as either paradoxes or dilemmas is a key contribution of this study, as this clarification indicates how the organizations should manage each conflict to a successful lean implementation. Additionally, the investigation of which lean practices counterbalance specific cultural traits negative to lean may help practitioners reach an effective cultural transformation instead of being limited to a "lean wash".

Keywords: Lean System, Culture, Paradox theories, Construction industry

The relationship of team knowledge and team performance in high risk environment

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As the popularity of team work have significantly increased in the last decades, several studies are focusing on the factors that influence the success of team work. One of these factors is team knowledge, in other words being on the same page regarding the team's task. In our study we focused on firefighter teams, how their perceived and actual team knowledge influence their performance during simple and complex tasks. Although our assumptions were not statistically significant, there are tendencies that show the relationship between knowledge types and performance. Limitations and further directions are introduced at the end of our paper.

Keywords: Team Mental Model, Team Knowledge Index, Team Performance

Leadership attributes in lean production context: Analysis of production managers and CEOs

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Empirical works have analysed many different soft aspects of lean management. Recently lean leadership has gained specific interest. Our empirical work studies how lean production techniques mediates the relationship between leadership attributes and performance measures. Statistical analyses of two different organisational roles (CEO and production manager) from two cross-sectional datasets revealed that bossy and consultative leadership behaviours have impact in both years. Our findings clearly underline that the relationships among behaviours, lean and performance are not stable over the time.

Keywords: lean production, leadership, management

Resistance to sustainability in organisations: Analyses of the importance of sustainability barriers to change

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Organisations in civil society, companies, and governments contexts have been instrumental in driving sustainability. Organisational change for sustainability aims to move an organisation from the current state to a more desirable one. An increasing body of literature has been focussed on organisational changes, including drivers for and barriers to sustainability. This paper focusses on analysing factors of sustainability resistance in organisations. A survey was sent to more than 1500 organisations to analyse sustainability barriers to change, of which 73 completed all the questions. The survey responses were analysed using descriptive statistics, rankings in order of importance, comparison between types of organisations, and analyses of the interlinkages between barriers to change. The statistical methods and tests used were Friedman, Kruskal-Wallis, Mann Whitney U, principal component analysis, and network analysis. The barriers to sustainability were ranked in order of importance within their category: individual-, group- and organisational. Most important barriers we found to be lack of information and awareness, sustainability not being prioritised highly, and simple cynicism. On a group level, the most important barrier was 'ignoring group institutions'. On the organisation level, barriers such as financial issues, and a lack of resources, incentives and accountability were considered very important. Although a very higher number of barriers were included in the survey, they numbers were reduced to 20 using a principal component analysis. The analysis shows that many barriers are highly interlinked within their categories. Further analysis shows that many of the barriers are highly interlinked across categories, indicating that efforts at overcoming the barriers should be done in a holistic way. This paper shows that barriers to change will affect organisations in different ways depending on their goals and contexts. This paper provides depth to the sustainability barriers to change discussion by: 1) providing the importance of each barrier; 2) offering a ranking of the barriers in general and for each type of organisation; 3) analysing the relations between barriers and grouping them according to their correlations; and 4) showing the relations between the barriers' groups. This research highlights that it is important to recognise which barriers have the highest importance and influence, in order to overcome them and make organisations more sustainable. Identifying the barriers to change can help to apply appropriate strategies to overcome them, thus helping to better incorporate and institutionalise sustainability in organisations.

Improving job engagement: A survey of blue- and white-collar workers in an medium-sized manufacturing firm

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Work engagement is important as it contributes performance. Previous studies have shown that blue-collar workers are less engaged than white-collar workers, which highlights the need to focus on ways to improve the work engagement of blue-collar workers. This paper tests whether different perceptions of job resources is an important driver of the differences in work engagement between white and blue-collar workers. Using a survey of 153 workers in a medium-sized manufacturing firm, the paper shows that job resources, especially work environment and career opportunities, have a great potential to increase the work engagement of blue-collar workers.

Keywords: Work engagement, Job resources, blue-collar workers, white-collar workers, Survey

The moderating role of learning by doing for sustainability performance

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Recently, there are many researchers are trying to explore the relationship between sustainability collaboration and environmental performance. Meanwhile, from the industry investigation, Learn by doing (LLD) plays a quite important role in helping companies to achieve the sustainability performance. Learning by doing means employees keep on innovating in practice in order to improve the performance of firms. However, we have very limited knowledge about the moderating role of LLD in the relationship between sustainability collaboration and environmental performance. The purpose of this study is to propose a model to analyze the moderating role of LLD in the relationship between sustainability collaboration, including supplier-side sustainability collaboration (SSC) and demand-side sustainability collaboration (DSC), and environmental performance. At the same time, annual sales and employee number are considered as control variables in this relationship.

Keywords: sustainability collaboration, learn by doing, environmental performance

The impact of different guidance types on judgemental demand forecasting: A laboratory experiment

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Product demand forecasting (PDF) is a critical task in supply chain management. Various quantitative methods are developed for PDF. However, previous surveys confirm a heavy reliance on human judgement in practice. This is mainly to incorporate information not considered by quantitative models. The literature suggests that a Forecasting Support System (FSS) that systematically guides the forecasters in applying judgement is a likely solution to improve forecast accuracy. Guidance is the core component of this FSS. Using a laboratory experiment, this paper examines how different guidance types can help improve forecast accuracy in various task complexity settings (adding promotions and noise).

Keywords: Forecasting, Forecasting support systems (FSS), Promotions

Modelling relationship between trust and trustworthiness using a finite repeated trust game

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Our hypothesis suggests that in business relationships with high level of perceived trustworthiness, the willingness to be involved in risky situations is higher than in relationships in which actors do not believe their partner is highly trustworthy. We specified the mathematical-statistical model indicating the hypothesized relationship between trust and trustworthiness. We developed a modified version of the repeated Trust Game, and carried out the experiment. One unique features of our game design are that the ECU amount cumulated in previous iterations could be reinvested. The second unique feature is the payout function that –supposing rational actors– facilitated a cooperative behavior.

The project is supported by the Hungarian Scientific Research Fund (OTKA), project No. K 115542.

Keywords: Trust, Trustworthiness, Repeated Trust Game

The importance of organizational culture in a non-profit hospital: The soft side of healthcare transformation

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This paper presents the results of the partnership between academic group, a consulting firm, and a philanthropic hospital, aiming to diagnose its organizational culture and develop an evolution plan. The knowledge of a company's culture is fundamental to its management and changes efforts. Interviews were conducted with employees and two surveys were applied, one adaptation of the OCAI, developed by Cameron and Quinn (2011), and other based in values, investigating the convergences. The diagnostic highlighted critical points and improvement opportunities, revealing a gap between current and desired culture, and a lack of alignment, facilitating the co-creation of an evolution plan.

Keywords: Change Management, Healthcare, Organizational Culture

Behaviors in Healthcare: The study of patient satisfaction in Emergency Department

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The human behaviors, although important in all Operations Management sectors, play a highly relevant role in healthcare, where the human factors are predominantly involved. Leveraging the novelty and potential of the wearable sensor approach, this research aims to identify and evaluate the main behavioral factors affecting patient satisfaction in the Emergency Department (ED), with the final goal of supporting the ED service (re-)design in a holistic perspective. 42 patients and 112 practitioners in an Italian emergency department were monitored using Sociometric badges. Results show that patient satisfaction is greatly influenced by the behaviors and interactions of medical teams.

Keywords: Behavioral Operations Management, Wearable sensors, Healthcare Management

Women's roles in operations: An examination of photographs depicting women at work from 1870 to post-2000

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The research used content analysis of images from four periods and photo libraries to show how women working in manufacturing operations have been depicted in photographs. The research suggests that photographs taken during World War 1 show women working in a wider variety of different operations – from toy manufacturing to shipbuilding – than was the case for images from World War 2 and from a modern photo library. The work also suggests that earlier images show operations as more sociable, with more evidence of interaction between workers. There is evidence that the way in which women.

Keywords: Women in operations; visual methodology; content analysis

The impact of risk preferences on supply chain performance

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In this paper, we explore the impact of risk aversion on inventory management in multi-echelons supply chains and the ensuing dynamics of supply chains. The literature on the impact of risk aversion on supply chains is quite limited and, in particular, there is no evidence concerning the impact of: (1) individual risk aversion on inventory holdings and supply chain dynamics (e.g. order patterns and inventory stability); (2) possible combinations of risk aversion (i.e. high vs. low) across the supply chain on the performance of the chain as a whole. We explore these gaps through a multimethod approach (i.e., human experiments and Agent Based Simulation), thus using both empirical and simulated data. Results show that risk aversion significantly influences supply chain dynamics.

Keywords: Risk aversion, human experiment, multi agent based simulation

Ambidextrous production teams: The productivity dilemma revisited

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Ways to simultaneously achieve objectives such as efficiency and flexibility or consistency and adaptability fascinate many OM scholars. In this paper, we use the concept of “contextual ambidexterity” to explore how small production teams can resolve such trade-offs. Using data from 68 student teams we investigate how discipline, stretch and trust-support are related to productivity, quality and dependability. We find little evidence of trade-offs per se; rather, there is an underlying capability that supports all three aspects of performance. Discipline and trust-support show strong, significant relationships to performance; stretch is related to productivity but not quality or dependability.

Keywords: Productivity; trade-offs; ambidexterity

Human factor: The bridge to a successful intervention in MTO (Make-To-Order) manufacturing environment

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This paper aims to demonstrate how human factor played an essential role in the design and implementation of a production planning and control (PPC) system to improve a company's operating performance. Although various operations management (OM) concepts, tools and techniques have been introduced by academia, the disconnection between academia and actual practice is still apparent. The importance of ‘contextual knowledge’ in introducing an intervention refers not only to the ‘technical’, but also to the ‘socio’ aspect of the system. Balance is achieved by considering the ‘fit’ between OM concepts and technology, as well as the human/social and organisational aspect in introducing a practical PPC system.

Keywords: human factor, production planning and control, S-DBR

The role of temporal norms and orientations in operations management

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Although time features prominently in many operations management concepts it is usually presented as a boundary condition to a discussion on efficiency, planning, and control. In western societies, time is mainly viewed objectively and is assumed to be homogeneous, reified, discrete, and subject to precise measurement. Other researchers counter this perspective and support a view in which temporal norms may develop that are inconsistent with the objective notion. Through an exploratory research design, the temporal norms of two manufacturing organizations are investigated. This provides an insight into how differences in temporal orientation leads to different behaviours that impact operational performance.

Keywords: Temporal norms, temporal dimension scales, operations management

Investigating an imbalanced consideration of the supply line from a control theory perspective

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This paper addresses the well-established finding that individuals in supply chains often do not base their order decisions to the same degree on information they have about the supply line as on information they have about their stock. The accompanying advantages and disadvantages of this phenomenon are investigated by considering insights from production and inventory control theory. A system dynamics model representing the Beer Distribution Game was used for analysis. Results indicate that an imbalanced consideration of the supply line can be harmful in some cases but also beneficial in other cases.

Keywords: Order Heuristics, Control Theory, Beer Distribution Game

Ordering decisions in the presence of product sales promotional information

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Based on extant literature in behavioral operations management, we investigate the effects of retail promotions in a multi-period inventory ordering setting under two different transit times. Our laboratory experiment finds the awareness of upcoming promotions assists in optimizing ordering decisions and reducing supply chain costs. We also find that additional detail related to the price discount of the promotion is not as effective in reducing supply chain costs. Our experiment provide evidence on supply line underweighting where longer transit times exacerbate supply chain costs. Additionally, we find that those unaware of a promotion tend to accumulate inventory after a promotion.

Keywords: Behavioral operations management, Ordering decisions, Laboratory experiments

The dynamics of organizational problemsolving: A dual-process approach

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This study investigates two distinct behavior modes with which organizations respond to operational problems: intuitive and analytical problem-solving (IPS and APS). From a cognitive perspective, the former is based on heuristic reasoning to eliminate problem symptoms whereas the latter relies on structured reasoning to diagnose and alter underlying causes. Although the effectiveness of APS is well-established, problem-solvers are often adopting IPS, a phenomenon called IPS dominance. Motivated by field-work at a manufacturing plant, we develop a simulation model to capture the development paths of two modes and the transition dynamics between them, to address the major reasons of IPS dominance.

Keywords: Problem-Solving, Dual-Process Theory, System Dynamics



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Does GRI sustainability reporting pay off? An empirical investigation of public listed firms in China

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Building on signaling theory, we carry out an event study method to compare the firms following GRI SR with firms reporting sustainability but not following the GRI guidelines. We identified a sample of 122 listed firms in China from CSMAR and Wind databases. The results show that GRI SR significantly increases firm profitability. Moreover, firms with local political ties and ISO 14000 maturity reap more benefits from GRI SR. The moderating effects of central governmental ties, ISO 9000, and OHSAS 18001 certification are not significant. Surprisingly, the performance impact of GRI SR is negatively correlated to the firm's internationalization level.

Keywords: Sustainability reporting; Global Reporting Initiative; Event study

Contribution of railroad transport into carbon footprint of the pulp and paper supply chains: Case of Russia

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This paper focuses on environmental impact of the rail transport as part of the pulp and paper supply chain. It draws attention to export from North-West Russia, and covers carbon dioxide emissions exhaled from dispatch to border crossing stations. We examine if the actual routing on the rail network corresponds to an optimal solution. We formulate the transshipment module and identify the differences.

Keywords: sustainability, carbon emissions, railway, vehicle routing problem, Russia

Green practices in the logistics service industry: A comparative case study analysis between Hungary and Italy

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Due to the more critical role of third-party logistics service providers (3PLs) in the supply chain and the significant environmental impact of their operations, such companies are increasingly requested to respond to the challenges of green logistics by implementing more environmentally sustainable strategies. Even if the number of research works increased over the last years, there is the lack of studies comparing 3PL's green practices operating in different countries. Accordingly, the main aim of this paper is to shed light on environmental sustainability practices undertaken by a sample of ten 3PL companies in Hungary and Italy. The analysis is specifically focused on the implementation of green initiatives and the most significant drivers and barriers influencing their adoption.

Keywords: Green actions, Drivers and inhibitors, Italian and Hungarian logistics service providers

Using third party sustainability standards for reducing uncertainties in sustainable multi-tier supply chains

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Raw material suppliers at the upstream end of the supply chain (SC) have been identified as sources of reputational and supply risks which induce substantial uncertainty in sustainable SCs. Adopting institutional theory, this systematic document analysis investigates the usefulness of third party sustainability standards for mineral resources from a multi-tier sustainable SC management perspective. The findings indicate that the reviewed standards can reduce institutional distance as well as supply and demand uncertainty in mineral SCs. Contrastingly, most of the standards fall short in supporting the integration of up- and downstream actors and establishing the multi-tier SC as an institutional field.

Keywords: Supply chain uncertainty, Sustainability standards, Institutional theory

Sustainability in a complex supply chain: A literature review on the Brazilian Beef supply chain

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This study aims to analyze how sustainability is being addressed in the complex Brazilian beef supply chain. A literature review was carried out, identifying 43 papers. Results indicated that sustainability has been addressed in the Brazilian beef supply chain in two different ways: (1) to reduce environmental and social impacts and (2) to manage these impacts. This study emphasizes sustainability related to a complex supply chain. Understanding how sustainability is being addressed in the Brazilian beef supply chain can contribute to understand the effectiveness of these initiatives in a highly complex supply chain, when compared to less complex supply chains.

Keywords: Sustainability, Complex Supply Chain, Brazilian Beef Supply Chain.

Managing sustainability risks in multi-tier supply chains: An agent-based simulation study

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Many modern firms strive to become sustainable. To this end, the firms are required to improve not only their own environmental and social performance but also the performance of their suppliers. Using an agent-based simulation and building on population ecology theory, this working paper explores how buyers' exposure to sustainability risks and their subsequent risk management strategies can lead to industry-wide adherence to sustainability by the suppliers. We use previously collected experimental data on managing sustainability risks to assess how buyer populations with different characteristics can change the presence of sustainable and unsustainable business practices in a population of suppliers.

Keywords: Sustainability Risk, Agent-based Simulation, Population Ecology.

Creating sustainable food supply networks through brokerage

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Recent research suggests that firms can obtain resources to support adoption of sustainable supply chain management (SSCM) practices through their supply network ties. This paper explores the role of brokerage in the exchange of financial and knowledge resources aimed at supporting the adoption of SSCM practices in supply networks. The paper presents a case study of the banana supply network in Costa Rica. We identify brokers in the network and brokerage behaviors. We extend SSCM research by considering a wide range of actors and contribute by uncovering the behaviors and actions that characterize brokerage in supply networks.

Keywords: sustainable supply chain management, supply networks, brokerage

Sustainable supply chain management practices: The role of supply chain strategy and structure

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This paper studies the effectiveness of both upstream and downstream sustainability practices on a focal firm's performance. Given that the implementation of practices that aim to extend sustainability to upstream and downstream practices is complex and heavily relies on the firm's SC structure we also study the role played by both SC Strategy and Structure on the abovementioned relationship. We run a series of OLS regressions using a database of 100 European manufacturing firms. Our results highlight the role of SC Strategy on the effectiveness of sustainable SC practices and the relevance of SC Structure on the effectiveness of downstream practices.

Keywords: sustainable supply chain management; supply chain strategy; supply chain structure

Stakeholder engagement for effective implementation of environmental practices

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Although the sustainability literature has consistently highlighted the role of stakeholders (e.g., suppliers, employees, customers) for the effective implementation of environmental practices, empirical studies to date have largely overlooked this important factor. To fill this gap, we connected the natural resource-based view with stakeholder theory to explore how stakeholder engagement may affect the environmental practice-performance relationships. We used data from about 300 manufacturing plants worldwide to test whether environmental practices have different performance implications in different configurations of stakeholder engagement. Overall, our results provide partial support for our hypothesis.

Keywords: Green supply chain management, Sustainability, Stakeholder engagement

Sustainability-induced risks: Exploring how hidden costs create a vicious cycle

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Sustainability is recently recognized as not only a concern for profitability, but also for risk. The struggle to implement sustainability practices raises unique trade-offs, which lead to disruptive profiles and strategies, introducing a new form of vulnerability and increasing risk, especially for supply chains spread around the emerging economies. However, companies are not yet aware of cost of not managing sustainability-induced risks, and bear the cost of the risks associated with sustainability programs. Research is also scarce to understand this implicit trade-off between the cost of sustainability-induced risks and risk mitigation. Following the tenets of systems view, theory of constraints and chaos theories, this study investigates how sustainability-induced risks increase cost and threaten the viability of sustainability programs in the long run. Data is collected through face-to-face interviews among thirty-one experts of food supply chains in an emerging economy. Findings conceptualize the interplay between the cost of sustainability-induced risks and risk mitigation strategies, and posits a framework to break the risk-cost vicious cycle to undermine the sustainability practices.

Keywords: Supply Chain Risk, Risk Mitigation, Sustainability, Food Industry

Sustainability practices implementation and the multidimensional performance effect: The ´ Balsamic Vinegar of Modena ´ case

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The aim of this study is to investigate the implementation of sustainability practices in the food supply chain and the effects that such practices can have on sustainability performances. The study is based in the analysis of seven cases in the ´ Balsamic Vinegar of Modena ´ supply chain. Companies in the sector apply diverse sustainability practices but differ in their approach to focus in one or more sustainability dimensions. Regarding sustainability performances, most of the practices implemented have multi-dimensional effects, which makes the sustainability performance assessment highly complex, and difficult for companies to identify what to measure and how.

Keywords: sustainability performance, food supply chain, certified product

Exploring social sustainability aspects concerning the well-being of workers in Chinese factories

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Welfare monitoring in Chinese factories has focused on physical working conditions, with workers' overall well-being largely unexplored. The many codes attempting to define basic standards may not reflect workers' priorities. We used digital diaries to deepen our understanding of migrant workers at a factory in Guangzhou. They suggest factors important to workers – effective relationships and opportunities for learning and development – are very different from the physical welfare concerns raised in the media. We reflect on how our work might be used, to deepen the understanding of social sustainability challenges in global supply chains, and to transform managerial approaches.

Keywords: Supply-chain risk management, Social sustainability, Diary research, Psychological capital.

Implementing supply chain collaboration practices to support successful circular economy: A best case from textile industry

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In recent years circular economy (CE) has received increasing attention worldwide because of the greater emphasis on transparency in resources supply and efficiency in their use. In this context, we analyse a single case-study about a closed-loop supply chain (SC) in the textile industry. We conducted interviews at multiple levels of the SC to gain an in-depth view of its circularity. The aim is to demonstrate that a collaborative SC management has a major role to play in the transition towards a CE as it is necessary the commitment of all the different players involved in the product life-cycle.

Keywords: Circular economy, Sustainability, Supply chain management

Enablers and inhibitors for implementing sustainable supply chain management practices: Lessons from SMEs in the food industry

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The purpose of this study is to identify the factors that enable or inhibit small and medium-sized enterprises in the food industry, to adopt sustainable supply chain management practices. While the focus of most studies is on single companies, this study considers the supply chain as a whole and analyses each factor in terms of environmental, economic and social sustainability. The research is based on a set of case studies that represent companies at every stage of a Greek meat supply chain. 17 enablers and 23 inhibitors are identified and classified into three groups: firm level, supply chain level and external level.

Keywords: Sustainable supply chain management (SSCM), enablers and inhibitors, small and medium-sized enterprises (SMEs)

Social multi-tier supply chain management: Empirical insights from the Brazilian garment sector

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Current debates are even more requiring emphasis on social issues applied to supply chains since it still is the forgotten dimension. To address this lack, this paper aims to propose the social multi-tier supplier management (SMSM) based on social practices implemented in a local supply chain within the garment sector in Northern Brazil. We use the social capital theory as the theoretical lens to reach the proposal by carrying out a case study. Three different tiers were covered by our research focusing on seventeen practices found out in the literature. Findings demonstrate that so far it still is necessary a more relational interaction among supply chain members, since a friendship and informal communication exist in the sector but do not address the multi-tier perspective. The study contribute bringing elements from the social theory to manage supply chains.

Keywords: Sustainability, Social practices, Multitier perspective.

The adoption and implementation of sustainable supply chain practices in Chinese private enterprises: A combined institutional and contingency perspective in a policy setting

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Drivers and approaches to the development of sustainable supply chain can be different depending on the institutional context, especially in developing countries that have experienced fundamental institutional changes. A multiple case study method is employed to examine the role of policy initiatives in the adoption and implementation of sustainable supply chain practices (SSCPs) among private enterprises in China. Chinese government has applied various regulatory and influential policy instruments (“toolbox”) to facilitate the adoption of SSCPs, but the effectiveness of policy intervention can be contingent on company size and industry.

Keywords: Sustainable Supply Chain Management, China, Institutional Theory

Corporate governance as a factor of building social responsibility - supply chain perspective

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The concept of CSR describes the relationship between business and society, and refers to a company's voluntary activities in the area of social issues. The purpose of this study is to provide an insight into application of organisational governance as a success factor in implementing social responsibility throughout the whole supply chain. The paper highlights formal, informal and hybrid approaches of companies' management towards corporate governance supporting social responsibility. It also illustrates the shift from "after profit obligations" to "before profit obligations" model.

Keywords: corporate governance, social responsibility, supply chain management

Battling information asymmetry: Supply chain partner engagement for climate change mitigation

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Climate change poses significant information asymmetries in form of physical and regulatory challenges and opportunities for businesses. Using rich secondary data, we explore how companies engage with their supply chain partners drawing on organisational information processing theory (OIPT). We find that while companies' chief information uncertainty relates to measuring their scope 3 emissions, effectively interpreting and managing this information equivocality becomes a subsequent priority. Further, OIPT provides a valuable lens for characterising the dynamics behind information flows and utilisation in climate change supply chain engagement. We contribute to knowledge on the significance of inter-organisational information processing in addressing important sustainability outcomes.

Keywords: Organisation information processing theory; sustainable supply chain management; information asymmetry

The effect of corporate social responsibility on operational and quality performance

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This paper uses social exchange theory to argue that organizational citizenship behavior acts a mediator in the relationship between socially responsible behavior and performance. The paper used structural equation modeling and data from apparel manufacturers from Pakistan. The results provide partial support to the hypothesized model. These findings extend the discussion of relationship between social responsibility initiatives and firm performance. Also, the paper provides useful managerial insights.

Keywords: Social Responsibility, Firm Performance, Organizational Citizenship Behavior, Empirical Research, Developing Country

An Evolutionary theory and supply network perspective on manufacturing firms' capabilities development in water scarcity management

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The notion of water scarcity risks has become a crucial element in the firm's sustainable development. Increasing number of businesses understanding the criticality of water availability adjust their corporate social responsibility and environmental strategies. This study explores the firm's adaptation and learning processes to the resource availability levels through the Evolutionary theory (EvT) perspective. The study suggests a novel supply chain capabilities development process resulting in the proposition of firm types and configurational patterns according to Darwinian principles.

Keywords: Evolutionary theory, supply chain sustainability, mitigation capabilities for water scarcity

The engagement against food waste in hospitals as a strategy for corporate social responsibility

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The primary objective of the academic work study in essence is to analyse Corporate Social Responsibility Strategies. Fundamentally as a element of resources for organizations by identifying the origin and motivation and practices for combating food waste in Health Care facilities. The work highlights three large hospitals that have been analysed through semi-structured interviews, participant observation and documentary analysis. Empirical evidence has shown that the particular context of hospitals is driven in the main by governmental legislation, that intern efforts in hospital waste management program. Strategy development and resource generation require governance, stakeholder engagement, shared data information and integrated communication.

Keywords: Food waste, corporate social responsibility, RBV, governance.

Mapping innovative initiatives to address the food waste challenge – a global overview

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The report, 'Global food losses and food waste,' published in 2011 by the Food and Agriculture Organization of the United Nations pointed to the fact that about one third of food produced for human consumption is lost or wasted. As almost 1 billion people stay undernourished and another 1 billion suffer from hunger across the world, the issue of food waste is increasingly recognized as an important challenge. Increasing attention to food waste and losses exert particular pressure to businesses along the food supply chain. Corporations can play an important part in collaborative efforts towards the reduction of food waste.

Keywords: Sustainable business models, food supply chain, food waste

Blood in your tuna can: Modern slavery and the role of NGOs

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Global supply chains in seafood create a disconnect between consumers and the conditions of how our fish is caught. Using the case of modern slavery in the Thai seafood industry we investigate the changing role of NGOs in combatting slavery and illegal fishing. Thailand as it is the 3rd largest exporter of seafood globally but is facing the threat of a EU ban on seafood exports. Our findings reveal that the role of NGOs has changed from the traditional advocacy role to that of a supply chain partner. We also find, however, that this new role bears new internal and external conflicts for NGOs that can hamper their effectiveness in bringing systemic changes.

Keywords: modern slavery, alternative supply chain governance, NGOs

An investigation of government incentive policy in green technology adoption in automobile industry

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As the environmental awareness increases, government's green technology incentive has been identified as an effective approach to reduce carbon emissions and facilitate the environmentally friendly agenda. To date, little is known in the literature about the relationship between government's green technology-dependent incentives and supply chain behaviors. Thus this research aims to address this research deficit by investigating the decision making in supply chain given green incentives. Mathematical modeling approach is used to analyze the interaction between government and supply chain parties. Findings of this research provide managerial implications to supply chain management practitioners and practical suggestions to government policy-makers.

Keyword: Incentive policy, Supply chain management, Green technology

Product essentiality: An introduction

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This paper introduces the concept of product essentiality within sustainable operations management studies. It investigates the influence of location, gender, and family income on the perception of essentiality of ordinary goods and services. A total of 81 items, were classified according to a binary position of 'essential' or 'superfluous' by business students in both Brazil and UK. The results show there is no significant difference in perception either concerning gender or income in both countries. The only aspect that shapes the essentiality perception is culture. Our study contributes to the debates on operations sustainability and design of sustainable products and processes.

Keywords: Essentiality, Sustainability, Product Development

Stakeholder management in Chilean biomass supply chains

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The purpose of this paper is to evaluate stakeholder issues in biomass supply chains (SC) in emerging countries. Within this case study in Chile, a total of 39 semi-structured interviews were conducted with internal and external stakeholders of the biomass SC. The findings indicate that the political context and market structure is based on a free-market economy, where hardly market-interventions are in place. This rather supports market based transactions with low involvement, trust and collaboration among SC actors. The in-depth analysis of stakeholder management drives the comprehension of this into further details and links it to sustainability impacts.

Keywords: Supply Chain Management, Stakeholder Management, Sustainability

Does place attachment matter? Top-management characteristics, institutional pressures and SMEs' pro-environmental behaviour

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This study examines the influence of institutional factors on SMEs' environmental performance. It further demonstrates the relative importance of institutional factors and place attachment of top-management (owner-manager), by examining the moderation effect of place attachment of owner-managers on the relationship between institutional factors and SMEs' environmental performance. The empirical results based on a questionnaire survey of 509 SMEs in China demonstrate that institutional pressures and place attachment of top-management positively influence SMEs' environmental performance. Moreover, negative interaction effects are identified between place attachment of top-management and institutional pressures.

Keywords: Institutional pressures, Place attachment, SMEs

Back to the future: Updating logistics customer service through green transportation

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Building on Langley and Holcomb's (1992) elements of logistics customer value, we test for green transportation as an additional antecedent of logistics customer service. Two scenario-based experiments were conducted with distinct panels of online participants from the US and the UK, comprising 110 and 402 valid responses respectively. ANOVA was used in hypothesis testing. Results show that green transportation positively affects customer value, customer attitude toward firms and customer loyalty more than traditional transportation. Additionally, the findings indicate moderating effects of the source of energy used by vehicles (i.e. renewable versus non-renewable) and the environmental reputation of suppliers of transportation (i.e., positive versus negative) on the three explained variables considered. By focusing on green transportation, the impact of sustainable management on other components of logistics remain unexplored. Future research may extend the approach to areas such as green purchasing and green inventory management, among others. The study offers empirical evidence that shall justify the considerable investments logistics service providers make into the provision and the communication of using green transportation. The investigation contributes to a more comprehensive understanding on the nature and on the antecedents of logistics customer service. Moreover, through the demonstration of the effects of green transportation on that regard, we add to the literature on sustainable operations, particularly on its utilization as a source of value creation to firms.

Keywords: Green transportation, sustainable management, logistics service

Reverse supply chain of ship recycling: Marketization and operationalization

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Ship recycling refers to the process of tearing down vessels with the goal of reusing the components. This paper treats ship recycling as an economic activity, contextualizing it in accounting and operations management debates about the economization of markets and the assessment of value. Through qualitative research, a map of reverse supply chain of ship recycling and key activities of the stakeholders are portrayed. Preliminary findings show that there are conflicts of interest in the valuation of ship recycling by the stakeholders. Moreover, standards and regulations have not been able to fully embrace the social aspects in the developing countries.

Keywords: Reverse supply chain, Ship recycling, Marketization

The attitude-behaviour gap in apparel purchasing – analysis of factors inhibiting fair fashion consumption

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Why do only a few consumers buy fair trade clothing despite many opposing to the unsustainable production conditions in the apparel industry? This paper assesses several hindering factors concerning their ability to explain the attitude-behaviour gap in fair fashion purchasing. Using regression analyses, the impact of different knowledge- and personality-based inhibitors on the say-do relationship is studied. Results indicate that consumers have only limited knowledge about the existing supply of fair trade clothing. In addition, traditional purchase criteria as well as the personal need for self-expression through apparel choice take precedence over supporting the fair trade movement.

Keywords: Consumer Social Responsibility, Fair Trade, Attitude-Behaviour Gap

Inclusion of marginalized actors in local supply chains: A cluster analysis and implications for global supply chains

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This study aims to answer the following research question: Which mechanisms of supply chain inclusion are employed empirically in local supply chains and how can these mechanisms influence social value creation in global supply chains? A cluster analysis is conducted using empirical data collected through a large-scale survey. The cluster analysis reveals three meaningful clusters of supply chain inclusion in Base of the Pyramid markets and highlights two main aspects: direct versus indirect mechanisms of inclusion and diversity in supplier relationships with local organizations aimed at either 'sourcing' local capabilities needed for inclusion or 'outsourcing' the inclusion.

Keywords: Base of the Pyramid, global supply chains, inclusive supply chains

Pharmaceutical product recall in China: Challenges and negative public perceptions mitigations

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A pharmaceutical product recall is a systematic process that highlights a dangerous situation that requires timely and effective action to protect the public from harm. Through semi-structured interview and secondary recall data, this study provides an in-depth insight of the current drug recall situation in China. The social media facilitate pharma companies to conduct more proactive and responsive actions to solve recall events and in turn providing more transparent information to the publics. To conduct more effective recall, the awareness of recall, traceability of end users and the lack of regulations to encourage end-users to participate in recall are the main challenges to be addressed.

Keywords: Pharmaceutical product recall, public perception, challenges

Building inclusive supply chains: Integrating base of the pyramid producers

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This paper provides a review of all existing empirical research about the integration of base of the pyramid (BoP) producers and distributors into global supply chains. Using a structured literature review, this paper integrates 34 empirical papers, highlighting key areas of overlap and opportunities for future research. Existing work is classified based on its level of analysis, either macro or micro, leading to the identification of institutional voids, informal markets, community embeddedness and knowledge transfer as key themes. The paper argues that the effective integration of BoP producers in global supply chains may support sustainable development through poverty alleviation.

Keywords: base of the pyramid, sustainable development, supply chain management

The consequences of squeezing truckers

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The increase in stakeholder pressure for responsible business is now triggering a higher public awareness of buyer's abusive power (BAP). BAP occurs when a powerful buyer appropriates greater value at the expense of their suppliers. In this study, we examine such an exploitative relationship in the context of the trucking industry. By building on a multiple theoretical approach, and based on data collected from 260 independent truckers, and we elaborate on how BAP causes the individual truckers to engage in an unpleasant situation, deteriorating their wealth and safety.

Keywords: Buyer's abusive power, Supplier welfare, Buyer-supplier relationship

The current use and future potential of theories, methods, and applications in qualitative and quantitative SSCM research

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Qualitative and quantitative research approaches are driving research on sustainable supply chain management (SSCM). The Delphi study at hand attempts to map the theories, methods, and fields of application focused by qualitative and quantitative research in order to identify overlaps and gaps amongst them as well as to outline possible integration avenues. The findings of the first survey round give preliminary insights into the current use and the future potential of theories, methods, and application contexts as well as on the role of sustainability and multi-tier SCM dimensions in qualitative and quantitative SSCM research.

Keywords: Sustainable supply chain management research, Methods, Delphi study



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The role of Big Data Analytics maturity on firm performance: Evidence from the UK manufacturing sector

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Scholars have recognised the importance of Big Data Analytics (BDA) capabilities for improving decision making. However, the impact of BDA maturity on operational and innovation performance has not been systematically investigated. Drawing on dynamic capabilities view; this paper discusses how BDA capabilities are instrumental in improving operational and innovation performance. The role of absorptive capacity and data quality on the relationship between BDA maturity and operational and innovation performance is examined in this paper. Analysis of survey data from 221 manufacturing companies shows that BDA significantly improve performance. Finally, implications and suggestions for future research are also discussed.

Keywords: Big Data Analytics, absorptive capacity, operational and innovation performance.

How the raise of a Big Data Analytics environment impacts the pharmaceutical supply chain in Europe

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Purpose To understand which contextual factors are impacting a successful Digital Innovation (DI) initiative in a complex Supply Chain (SC) and affect the achievement of benefits linked to increased data use.

Design/methodology/approach Single case study on the distribution network of pharmaceuticals in a European country.

Findings Strong governance and integrating bodies play a key role in successful DI in complex SC. IT maturity determines the type of SC benefits that can be achieved.

Relevance/contribution Identification of key contextual factors for DI in a specific environment and of key preconditions for achieving SC benefits through use of data (i.e. Big Data).

Keywords: Digital Innovation, Big Data Analytics, Supply Chain Management.

Big Data Analytics for supply chain management: A review of empirical studies

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Big data analytics (BDA) has emerged as a relevant topic in the supply chain management (SCM) area. Many studies in SCM show the benefits and challenges induced by BDA implementation. However, there is a lack of empirical evidence besides the great consent among researchers on the positive impact. This paper aims to fill this gap conducting a systematic literature review to find the academic literature focusing on empirical studies. The empirical evidence from those papers is discussed regarding benefits and challenges comparing them to the theory. Most of benefits and challenges from empirical studies corroborate the theory.

Keywords: Supply Chain Management, Big Data Analytics, Systematic Literature Review

The synergic effect of Industry 4.0 technologies on the operations performance. Evidence from Italy.

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The aim of this paper is twofold. On the one hand, we want to understand whether Industry 4.0 technologies can positively affect the performance of operations processes. On the other hand, we aim at checking whether technological solutions known as Industry 4.0 are connected to each other by a synergic relationship or, on the contrary, they can be seen as stand-alone solutions, the effectiveness of which does not rely on the adoption of the others. Preliminary findings from a survey show that Industry 4.0 solutions do affect most manufacturing performances and that a synergic relationship among them can be observed.

Keywords: Industry 4.0, Digital Transformation, Performance

Assessing Industry 4.0 readiness: A multi-country industry level analysis

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Recently digital solutions and novel industrial technologies started to become widespread in manufacturing. There are many different approaches to assess the so called Industry 4.0 transition of national economies (macro) and of individual companies (micro) as well. Our paper elaborates a framework that enables the assessment of Industry 4.0 at sector (meso) level. Relying on the proposed methodology we compare the (evolution of) Industry 4.0 readiness of four manufacturing sectors in EU28. We conclude that the aggregated sector of computer and vehicle manufacturing is the most advanced in I4.0. A deeper analysis of this sector has revealed that countries with top starting performance in the transition in 2014 (SWE, DE, AT) have presented the greatest progress between 2014-2017. While there are expectations that I4.0 could strengthen the relative importance of manufacturing in terms of value added, we did not find evidence for it.

Keywords: Digitalisation, Industry 4.0, Sector

Industry 4.0: German logistics service provider's perspective

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Industry 4.0 is the application of Cyber-Physical Systems in the domain of manufacturing/production. The purpose of this paper is to investigate how German logistics service providers perceive and implement the concept of Industry 4.0. Primary data from the German logistics service providers were collected following an online questionnaire survey to understand the challenges and opportunities associated with the implementation of the concept in practice. Multiple regression analysis based on 57 responses attempts to define the characteristics of Industry 4.0 from practitioner's perspective. Diverse characteristics of Industry 4.0 were identified, including Internet of Things, Data exchange, Automation, Digitalisation, Big Data, IT Facilities and Cybersecurity. The research seeks to contribute to the Industry 4.0 literature by understanding the gap between theory and practice.

Keywords: Industry 4.0, Digitalization, Logistics, Operational improvement

Presenting the benefits of Industry 4.0 through agent-based simulation

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The innovation in manufacturing processes from the Industry 4.0 concepts opens research gaps in current production models. The objective of this research is to demonstrate, from a comparison between a conventional manufacturing model and a smart manufacturing model, that the implementation of smart manufacturing brings benefits to the production indicators. The adopted method of comparison is the modeling and simulation of a conventional production process and a smart factory process, adopting some functionalities resulting from the Internet of Things and Cyber-Physical Systems. The modeling of both, standard and smart factory were performed through agent-based theory.

Keywords: Industry 4.0, Simulation, Agent modelling

Blockchain's impact on supply chain of a pharmaceutical company

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The purpose of this research is to assess the implication of blockchain technology on the supply chain and procurement on pharmaceutical industry. The objective is to identify the areas that blockchain has the highest potential impact so that the case company can prepare and take advantage of the technology. The research uses literature review and interviews of experts to form the basis of the research. The findings show that the key areas in the supply chain and procurement of the pharmaceutical company, which will be impacted by blockchain are track and trace, smart contracts, securing Internet of Things (IoT) and avoiding counterfeiting.

Keywords: Blockchain, Supply Chain, Pharmaceutical industry

The impact of smart manufacturing technologies on work and organizational design: The role of technological maturity

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The technological revolution, including Smart Manufacturing (SM), is changing manufacturing paradigms. Previous research focuses on technological considerations, disregarding its organizational implications. This study aims at providing evidences on how SM affects organization of work both at the micro level – i.e. job breadth and autonomy, cognitive demand and social interaction – and at the macro level – i.e. centralisation of decision making, hierarchical level and line and staff units configuration. We conducted a multiple-case study of 20 companies implementing Smart Manufacturing. Results presents four clusters of companies different for technological maturity levels and organization of work, contributing both to theory and practice.

Keywords: smart manufacturing, work design, organizational design

Industry 4.0: Why a definition is not needed (just yet)

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Industry 4.0 is currently a hot topic for practitioners and academia. However, as the concept originates in manifestos by government-sponsored initiatives or companies, a widely-accepted academic definition is still lacking with significant uncertainties and ambiguities concerning country-, industry- and size-specific factors. In this paper – through a systematic literature review – we categorize current definitions and provide the scientific and managerial communities with an analytical perspective to navigate the current ambiguity. We conclude by proposing some directions for research to shedding light on the phenomenon, although a rigorous definition of Industry 4.0 is neither possible nor needed at this point in time.

Keywords: Fourth Industrial Revolution, Conceptual framework, Systematic literature review

How the Internet of Things Technology affects the Supply Chain Management

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The purpose of this study is to identify and analyze how the Internet of Things Technology (IoT) affects the Supply Chain Management (SCM) performance.

Through a systematic literature review, many applications were identified in the Operations field, which were grouped and analyzed according to an SCM framework.

It is concluded that the huge increase of information generated by IoT adoption leads either to incremental improvements in the SCM processes or radical improvements, with the emergence of new business models. The latter can facilitate the servitization of manufacturing companies, such as Business Ecosystems, which are Supply Networks with connected stakeholders.

Keywords: Internet of Things, Supply Chain Management, Business Ecosystems.

Open process innovation and digitalization of manufacturing

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Manufacturing companies seek to innovate their processes by improving their digital maturity. Many companies develop process innovations within the boundaries of their plants with limited knowledge exchange with outside sources. From the open innovation literature, we know that opening up and sharing knowledge with the environment can induce product innovations. We suggest this also applies to process innovations, such as new digital technologies. We conduct a survey of 184 Swiss manufacturing companies and analyze the effect of openness on digital maturity. We find that openness generally relates to a higher digital maturity, but more so for some technologies than others.

Keywords: process innovation, openness, digitalization

Fintech innovation in Supply Chain Finance

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Fintech (financial technology) adoption is on the rise. Technological innovation such as blockchain or internet of things are seen as the 'next big thing' in integrating physical and financial flows within supply chains, as well as for adopting supply chain finance (SCF) schemes. However, it remains unclear how such technologies can meet the requirements for SCF development, as well as how they impact SCF-related risks. We investigate these aspects through a case study involving 9 organisations (large buyers, technological and information providers) which shows how – although diverse in nature and impacts – all of the identified technologies have the potential to thrust SCF evolution.

Keywords: Supply Chain Finance; Fintech; Information technology; Blockchain; Internet of things; Artificial intelligence; Application programming interface.

Evaluation of advanced digital technologies in manufacturing companies: Hybrid fuzzy MCDM approach

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Purpose of this paper is to investigate implementation of advanced digital technologies in manufacturing companies and to evaluate their contribution in the context of Industry 4.0 in transition countries (i.e. Slovenia, Croatia, and Serbia). Data taken from European Manufacturing Survey are used for this research. Fuzzy Analytic Hierarchy Process (FAHP) was employed to determine criteria weights, while Preference Ranking Organization Method for Enrichment Evaluations (PROMETHEE) was employed to rank advanced digital technologies. Software for production planning and scheduling, near real-time production control systems and supply chain management contribute the most to manufacturing companies interested in production principles of Industry 4.0.

Keywords: Digital manufacturing, FAHP, PROMETHEE

What motivates companies for digital innovation?

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Aim of the paper is to provide insight into what motivates companies to begin Industry 4.0 developments. The paper investigates why some companies start experimenting with the unknown technology, sometimes taking on significant risk. To find the answer, organizational culture will be studied. The paper is based on four interviews with managers of different manufacturing companies which help revealing how the companies moved towards I40, why they started to innovate and what motivates them to be amongst first movers. Results say that supportive company culture and the self-motivation of firm leaders towards innovation and excellence can be extremely important factors.

Keywords: Industry 4.0, innovation, organizational culture

Coping with digitalization in operations processes: The role of design thinking

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Based on an in-depth literature review of Design Thinking and Industry 4.0 concepts, we develop a methodology that supports companies in handling and defining a set of digital priorities and objectives aligned with their corporate business strategy and in deploying it into operative plans. This way companies are able to enhance the effectiveness of digital investments and select and exploit the most prominent and strategic ones for their business. A test of the advanced method is furthermore conducted in a sample of five noncompetitive companies with the rationale of collecting empirical data on the ground to understand potentialities as well as limits of the proposed method.

Impacts of the digitalised car on logistics

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The digitisation of the car has introduced new and changed dependencies (NC-Dependencies) among components, e.g. the compatibility of hardware and software. Therefore, the current form of the product representation does not adequately document the new technical interrelations of components. A three-step approach (literature research, interviews and analysis of OEM data) has been followed to identify clusters of NC-Dependencies to examine their impact on logistics. The analysis and integration of dependencies between the components in the product representation is essential to assure their availability and in parallel to reduce the risk of obsolescence and recalls.

Keywords: Digitalised car, logistical impacts, product representation

Digitalisation technology adoption – A case study on absorptive capacity and B2B relationships

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This paper contributes empirical insights into the phenomenon of digitalisation technology adoption in the automotive supplier industry by exploring absorptive capacity (ACAP) and B2B relationships. 20 semi-structured in-depth interviews have been conducted with technology gatekeepers in a globally leading automotive supplier. In potential ACAP, aim is to “identify the truth” about a technology’s actual capability. In realised ACAP, operator involvement is important for purposeful exploitation and technology acceptance. Context-related relationships with technology providers are given in all ACAP process, whereas relationships with customers or suppliers are negatively associated due to asymmetric relationship power. A case study illustrates the findings.

Keywords: Digital transformation, technology adoption, absorptive capacity

Digitalisation of supply chains: An information processing perspective

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The purpose of this research is to explore the relationship of types of supply chain decisions, types of information and types of digital technologies in order to reduce uncertainty in supply chain operations in manufacturing companies. This study has several key findings including that the majority of information is not systematically captured by organisations. On the theoretical side this research extends information processing theory into digital supply chain research, develops a taxonomy for information processing needs and demonstrates the adequacy of digital technologies as enabler of information processing capacity. The practical contributions include the allocation of particular information to supply chain decisions as well as information capturing mechanisms, which will enable companies to quicker access required information for decision-making.

Keywords: Digitalisation, Supply chain, Information processing

Developing highly effective business analytics: An information processing perspective

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Business Analytics is central to large firms' value creation, yet empirical support for how it is developed by companies is still needed. Prior results adopt a resource based view whereby the performance of business analytics is contingent on the availability of some well-known capabilities and organizational resources. Empirical evidence however has been only weakly supportive. Addressing this gap, we explore how business units within firms develop high performing business analytics. Our research suggests that a universalistic, best-practice, approach is limited in power and that the development of business analytics is appropriately viewed as a co-evolutionary, emergent, process.

Keywords: business analytics, information processing theory

Chief information officer profile and information technology role: A qualitative approach

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This paper uses the Strategic Grid of Nolan and McFarlan (2005) to analyse the strategic importance of IT in the CIO profile. The relationship between the role of IT and the CIO profile is very clear. Nevertheless, there are signs that this relationship may evolve, to a lesser degree, in the opposite direction. That is, the CIO's profile influences the IT role due to elements such as credibility and internal networking.

Keywords: CIO Profile, Importance of IT, Competencies

The role of technology in supporting supply chain collaboration: What's next for purchasing and Industry 4.0?

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Industry 4.0 (I4.0) technologies have a profound impact on supply chain management, as they change supply chains structure, improve its digitization, and foster introduction of new business models. This paper aims to analyse the role played by I4.0 technologies in driving buyer - supplier supply chain collaborations, and the impact on supply chain performances. To do that, we design a model to explore the relationships between supply chain technology, collaboration and performances, tested through data collected on 141 Italian manufacturing companies. Results confirm that traditional supply chain technologies play a crucial role in fostering buyer-supplier collaboration (and improve performances), while same conclusions cannot be drawn for I4.0 technologies, mostly due to still the limited diffusion of I4.0 in the Italian scenario.

Keywords: eProcurement, industry 4.0, supplier collaboration

Enabling digital transformation: An analysis framework

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Drawing on empirical evidence on the differentiators of organisational digital maturity and the literature on organisational change and performance, we explore firm characteristics and identify various organisational dimensions that are determinants of a successful digital transformation. A matched-pair design is adopted in this study to examine 129 pairs of large companies from 15 sectors that are performing digital initiatives and having either an increase or a decrease in their market value. We identified strategic, cultural and structural characteristics that distinguish companies that are experiencing positive outcomes and can be considered as digitally maturing firms.

Keywords: Digital Transformation, Digitalisation, Digital Technologies

Quality assurance of the education process supported partly by Big Data Analysis

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The rapid development of ICT is constantly challenges the society, the economy and the way of everyday life. This tendency is becoming more and more intensified nowadays. Besides the transformation of basic ways of life, tasks and roles, changes are certain in some elements of the education system. All these changes can be measured and analyzed – under appropriate conditions – with Big Data analyzes. On the basis of teaching and learning process, this can be of great importance in the analysis of data sets belonging to different higher education courses. Likewise, it has an important role in examining certain indicators of education and economics.

Research presented in this paper supports the idea that online platforms and social media provide information about education that Big Data can use to improve education quality.

The used method is an online questionnaire survey. In the framework of the investigation, the results of the survey will be presented by the authors and further conclusions will be deducted. The target group of the questionnaire survey is the group of students and graduates of the BME specialization training.

The methodological experience and results can be used as a basis for developing a broader, multi-year, Big Data survey using large data volumes, which imaginary use is introduced. The expected results of the research can contribute to the further development of the teacher training courses and to the expansion of the training provision that meets the needs.

Keywords: teacher training, teacher career model, motivation, big data

Business models in operations, marketing and management research – a systematic literature review

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This study reports the preliminary results from an on-going review of the research literature on business models in three sub-disciplines of business research: operations and technology management, marketing and general management. The systematic review method is first described. Next, the study reports a brief overview of the literature in terms of methods, citations and publication outlets and then moves on to thematic comparison of the three sets of literature. The study concludes by suggesting research directions for the operations management research community.

Keywords: Business model, Systematic literature review

Improving relationship performance on e-platforms: Role of technology usage in promoting justice

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In the new e-platform business model, technology usage seems to work as a governance mechanism to regulate operations and manage interorganizational relationships. To respond, this study examines how technology usage in e-platform operations influenced the relationship quality between the platform builder and platform participants by promoting perceptions of three types of justice. The results from a survey of 394 platform participants in China reveal that technology usage leads to better relationship performance through enhanced perceptions of procedural, distributive, and informational justice. The positive impacts of procedural justice and distributive justice on relationship performance are greater than that of informational justice.

Keywords: e-platform; technology usage; justice



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TTOs and successful university spin-offs: A co-evolutionary perspective

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In recent decades, the debate around the interacting role played by university, industry and government in supporting innovation dynamics has gained substantial importance in literature. To understand the specific contribution of university in promoting innovation through technology transfer, more theoretical and empirical research is required. This paper addresses this need by examining the role played by TTOs in a co-evolutionary perspective and through the analysis of one Italian and two Spanish case studies. Findings show that technology transfer processes able to generate successful USOs are result of effective multi-level co-evolutionary adaptations within university and between university, industry and government.

Keywords: Co-evolution, Knowledge and Technology Transfer, International Comparison

Sustainability reporting as a way to foster entrepreneurial universities

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Higher education institutions (HEIs) play a major role in the development of societies. In the last decades, there has been an increasing interest on the commercialisation of knowledge by universities for economic development that lead to the emergence of the term "Entrepreneurial University". This study aims to report the sustainability efforts of the University of Gävle, Sweden by applying a systematic tool, Graphical Assessment of Sustainability in Universities (GASU). This study highlights sustainability reporting as a way to improve communication practices between universities and stakeholder. The systematic and holistic assessment of HEIs gives insights of collaboration opportunities and by that foster their entrepreneurial journey.

Keywords: Entrepreneurial universities, Sustainability reporting, University of Gävle

Activities and models of university technology transfer

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Universities perform different technology transfer activities to fulfil their 'third mission' of contribution to economic development: research commercialization, academic engagement, support to start-up creation and growth, funding support for technology development, entrepreneurship education for students and creation of entrepreneurial climate within the university. We investigate the heterogeneity in the accomplishment of these activities with a quantitative survey undertaken within a Task Force on Innovation of the association of universities CESAER and we found three main models of university technology transfer. A first one focus on research commercialization. A second with a more balanced approach. A third one focus on start-up assistance but with a moderately balanced approach.

Keywords: universities technology transfer activities, models of university technology transfer, entrepreneurial university

Collaborative research in practice: Articulating the realities of engagement

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Collaborative research entails the combination of practical relevance and academic contribution in order to generate knowledge that is relevant for both parties. It is based on the idea of knowledge co-creation through co-operation between researchers and practitioners and it hence requires engaged scholars. However, the requirements on the practitioners are less researched. In this paper we aim to provide clarity and understanding of the potential configurations of engaged research, to encourage the operations management community to articulate their research practice as it was actually undertaken rather than to post-rationalise based on prescribed legacy traditions. This is done through illustrative vignettes.

Keywords: Research approach, engaged scholar, collaborative research

Pushing the envelop on lean startup: Comparative analysis of Dutch brick-and-mortar startups

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Although rooted in software development domain, 'Lean Startup' (LS) is gaining considerable traction in the startup scene and becoming one of the most popular Agile approaches in practice. The challenge, however, is our limited understanding of LS in non-web domain. In addition, the concept seems to be mainly driven by practitioners and empirical academic studies are remarkably limited. This study aims to empirically explore the application and applicability of LS in non-web, or Brick and Mortar (B&M) settings. By delving into several B&M startups, this paper studies commonalities and nuances between web-driven and non-web driven startups in applying LS.

Keywords: Lean Startup, Brick-and-Mortar, Case study

Model change of the Hungarian higher education

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Higher education, as one of the most important resource of a country determinate its competitiveness, capital-retaining ability and the success of R&D. In spite of some changes in the Hungarian higher education's system and operation in the last 25 years, the basic elements – such as legal environment, organizational structure, budgeting principles and mechanisms – are permanent. For the renewing of the Hungarian higher education, for an international competitiveness, it's needed to rethink the whole operating modell's, and – if it's necessary – initiate fundamental changes. For the rethink of the modell there are some international 'best practice', such as Israel's way. In the observation of the Israeli higher education system's finance and operation we take care particularly on the government's support and its predictability, and the structure of the owners. The 5-years financing agreements, the clear governmental grant allocation, and the owning authority together make the Israeli higher education effective and marketable.

Keywords: Israel, Hungary, higher education, finance

Notions of entrepreneurial university: Some European models

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The goal of this paper is to present a conceptual framework for analyzing interactions between universities and local companies aimed to fulfil the third mission of universities. The framework focuses on the university-firm interactions Europe wide and targets to reveal country specifics in order to define the different notes of entrepreneurial university. Country based benchmarks can provide critical inputs to the theoretical and empirical related contribution in the topic of operation of entrepreneurial universities. Fulfilling the third mission can be more efficient and better determined in the European or global era if details of entrepreneurial university's operations are under continuous analysis. Author first revisit the latest related literature, then methodological discussion continues with representing empirical data and steps and phases of data analysis, which follows the logic of grounded theory building process. Among the two determined research categories of the paper – institutional relations and university-firm interactions data hubs are represented from case studies and data with data analysis leads to consequences in topics of differences in university roles, sustainability of each partnerships and level of diversification in the industry. Papers contribution to the literature is summarized along these dimensions.

Keywords: Entrepreneurial University, Grounded Theory, Knowledge, University-firm interactions, Europe

Factors influencing entrepreneurial intentions of students

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The purpose of the paper is to get insights about the impacts of entrepreneurship education on engineering students. The synthesis of the literature indicates that impact studies of entrepreneurship programmes on the attitudes and intentions of students are relatively rare. The article focuses on the testing of a novel questionnaire design, notably on its potential to distinguish entrepreneurship students and those not taking the entrepreneurship course. Responses were collected from a Hungarian university (n=147). While results of a broader study confirm that opportunity recognition is shaped by macro-level factors, which have an influence on risk perception through locus of control, the measurements used imply no significant differences in the measured factors between students, who participated in an entrepreneurship course and the control group. Our findings point to the need for good student selection and complex entrepreneurship programmes that target attitudinal change.

Keywords: Entrepreneurship, Intention Models, Entrepreneurship Education

Public university model for entrepreneurship – a contextual study

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The nature of public universities is changing rapidly driven largely by the decrease in government funding across teaching and research sectors. This has forced a strategic rethink of university value generation and its translation into revenue. The aim of this paper is to provide an analysis of current government innovation policy and university capabilities to support the translation of innovation, and in so doing explore the possibilities of a Quadruple Helix innovation approach to building new models for education. The paper begins by examining the significant role innovation plays in developing economic wealth, and a discussion of the triple helix framework that identifies the complex collaborative relationships between universities, government and industry. The development of a Quadruple Helix Innovation Model, which places the user at the centre of the relationship, highlights the importance of developing entrepreneurial capabilities in the translation of innovation. We argue that building appropriate entrepreneurial capabilities formed via vertical and horizontal curricular offerings by key stakeholders will be critical to new business models outcomes. Universities are encouraged to embrace the entrepreneurial driven curricular to provide the innovation, execution and disruption necessary to improve university revenue growth.

Keywords: University, Entrepreneur, Innovation, Capability, Business Model, Quadruple Helix, Empirical



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Relationship between cash conversion cycle and profitability ratios

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This study intends to empirically investigate the relationship between cash conversion cycle and profitability ratios for Forbes Global 2000 firms in selected industries before, during and after global financial crisis for the period of 2004-2015. The cash conversion cycle is defined as days of inventory outstanding plus days of accounts receivable outstanding minus days of accounts payable outstanding. For profitability ratios, we include return on sales and return on assets. The purpose is to better understand the relationships between important operational and financial measures of firms' survival and growth, cash flow, and profitability in different industries, using panel data analysis.

Keywords: Cash Conversion Cycle, Profitability Ratios, Forbes Global 2000 Panel Data

The retailer's optimal order policy with inventory-level-dependent demand under trade credit limit

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This paper incorporates the consideration of trade credit limit (TCL) when addressing the retailer's optimal operational policy for the item with inventory-level-dependent demand. That is, if the retailer's purchase cost is below TCL, the supplier offers the retailer a full delay in payments; otherwise, the retailer is allowed to delay payment for the amount up to TCL. By formulating the retailer's average profit function, the retailer's optimal order quantity can be obtained. Using numerical analyses, the retailer's order quantity and the corresponding account payable can be effectively controlled under a given predetermined trade credit limit.

Keywords: Inventory-level-dependent demand; Trade credit limit; Order policy

Risk management at global level: Strengthening the resilience of the global financial system

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The concept of resilience applied to societies, businesses, services and financial systems requires strong governmental or central bank commitment under fast changing economic and social conditions. Globalization has also resulted in a globalized financial system. In such an environment, it is vital to have sound global “emergency response options” to potential economic or financial shocks. Besides dealing with the adequacy and the availability of these options, this paper aims to examine macroeconomic policies that can mitigate the impacts of the shocks, the fragility of the global economy today and how the resilience of the global financial system can be strengthened.

Keywords: resilience, crisis management, financial system

Investing in the Internet of Things: A real option approach

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This paper provides a methodology to assess the implementation of digital technologies by using the real options approach. Specifically, the option to expand a project may reflect the investment in digital technologies. Currently, the study of this kind of investments is very important given that companies are increasingly implementing digital technologies to be more competitive in a globalized market where the technological development is ever more rapid. The application of this specific approach brings the understanding of digital technologies investment. It claims the action as quickly as possible by companies if they want to get the best likely performance.

Keywords: digital technology, real options, financial assessment



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Reshoring decision support in a Swedish context

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This paper presents a decision-support system for reshoring decision-making based on fuzzy logic. The construction and functionality of the decision-support system are described, and the functionality is evaluated in a high cost environment exemplified through a Swedish context. Ten different reshoring scenarios, provided by Swedish reshoring experts, are entered into the decision-support system and the decision recommendations provided by the system are presented. The confidence that can be put on the recommendations is demonstrated by comparing them with those of the reshoring experts. The positive results obtained indicate that fuzzy logic is both feasible and that the quality of the results are sufficiently good for reshoring decision-making.

Keywords: Decision-Support Systems, Fuzzy Logic Systems, Reshoring

On the strategic vs. tactic nature of the location choice in the reshoring decision

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The phenomenon of reshoring is raising much interest among practitioners and scholars, in particular when this path is undertaken after the failure of an offshoring initiative. While several studies claim that most offshoring decisions are driven by the possibility of enjoying short-term benefits, reshoring projects are rooted in a deeper understanding of the long-term outcomes of a geographically dispersed production footprint. The aim of this study is to investigate why companies decide to repatriate their plants and, in particular, whether such decision is characterized by a higher degree of awareness about its long-term effects. Evidence from eight case-studies is reported.

Keywords: Reshoring, Offshoring, Rightshoring

Reshoring decision-making and implementation processes: A multiple-case study

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Over the last decade, reshoring has increasingly attracted the attention of the practitioners and academic community. While a significant number of articles have analyzed drivers, locations and activities involved in reshoring decisions; the decision-making and implementation still lack empirical analyses. The aim of the paper is to develop and empirically refine a framework on reshoring decision-making and implementation processes. Drawing from extant literature, we identify a set of consequential phases. We then conduct three case studies to refine such phases and identify the timing, stakeholders and main criticalities of each phase. Finally, we develop five propositions for future empirical validation.

Keywords: Reshoring, Decision-making process, Implementation process.

Reshoring decision-making based on operational capabilities in Swedish apparel supply chains: A fuzzy AHP approach

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This paper determines how operational capabilities influence reshoring decision-making based on proximity make-buy alternatives in apparel supply chains in high-cost locations. By drawing operational capabilities from reshoring literature, a hierarchical model is constructed and tested using fuzzy AHP in a workshop with industry and academia. The priority weights for 12 capabilities categorized into three criteria influences the four reshoring alternatives in the order: make-onshore, make-nearshore, buy-onshore, buy-nearshore. Sourcing/production capabilities were the most important criteria followed by value-added products/services. Relationship was least important but its underlining aspects: availability of skilled labor/know-how and flexible supplier relationship were necessary preconditions for reshoring.

Keywords: Reshoring, Make-buy, Fuzzy AHP.

Can Industry 4.0 foster the backshoring of production? Insights from a Delphi study in France

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While the trade press highlights the potential impact of industry 4.0 on backshoring to France, academic literature still treats these two topics separately. To help bridge this gap in the literature, we carried out a Delphi study with a panel of 18 experts. Our findings show that industry 4.0 can foster backshoring in companies of all sizes, identify contributing factors as well as barriers, and analyse the foreseeable consequences of this backshoring on corporate supply chains.

Keywords: Industry 4.0, Backshoring, Delphy study

Manufacturing relocations in the footwear industry: A comparison between Italy and Spain

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This paper concerns the relocation of manufacturing activities earlier off-shored, considering both back-shoring (relocations to the home country) and near-shoring (relocations to the region near the home country) decisions. 41 relocation events implemented by 25 Italian and Spanish footwear manufacturers are analysed according to a "3Ws" approach investigating: a) the content of the reshoring decision (WHAT), b) the host countries (WHERE) and c) the motivations for relocations (WHY). Among other contributions, the authors enlarge the concept of "selective reshoring" in terms of "width" (number of back-/near-shored product lines) and "depth" (number of production phases relocated). Several differences between the two country-based sub-samples were found and are discussed.

Keywords: Reshoring, Off-shoring, Footwear Introduction

Comparing reshoring evidence from the EU and the US – present findings and limitations

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This paper compares evidence on reshoring activities of manufacturing companies from EU countries with US results. It draws conclusions on differences and similarities in reshoring patterns and limitations of the comparison. Reshoring seems to be a more common phenomenon in the US than in most European countries. In the US, different cost factors represent the most important motivations for reshoring, whereas quality and flexibility issues seem to be more important for European companies. However, it is very difficult to compare reshoring patterns, as they cover different time-frames and definitions of reshoring.

Keywords: reshoring, backshoring, EU-US comparison

Reshoring: Does home country matter?

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The purpose of this study is to analyze the effect of the home country on reshoring processes. Using a sample of 529 cross-industry reshoring initiatives from five countries (i.e., US, Germany, UK, France, Italy), we find that these initiatives significantly differ in terms of industry, entry mode choice, firm size and motivations among the countries analyzed. We contribute to both reshoring and international business literature by highlighting the influence that the home country platform exerts in manufacturing repatriations. Our study provides also significant implications for policy makers at a time when several governments are considering the economic and employment potential of reshoring.

Keywords: Reshoring, Home country effect, Multinational corporations (MNCs)

Off to which shore? Explaining the strategic factors behind near- and farshoring

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This paper investigates the differences and commonalities in locational advantages driving near- and farshoring. For this, we study the features of 4766 production sites, using company-level data from Uniworld Online and location-level data from the World Economic Forum and the World Bank. We use multilevel logistic regression to test hypotheses derived from nearshoring cases listed in the European Reshoring Monitor. Our results elucidate an important managerial trade-off for European companies. On average, they either access greater strategic assets nearshore – such as shorter export lead times, higher know-how or technological readiness –, or larger markets farshore, capitalising on greater trade-cost-jumping gains.

Keywords: Global Operations, Offshoring, Nearshoring

Manufacturing backshoring and direct brand creation: Evidence from the footwear industry in Italy and Portugal

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Manufacturing offshoring decisions have been implemented for a long time in the footwear industry. However, more recently some companies are revising their initial decision by implementing the backshoring alternative. This paper is focused on backshoring decisions implemented by contract manufacturers that decided to develop their own brand.

Two case studies of shoes manufacturers are analyzed and compared according to the 5W and 1H (What, Who, Why, Where, When and How) perspectives. Findings show that both the earlier implemented strategies (contract manufacturing and offshoring) allowed the investigated companies to develop competences useful for promoting their own brand and increase their performances.

Keywords: Reshoring, Offshoring, Footwear

Measuring reshoring – approaches and limits

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This paper provides novel insights into existing approaches to measure reshoring activities and their main advantages and limitations. Surveys and secondary data collection have possibilities to provide insights in the underlying motivations and strategies. However, they mainly provide responses whether companies have reshored during a specific time period or not (yes or no), without judging the magnitude of the reshored activities. Trade data and World Input-Output data allow for an investigation of the magnitude of the phenomenon and the development over time. However, they do not allow for firm-level analysis of motivations and characteristics of the respective companies.

Keywords: reshoring, backshoring, input-output data

Manufacturing relocations and performance: A contingency perspective

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We analyse the impact of manufacturing relocation directions and ownership on operational performance, and analyse if these effects are contingent upon strategy, network size, or plant ownership. We use survey data from 373 Swedish manufacturing plants. Network size and relocation strategy have strong moderating effects for both directions (offshoring or backshoring) and ownership (internal or external relocations), such that plants in networks outperform single plants and having a corporate-wide relocation strategy strengthens the performance. However, plant ownership (domestic or foreign-owned) has mixed effects.

Keywords: Shoring, Sourcing, Survey.

The effect of the offshoring of digital asset development on confidentiality performance

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Digital assets, which continue to be increasing in value, are often being developed by multiple entities located in many geographic contexts. Our key question in this research is whether the sourcing of developers offshore (vs. onshore) relates to a change in confidentiality performance. We also examine the extent to which publisher experience moderates this relationship. We employ secondary data on nearly 2000 electronic video games released from 2000 to 2010. We find the offshoring weakly relates to worse confidentiality performance outcomes, but that experience positively moderates that relationship.

Keywords: global sourcing, software development, cybersecurity

Roles of change management in interactive interfirm relationships

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Our paper fits to the topic of managing interfirm relationships and managing change in supply chains. Change management and the interaction approach of business relationships mean the theoretical background for our work. The research objective is to apply the theory of change roles and configurations in interorganizational context, and analyze interorganizational change roles in supply chains. We adapted the change role structures to different powerbased behaviors of supply chain partners and introduced the possible change role structures in each powerbased behavior situations. Our aim is to contribute to the deeper understanding of the nature of some change management problems of interfirm relationships.

Keywords: supply chain, IMP, roles of change

Study on synergetic development of regional logistics and regional economy in China's Yangtze River Delta

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Based on theoretical analysis this paper studies the synergetic development of logistics system and regional economy system in China's Yangtze River Delta and aims to explore and measure the synergetic development degree between the two systems by using the coupling degree model. The result shows between 2001 and 2016, the development level of regional logistics industry and economy in China's Yangtze River Delta showed a significant upward trend. The order degree of regional logistics system is lower than the order degree of regional economic system, which means the development of regional logistics cannot effectively promote the development of regional economy.

Keywords: Regional logistics system, Regional economic system, synergetic development

A plant's development stage in knowledge transfer in manufacturing networks

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The paper at hand analyses if plants follow a development path in knowledge transfer from a knowledge receiver role to a knowledge sender role. In this, the plant's age and the content of knowledge that is transferred are analysed. The study includes thirteen case studies in four different European countries (i.e., Switzerland, Romania, Albania, and Macedonia) and shows that the content of the transferred knowledge changes in relation to the plant's development stage and its role that the plant takes at the end of the undergone development stage. The lower the development stage, the more basic knowledge related to innovation and product/process improvement is transferred. As the development stage gets higher, more specific task related knowledge is transferred. Furthermore, results indicate that the plant's age cannot fully be linked to the development stage of the plant under investigation.

Keywords: Lateral knowledge flow, manufacturing networks

Exploring the relationship between headquarters and plants

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Extant studies have provided useful theories and empirical documentation on the relationships between headquarters and subsidiaries. However, much attention has been paid to marketing/sale branches and distributed R&D centers, no prior research has examined the relationships between headquarters and plants within the same international manufacturing network (IMN). This is an important omission because it is fundamental to explore the relationships between headquarters and plants in the IMN, in order to better understand how to design and manage a manufacturing network. In this paper, we use an exploratory case study methodology for a taxonomy of relationships between headquarters and plants and an identification of impact factors of relationships between headquarters and plants.

Keywords: International Manufacturing Network; Relationships; Headquarters; Plant

The role of national culture in plants' production network integration

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This paper studies the effects of national culture on a plant's integration in the production network and the contingent effects of two types of distance, cultural and geographic, on this relationship. Our arguments are grounded on an institution-based view that accounts for the dual institutional, social environment in which plants are embedded. Our results highlight the importance of the plant's local informal institutional context. Masculine, long-term oriented and indulgent cultures harm plants' network integration. Also, the significant moderator role of cultural and geographic distances shows that plants may follow their local values rather than the ones inculcated by the headquarters.

Keywords: Manufacturing networks, National culture, Multilevel regression

The relationship between environmental hostility and manufacturing flexibility: The role of operational absorptive capacity

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We propose a conceptual model for probing into the nomological network of influence among environmental hostility, individual and organizational operational absorptive capacity, and internally- and externally-driven manufacturing flexibility. Environmental hostility reflects hypercompetition in business environment. Operational absorptive capacity is measured in individual and organizational dimensions. Manufacturing flexibility is measured as internally- and externally-driven flexibility. The primary purpose of this research is to scrutinize the role of individual absorptive capacity on internally-driven manufacturing flexibility leading to externally-driven manufacturing flexibility in hypercompetitive market, both moderated by organizational absorptive capacity. The structural equation modeling analysis results provide interesting theoretical and practical insights.

Keywords: Empirical research in operations management, operations strategy

Management of international manufacturing networks – a site portfolio approach

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Management and design of International Manufacturing Networks (IMN) is becoming an increasingly complex but at the same time important factor for business success. Our research encounters the lack of tools and methods supporting managers in the process of network adaption by providing a portfolio perspective on intra-manufacturing networks. Through an extensive literature analysis and practical input, we derived an artefact with financial performance and strategic performance as relevant dimensions. The case of an automotive supplying company operating more than 40 plants proves the proposed portfolio as applicable and validates that it is a valuable management support framework.

Keywords: IMN optimization, IMN performance, plant comparison



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Adopting rapid process improvement workshops in healthcare – what purposes do they serve?

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This paper undertakes a secondary data analyses of 47 Rapid Process Improvement Workshops from five National Health Service Trusts (NHS). The Trusts were part of a much larger evaluation of a transformational change in the National Health Service North East (NHS NE). Rapid Process Improvement Workshops share similar characteristics to MasterClasses used to enact process improvement. The limitation of MasterClasses relate to sustainability. This work demonstrates mixed improvement outcomes from across the Trusts. It is not the method that produces change or continuous improvement long-term. Sustainability is embedded in policy, processes, and routines such as taking repeat measures of improvements.

Keywords: Healthcare, Process Improvement, Rapid Process Improvement Workshops (RPIWs)

The role of lean leadership in the lean maturity – second-order problem solving relationship: A multiple case study

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This paper investigates the relationships between Lean adoption and the problem-solving behaviour of nurse teams. We explore practices of Lean leaders in hospital settings and discover how leaders can stimulate second-order problem solving within nurse teams. Fourteen nurse teams, with different Lean maturity, were studied empirically through semi-structured interviews. The results indicated a positive relationship between Lean maturity and second-order problem solving, as well as a potential strengthening effect of Lean leadership on this relationship. Also, we identified seven Lean leadership practices in hospital settings that have a strong link with transformational leadership.

Keywords: Lean leadership, Lean maturity, second-order problem solving

Implementing continuous improvement in healthcare: A case study of lean application in an emerging country hospital

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Brazil is a geographically large country with widespread regional and social inequalities. Its Unified Health System is challenged by problems due to the size of the country, poor management of resources, and insufficient funding. As the Lean approach has been successfully implemented in healthcare as a tool for process improvement, this study focuses on the investigation of the applying Lean concepts in Brazilian hospitals. A case study developed in a non-profit hospital in São Paulo state, suggests that it is feasible to apply lean techniques to achieve process improvements and cost savings for hospitals in emerging countries.

Keywords: Lean healthcare; Quality improvement; Hospital management.

Lean leadership behaviours in healthcare organisations: A systematic literature review

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This systematic literature review compares contextual similarities and differences of leader behaviours across various hierarchical levels and lean maturity levels. Since healthcare organisations are generally unique, the successful implementation of Lean Healthcare likely demands typical supportive leader behaviours at all hierarchical levels. However, the 107 reviewed articles indicate that most of the healthcare leader behaviours are similar to those of manufacturing leaders, but more relations-oriented in the early lean stages, rather than task-oriented. As most healthcare studies examined leaders at the operational and tactical levels, future multi-level research should also study strategical managers and the longitudinal effects of their behaviours.

Keywords: Lean Healthcare, Leadership, Behaviours.

Perceptions of practitioners and experts on value-based healthcare: A mixed-methods study

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Value-based healthcare is a multifaceted approach that currently is gaining traction in healthcare inspired by the publications of Michael Porter. This study aims to provide a comprehensive framework for value-based healthcare. We conducted a multiple case study, a Delphi study and focus groups. We identified four categories: Patient value; Costs; Organisation of care; and, Steering of quality. In addition, we included 29 elements that are considered as (very) important by the experts. Value-based healthcare is a distinctive approach that adds to existing approaches by its focus on outcomes and costs, data-driven improvement and better ways to pay for healthcare.

Keywords: Value-based healthcare, performance measurement, outcomes and costs

Critical success factors of German medical technology supply chains

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This paper investigates Critical Success Factors (CSFs) that affect the performance of organisations involved in medical technology supply chains (MTSCs) in Germany. German medical technology is an innovative and fast-growing industry, which is currently under pressure to reduce costs. This paper presents an exploratory research involving a multiple case study. Six, prioritised CSFs for OEMs within MTSCs that include sales and operations planning, product development process, as well as quality and compliance were identified through empirical research. These findings challenge existing assumptions about CSFs within MTSCs, providing practitioners with strategies that should help to improve operational performance of OEMs.

Keywords: Supply chain network design and analysis, Collaboration and coordination issues in SCM, Medical technology industry

Process interfaces between healthcare organisations: A supply chain management perspective

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Handover performance is important for a relevant and safe output of a medical process chain. It is suggested that handover performance is induced by three perspectives which may counterbalance each other: sharing information and communication, integrated technology, and the creation of partnerships. This assumption is supported by recent handover literature suggesting that all three perspectives jointly contribute to handover performance. However, in studying the handover interface in a multiple case study of CVA-patients organisations seem to focus on just one or two of the three perspectives. This might explain why in some more complex situations handover performance seems to fail.

Keywords: handover, classification, performance

Developing an assessment tool for healthcare employee satisfaction: Validating in cross-cultural settings

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This paper aims at developing a reliable and valid job satisfaction scale for healthcare employees and making comparisons between China and Japan. Employee satisfaction surveys were conducted, collecting 429 and 474 staff responses from Chinese and Japanese hospitals. We yielded six- and five-factor employee satisfaction structure separately, among which five factors were the same. Both countries' staff did not have high job satisfaction. Chinese physicians were significantly less satisfied than Japanese physicians whereas Chinese nurses were more satisfied. Common predictors of overall job satisfaction in both countries were satisfaction with growth and development, own reputation and work demands and workload.

Keywords: Employee satisfaction, Healthcare, Cross-cultural comparison

Applying flexible fuzzy numbers for Likert scale-based service quality evaluations based on a healthcare example

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The purpose of the paper is to introduce a flexible fuzzy number based methodology in order to enhance the reliability of Likert scale-based evaluations. The novelty of the presented methodology lies in the flexibility of fuzzy numbers as they can present various shapes and therefore, can illustrate the uncertainty embedded in the evaluation process in various ways. Owing to its properties, flexible fuzzy numbers can be utilized for multidimensional evaluation of service quality by aggregating the results into one flexible fuzzy number expressing the overall goodness of the studied service quality characteristic, which are demonstrated through a healthcare example.

Keywords: Flexible fuzzy number, Likert scale, Healthcare

The role of organizational learning in fostering a culture of quality and safety within a healthcare setting in the Kingdom of Saudi Arabia and in Colombia

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The purpose of this study is to determine the interactions among factors such as organizational learning, feedback about error, punitive response to errors and quality of communication when fostering a culture of quality and safety in hospitals in Saudi Arabia and Colombia. A self-administered questionnaire was designed, to collect responses from 417 respondents affiliated to hospitals in Saudi Arabia and 483 respondents from Colombia. The findings from the Structural Equation Modelling process shows a strong and significant predictive relationship between Feedback about Errors and SCC for both countries. A very low and insignificant predictive relationship between Non-Punitive Response to Errors and SCC was found for the two countries.

Keywords: Organizational learning, quality safety culture, quality assurance

A smart health grid solution for demand management of Emergency Departments

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Overcrowding is a very challenging problem that Emergency Departments (EDs) face every day. Many scholars dealt with it focusing on a single ED and few works analyse the problem in a network perspective. In this paper, we reinforce the idea that managing EDs as a network can be an appropriate solution for mitigating overcrowding. Based on energy smart grid concept, we propose an optimization model of demand side management for reducing the waiting time of the ED network. In order to show the potential of model, its application to a 3 EDS network located in Naples (Italy) is presented.

Keywords: Network, Demand Forecasting, Overcrowding

The role of digital technology in increasing healthcare organizations resilience

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Digital technology in healthcare is more and more used by nurses and physicians during the daily work. However, nowadays research is not able to state if outcomes related to its implementation are unequivocally positive or negative in terms of service quality. Furthermore, one of the most significant quality dimensions in healthcare domain is represented by patient safety: because of this, lots of papers were written aiming to assess the impact of digital technology implementation on this dimension, but even in this case conclusions are ambiguous. Assuming that digital technologies enable employees' resilience behaviours and absorptive capacity, grounding on dynamic capability theory, we conducted a survey research involving Italian private clinics, in order to understand if digital technology increases patient safety by decreasing the number of cascade events, namely "some of the most serious adverse events".

Keywords: Health Information Technology, Resilience, Patient Safety

Customization and personalization in clinical pathways using a modular perspective

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We study if and how personalization affects the way modularity enhances customization in cancer care, i.e. oncological care pathways. In earlier research, customization and personalization in modular service offerings have been investigated in elderly care. In our research, we build on this in the context of cancer care. Moreover, instead of taking existing treatment offerings as given, we put patients' needs and wants at the center of interest in the modular (re-) design of care pathways. In this way the current study contributes to the call for research on how the implementation of modularity influences the customers' service experience.

Keywords: Modularity, Customization, Personalization

Pathways from Targets and Monitoring to performance in healthcare: An analysis of employee and workplace outcomes in Britain

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This paper uses employee-workplace data in British healthcare to investigate how targets and monitoring practices may be associated with employee-attitudes and workplace-performance. Results from two-level path models highlight that quality targets can improve productivity, and that a transparent strategy can foster positive employee-attitudes. Although job demands can decrease wellbeing, neither targets nor monitoring are linked with perceptions of job demands, and thus they do not seem to be as onerous to wellbeing as reported in previous studies of performance management in healthcare. Nonetheless, the results also imply that jointly economic performance targets and a supportive management may reduce employee wellbeing.

Keywords: Performance Measurement, Employee-outcomes, Workplace-Performance.

Creating value through clinical operations management: Lessons from Multiple Myeloma

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The paper tries to test the applicability of the value-based health care model to the case of an oncological disease (Multiple Myeloma). This model sustains it is necessary to reorganize operations around clinical conditions. To achieve this goal authors have adopted a multiple-case study approach combining qualitative and quantitative methodologies.

The contribution goes along three different directions.

1. it is relevant to standardize the clinical decisions making process also because different clinical decisions do have an impact on costs;
2. the operations management system should better support the clinical processes;
3. the current information and reimbursement represent a relevant gap.

Keywords: clinical operations, hospitals, value based healthcare

Enhancing coordination in complex modular hospital care provision

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The objective of our study was to analyse how modularity may support coordination of health care delivery in hospital care. Case research is conducted in a hospital, where patients with a complex condition, receive care in a multidisciplinary team. We included the perspective of the patients and service providers to align both interests. This study has demonstrated that modularity can be used to enhance coordination in health care delivery. This coordination can be achieved by interfaces, as they take care of the interaction between components and modules, both within and across organizations.

Keywords: Service modularity, Coordination, Interfaces



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Understanding how humanitarian logistics organizations build resilience

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One of the challenges facing humanitarian organizations is the need to build resilience against natural disasters. A recent review found that previous research has primarily focused on humanitarian operations with little focus on humanitarian development and resilience. In order to fill this gap, this study aims to explore how humanitarian logistics organizations build humanitarian supply chain resilience (HSCRES). An exploratory case study consisting of multiple in-depth interviews and document analysis was conducted. The results suggest that the process is driven by a number of factors including structure of humanitarian supply chain network and flexibility design in fulfillment centers. The end result of the research is a testable model of how resilience can be built throughout the supply chain network.

Keywords: Natural disasters, Humanitarian logistics, Resilience

Integrated humanitarian operations management in flood natural disaster

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This study described a comprehensive model that characterizes integrated humanitarian operations management in response to natural flood disasters. The proposed model use a two-stage approach to account for all related emergency logistics operations in the preparedness and response phases of disaster cycle management. The first stage concerns preparedness and initial response decisions while the second stage has been developed as a decision-making support tool for underlying, problems that arise during the flood disaster response phase.

Keywords: Humanitarian Operations Management, Optimization, Floods

Humanitarian supply chain management in refugee camps – a qualitative comparative analysis of short-term camps in Turkey and long-term camps in Jordan

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The purpose of this study is to investigate the challenges and trade-offs in humanitarian supply chain management for refugee camps while taking into account comprehensive sustainability performance objectives. Using case study research, we compare short-term refugee reception centres in Turkey with long-term refugee cities in Jordan. We expect to find insights into how the supply chain(s) of both camps are managed (differently) and how the management approaches affect operational, economic, ecological and social performance of the humanitarian operations. From a normative point of view, humanitarian operations management strives for aligning economic, environmental and social considerations of refugees with those of host populations in order to be sustainable.

Keywords: Humanitarian sustainable supply chain management, refugee camps, case study

Overview of disaster economic assessment methods

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This article seeks to perform an analysis of the existing methods of disaster economic assessment, regardless of their type (long duration or sudden), describing their objectives and evolutionary process through references found in the literature. The inclusion of new methods (crowdsourcing; epidemiological models; augmented reality; cloud; neural networks) ends up bringing possible improvements (execution time, prioritisation and operations planning) to disaster economic assessments.

Keywords: economic assessment, methods, disaster

Can 3D printing address operations challenges in disaster management?

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Disaster management entails activities for responding to and recovering from disruption to normal conditions. Disasters restrict the ability of operations managers, but technologies such as 3D printing have been proposed as a means of overcoming some of the restrictions. This research uses a state-of-the-art review of 3D printing technologies to determine the current and future potential to meet disaster management challenges. Specifically, one of the main categories of items listed in the Sphere Project handbook is considered. The analysis evaluates short, medium and long term feasibility and provides a research agenda for 3D printing and disaster management.

Keywords: 3D Printing, Disaster Management, Humanitarian Logistics

Supply management for rapid-onset disasters under demand, supply, and budget uncertainty

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We study relief item supply management for the immediate relief period of rapid onset disasters. We consider two common alternatives—pre-positioning and local purchasing—and provide insights and methods for pre-positioned inventory targets. With sufficient budget, inventory should increase in disaster frequency and severity; the reverse is true otherwise. If the budget is limiting investment in inventory, then the rate of savings from improved forecasting is amplified for critical items and attenuated for noncritical items. Our model can be used to estimate the value of mitigating constraints on local spend, such as a line of credit underwritten by a donor.

Keywords: Emergency relief operations, supply management policies

Application of fuzzy DEMATEL – ANP method to solve the allocation problem of refugee camps

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Purpose – The purpose of this paper is to identify which sub-criteria have the highest importance for siting the refugee camps.

Design/methodology/approach – This study uses a combination of the fuzzy, DEMATEL, and ANP methods. A comprehensive questionnaire was used for this qualitative research.

Findings – The five main criteria and 20 sub-criteria are defined. The highest-ranking sub-criteria include long-term planning, optimal distribution, and opportunity for growth.

Research limitations/implications – The evaluation is based on human judgment.

Originality/value – Help in selecting suitable locations for refugee camps on the grounds of understanding the importance of particular sub-criteria.

Keywords: Refugee Camps, Settlement, Fuzzy DEMATEL - ANP

E-voucher distribution routing and planning for Syrian refugee camps in Turkey

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The Syria conflict which began as an offshoot of the Arab Spring uprisings, has caused millions of millions of Syrian people displacement who need humanitarian aid in money in addition to in kind aids. The cash based intervention includes voucher, or its electronic version similar to a debit card so called e-voucher. The cost-efficiency of electronic transfers in humanitarian programmes are discussed in the literature.

In this study we investigate the logistics problem of distribution e-vouchers to the Syrian refugee in the southern parts of Turkey by proposing a mathematical optimisation model for the routing of distribution facilities.

Keywords: Humanitarian logistics, E-voucher, Routing

Development of a performance management system for wildfire operations management using SSM

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This paper describes the participative development process, and the outcome structure, of a performance management system for the operations processes involved in the confrontation of wildfires. To accommodate diverse stakeholder perspectives related to both prevention and confrontation, Soft System Methodology was used. The performance management system was developed in the framework of an EU funded project for benchmarking regional operations, and includes measures and improvement processes for needs assessment, knowledge and skills management, technology management and public awareness development.

Keywords: performance management, emergency operations, action research

An analysis of blockchain technology for improved performance in humanitarian logistics

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This paper analyzes the impact of blockchain technology on commercial supply chain management and reveals improvement potentials for humanitarian logistics processes. Motivated by overcoming certain inefficiencies of today's disaster response, the paper presents application areas in humanitarian logistics that could substantially benefit from blockchain implementation. In terms of methodology, this article is based on case study research including secondary data from 18 supply chain use-cases. Results of cross-case analysis indicate, that blockchain technology not only brings added value to commercial supply chains but could also lead to profound changes in the humanitarian sector.

Keywords: Humanitarian logistics; blockchain technology; case study research.



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Beat the dice: Sustainability uncertainty and implications on the total cost of ownership

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Through this innovative dice based classroom simulation, students are exposed to supply chain sustainability, risk management, and total cost of ownership (TCO) while also understanding their linkages. Student teams compete by selecting sourcing options such as supplier location, transportation methods and sustainability reputation from a menu, then see how their decisions fare as the product life cycle is simulated with a dice. Successfully conducted by multiple instructors, in multiple countries and across all levels of management education (undergraduate, MSc, and executive MBA), survey results (n=381) confirm that the simulation accomplishes multiple learning objectives while providing a highly engaging experiential learning classroom environment.

Keywords: Sustainability, supply chain management, class exercise

Bringing the factory to the students: Enriching teaching cases with Virtual Reality

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Recent developments in virtual reality technologies offer new opportunities for teaching operations management. In partnership with a global manufacturer, we developed a teaching case that integrates virtual environments of the manufacturers' real factories. We used the case in two operations management courses taught at ETH Zurich and evaluated the effects on students' learning experiences. To assess the effects, we used focus groups, feedback forms, and surveys. We find that students generally perceived that virtual reality improved their learning experience, but also that the current state of the technology has several limitations.

Keywords: Teaching operations management, Factory management, Virtual reality, Situated learning, Constructivist learning theory

Does flipped classroom design enhance student learning? Analysis of an undergraduate OM course

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Within higher education, there is a shift away from lecture-based passive learning approaches towards more active ones, such as the flipped classroom. This study focuses on a specific component of flipped designs, particularly online video lecturettes, to investigate their impact on learning gain that refers to the learning of students during the course. The data are from the formal assessments of 389 undergraduate students taking a first year Operations Management course in a UK-based global top-50 business school. The data were analysed through correlations by SPSS (version 23) software. The empirical results indicate that video lecturettes improve students' learning gain.

Keywords: Teaching and Learning in Operations Management; Technology Management in Operations; Service Operations Management

Is gamification an effective pedagogic strategy? Using Cuppa services to teach lean and process improvement

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There is an increasing body of literature that discusses the benefits of game playing – for example Vlachopoulos and Makri (2017) present a systematic literature review of the cognitive, behavioural and effective outcomes of games and simulations.

In this paper an updated version of the Jackson (1996) Cups Game is presented as an approach to teaching lean and process improvement. The research correlates the student-self-reported experience of the game with their ability to recall key lean and process improvement concepts. The mediating effect of experience on student key concept recollection is discussed.

The paper reflects on the advantages of using this game to teach lean and process improvement.

Keywords: teaching, pedagogy, simulation

Project management's university educational offering: A comparative analysis between Italy, United Kingdom and United States

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Project Management (PM) discipline and PM methodologies are extremely valuable for private and public organizations. As it is well known, for decades the main professional organizations linked to the PM, in particular the Project Management Institute (PMI) and the International Project Management Association (IPMA), have identified and formalized principles, guidelines and best practices useful for the correct management of projects and programs, to certify project manager's proficiency. The research investigates the university educational offering concerning PM discipline in Italy, United Kingdom (UK) and United States (US) in order to report different types of courses and topics lectured and perform a comparative analysis. The objective is to analyze in detail the presence/absence of fundamental topics unveiling the different type of PM courses in different countries, highlighting peculiarities of contents and underlining the impact not only at professional training level, but also at the academic level. Results of the research can be useful for suggesting improvement paths in the three countries.

Keywords: Project Management, University Educational Offering, Training

What is the right supply chain program for your students? Insights from alumni

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Every university want to release employable graduates into the job market. Yet, very little is known about how a program needs to be designed to increase the employability of supply chain graduates. This research aims to unravel the underlying mechanisms that link elements of a master program to students' employability. Thirty-one interviews with alumni with over 2 years work experience were conducted, inductively coded and analysed. Findings reveal that three mechanisms are important for enhancing employability of graduates: managing yourself, realism and creating independencies. These mechanisms can be linked to design elements of courses and assessment methods. As such, this paper is one of the first studies to explore how very concrete elements of master programs such as group work, setting deadlines, bringing practice into classes and assignments enhance students' communication, problem solving, analytical thinking and project management skills. Accordingly, this study complements insights related to learning methods such as active learning through showing which program elements enhance essential skills of graduates.

Keywords: Employability, Alumni, Skills, Knowledge

The service transformation game: Snakes and ladders to advanced services

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This paper presents a game that engages players with the transformation processes involved in servitization. We have developed a workshop activity using this game for senior executives from large enterprises and SMEs, which encourages participants to explore transformation processes. The activity employs a board game reminiscent of Snakes and Ladders. Transformation steps are assigned to the squares on the board, and enablers and inhibitors are associated with ladders and snakes respectively. The game encourages reflective learning by asking players to assign their own perceived barriers and enablers to the snakes and ladders, based upon their own experiences.

Keywords: Gamification, Organizational Change, Servitization

Can SCM students become process experts? An educational approach

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It has been shown that students' opportunities to learn are embedded in the instructional tasks with which they are invited to engage in the classroom. Integrating process modeling software in courses is a hands-on task that improves the students' understanding of business processes. Especially in supply chain management, the development of process models provides a unique learning experience for students, supporting their understanding of the cross-functional and inter-organizational nature of supply chain processes. Based on our teaching experiences, we present a higher education class that trains students on how to map processes, enabling them to derive theoretical and managerial implications.

Keywords: Supply chain management, business process management, teaching

The effectiveness of peer assessment in student learning

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This study reviews the effectiveness of a peer assessment exercise in a master's level module in Supply Chain Operations. The exercise was based on both individual and group peer assessment of an existing formative assignment within the module as well as parallel summative assessment from the lecturer. Students benefited from carrying out the assessment of their peers' work, and from giving and receiving feedback on the work. However, counter to much of the teaching and learning literature, results suggest that students considered the lecturer assessment feedback to be the most valuable learning element of the process.

Keywords: Peer Assessment, Teaching and Learning, Formative Assessment

The digital twin of a smart learning-factory

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During a project involving more than 50 SMEs it became evident that the communication gap between researchers, automation experts and SMEs is real.

This paper presents how a Smart Learning Factory with an accompanying Digital Twin can enable university researchers, SMEs and automation integrators, to co-develop highly innovative and powerful manufacturing setups, that fits the diverse needs of the SMEs. The unique aspect of this research is the digital twinning between Digital Twin and a scale model of the real world, providing a sandbox between the real-world manufacturing setup and the Digital Twin. Hence, an opportunity of fast risk-free testing.

Keywords: Smart Factory, Digital twins, Learning factory

Student evaluation of teaching effectiveness: Implications for scholars in operations management

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Many times, teaching rating by students are the most influential measure of the quality of teaching departments, courses and teachers to assess how curricula changes are perceived by students. This study seeks biases introduced by background variables. If these are relevant, then student evaluations as a valid indicator of teaching effectiveness for the purpose of quality improvement and assurance could be questioned. The research purpose is (i) to appreciate the suitability of business student ratings in assessing teaching performance, and (ii) to explore limitations of current practices considering student evaluation as a primary university tool to assess teaching effectiveness.

Keywords: Business Teaching Assessment; Student ratings; Ethical student's behaviour.

Improving society's ROI in educational investments via online courseware and experiential education: The quest to achieve affordable global reach

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Higher education faces an existential challenge. Specifically, many indicators now show that society is obtaining a very poor return on its investments in higher education. Despite dramatic increases in costs, students are graduating without the skills that are essential for career and life success. The Association to Advance Collegiate Schools of Business is thus advocating a greater emphasis on experiential learning. We introduce and demonstrate how online courseware can enable more effective experiential education. We then outline how professors can use class time to create an experiential laboratory to create a unique learning culture.

Keywords: Digital Courseware, Global Reach, Experiential Education

Using computer based multi-actor multi-criteria evaluation methods in master logistics classes

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The purpose is to provide insights into how to integrate a computer-based evaluation tool to improve the understanding of different perspectives when the teaching of logistics at masters' level. This study has had an action research approach to student centred learning by introducing a theme of cross-functional decision making through combining lecturing, case assignment and computer based tools. What can be seen is that this inclusion has filled a gap in the education and course. Adding the combination of the preparatory case work and the computer exercise gave the students the activity independence and gave room for new reflections.

Keywords: student-centred learning, cross-functional decision-making, logistics

Hungarian public administration: Creation a new service culture

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How to create a service provider state if customer orientation has no historical traditions as in the Hungarian Public Administration? The aim of the paper is to present and analyze a nationwide, customer service skills training program for civil servants, highlighting the innovative features of an online app used in that context. While the training program is meant to facilitate the paradigm shift and the adoption of client-friendly practices, the online tool, used with proved success, has the potential to ensure the long-lasting impact of the training. Research method: participant observation and online questionnaire survey.

Keywords: Culture-change, Governmental customer service, Experiential learning

Evaluation of decision making of teams in business simulation games using DEA

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The objective of this paper is to explore the available information provided by the reference sets. Different groups of decision making units (DMUs) can have different reference sets, indicating that several decision policies can be followed by the participating team. The paper shows how these different policies can be identified, and explains the main characteristics of the identified best practices. Several examples are used to illustrate the identification of best practices for the different participating teams. The presented method can further enhance the application possibilities of DEA for the evaluation of business simulation games.

Keywords: Data Envelopment Analysis, Business simulation games, Performance evaluation



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Innovative Technologies as Enablers of Sustainable Operations

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IoT adoption in agrifood operations: A conceptual model for technology transference

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The agrifood sector has historically been quite receptive of new technologies and the Internet of Things (IoT) is no exception. These technologies have great potential to improve the sustainability of the sector, particularly in the farming context. The adoption of technologies depends on factors, such as costs, perceived gains, risk reduction and easiness of use. Thus, the diffusion of new technologies is not straight forward. Given the potential benefits of IoT to farm operations, this paper proposes a conceptual model to address its adoption issues, under a technology transfer perspective.

Keywords: Internet of Things, Agrifood operations, Technology transfer.

Information sharing in sustainable value chain networks (SVCN): Innovative technology for transportation in cities

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The purpose of this paper is to explore the high-order themes related to information sharing in SVCNs with a focus on the applications of the Internet of Things (IoT) as an enabling innovative technology from the perspective of the expert community. This research is an inductive study and adopts a multi-case study strategy in the context of smart transportation for freight flow in the UK. 20 Semi-structured interviews were conducted with experts in smart transportation projects. The phenomenon of information sharing is enabled by effective innovative technologies such as IoT. A conceptual framework is constructed with themes of IoT applications and information sharing in SVCN.

Keywords: Information sharing, Innovative technology, Sustainable value chain network.

An integrated business model for supply chain environmental sustainability through, Internet of Things'

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The supply chain management literature indicates that limited research has explored the integration of environmentally sustainable approaches and technologies such as the Internet of Things (IoT) to support environmental sustainability development. In this study, an exploratory case study is used to explore the potential integration of the environmental sustainability approaches using IoT technologies. The initial findings suggest the potential integration of design for environment (DfE) and cleaner production approaches with IoT technologies to enhance environmentally sustainable performance of companies and their supply chains.

Keywords: environmental sustainability, integrated business models, Internet of Things (IoT)

A network theory approach to the sharing economy

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With the fast growth of the businesses of the sharing economy, scientific evidence is also accumulating describing their characteristics and growth patterns. After introducing the most important concepts and theoretical considerations relating to the sharing economy, we take a network theory approach to analyse the data of a regional driver-share company based in Central Europe.

Our data shows a fast growing, popular service with an interesting internal structure regarding the nodes (settlements) and links (trips) within the network and contributes to a better understanding of sharing economy businesses in the transportation sector.

Keywords: sharing economy, peer-to-peer ride sharing, scale-free network

How to measure the impact of digital transformation along industrial value chains? – Cases of the semiconductor industry

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This paper draws attention to the upcoming changes within sustainable supply and value chains of industries caused by innovative technology applications. With a special focus on investigating the digital transformation of semiconductor manufacturers, the presented study explores the scientific progress within this industry. A qualitative content analysis of several industrial use-cases from European semiconductor manufacturers was conducted. The results of this study contribute to theory building of how to evaluate value chain process improvement after innovative technical adaptations.

Keywords: Digital Transformation, Case Study Research, Value Chain Management

A comprehensive literature review of green supply chain management

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The aim of this paper is to provide a summary of the role of small- and medium sized enterprises (SME) in green- and sustainable supply chains using a comprehensive review of the literature. After introducing the most important notions relating to sustainable supply chains and the survey methodology, a detailed analysis of scientific publications describing various issues related to SMEs and their role in green/sustainable supply chains will be presented. Results show the most important focus areas addressed and methodologies used in the literature, as well as a list of potential research questions still unanswered in this important topic.

Keywords: SME, sustainable supply chain, literature review

Technological sustainability-oriented innovations in food supply chain: A conceptual framework

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The purpose is to explore sustainability-oriented-innovations (SOI) in food supply chain, specifically the association between innovation orientation and sustainability orientation. It is also to examine how actors can achieve higher levels of sustainability performance. This research applies an exploratory study, and is based on literature review and expert interviews. The research findings contribute to understand the links between innovation orientation of multiple innovative technologies and sustainability orientation of economic, social and environmental issues in food supply chain management (SCM). By developing a conceptual framework, it can be used in future empirical research for organizations to achieve SOI in food SCM.

Keywords: Sustainability-oriented innovation, Technology, Food Supply Chain.

Formal control and social control in green product innovation: An empirical research in China

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With the growing ecological concern and increasing environmental consciousness of our society, an increasing number of firms start to adopt green product innovation (GPI) for sustainable success. Although the existing literature has scrutinized the implementation of GPI, the investigation about what are drivers of this underlying practice is limited. To address the gap, this study sheds light on the relationship between control mechanisms, i.e. formal control and social control, and GPI, and explore the nature between two mechanisms. Using a sample from 239 senior managers and directors in Chinese manufacturing industry, we test the hypotheses through moderated structural equations modelling (MSEM). The research findings indicate that both formal control and social control have significant and positive impacts on GPI, but they need to be applied as substitutions. Drawing on institutional theory, we suggest practitioners apply formal control or social control individually because simultaneously adopting both mechanisms may bring negative impact on GPI. Besides, we also suggest managers and directors enhance their awareness of GPI because it positively influences firms' financial performance and social performance under the empirical evidence.

Keywords: Green product innovation; financial performance; social performance

Exploring the potential of blockchain technologies in the food supply chain: Opportunities and impediments

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The paper develops a Blockchain enabled food supply chain framework including the future opportunities and the present impediments based on systematic literature reviews and semi-structured case interviews from the emerging economy context. This study further paves way for future researchers to address technological and people related challenges in application of evolving technologies to mitigate the emerging problems in food sector. Interestingly, we didn't find many issues in process and performance aspects. The study will be the first in this context and opens up the discussion for future researchers and list the potential threats as per pseudo anonymity among the stakeholders.

Keywords: Blockchain, Food supply chain, Food security, Track and Tracing, Agri-food

Exploring potential applications of drones in the petrochemical industry

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The purpose of this paper is to investigate the potentials of using drone technology in petrochemical industry. Evidences from different industries reveal that industrial applications of drones are growing fast. Many petrochemical plants have started to use drones for visual inspections, and it seems that drones might become a source of technological innovation in the petrochemical industry. We conduct a multiple case study in the petrochemical industry. We collect and synthesize the opinions of 18 managers from three petrochemical companies. We describe potential use cases of drones in this industry and discuss perceived benefits and challenges.

Keywords: Drone technology, Petrochemical industry, Process innovation

Circular Industry 4.0: An integrative framework

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Both in theory and practice Circular Economy and Industry 4.0 have been historically considered as isolated mechanisms for economic growth, although some scientific contributions have recently highlighted strong synergetic relationships between them. Despite the existence of roadmaps for sustainable operations in Circular Economy through Industry 4.0 or of conceptual frameworks of Industry 4.0 in Circular Economy contexts, we still lack an integrative framework of Industry 4.0 and Circular Economy. Thus, we examine whether and to what extent Industry 4.0 is interdependent and interrelated with Circular Economy and can support the value creation and capture in Circular Economy business models.

Keywords: Circular economy, Industry 4.0, Circular economy business model, Digital technologies, digital transformation.



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Operational excellence in services: A survey-based study

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Lean Management is seen as a powerful method to excel in the service sector. However, only few service companies obtained the desired performance by implementing it. The aim of this research is to investigate the influence of organizational commitment in the relation between lean practices and operational performance. A survey was used for gathering data from service organizations operating in an international setting. Findings show that affective commitment does not directly improve operational performance but positively moderates the relationship between lean management and operational performance, while continuance commitment and normative commitment do not have neither direct nor moderating effects.

Keywords: Lean Management, Service, Survey

Sustainable leadership of operational excellence: Practices for leading long-term excellence and avoiding fire-fighting

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Leaders at all organizational levels striving to achieve and sustain operational excellence face pressure that frequently leads to behaviour un-favouring long-term excellence. While the operations literature presents ideals of leadership of excellent organizations and of balancing short and long-term, it offers limited advice for tackling the consequent behavioural challenges. For example, handling that human cognition under pressure tends to favour short-term survival behaviour such as fire-fighting rather than long-term capability-building. Based on a 1-year action research study, this paper investigates the behavioural challenges leaders are facing and identifies practices for supporting sustainable leadership of operational excellence.

Keywords: Leadership, Operational Excellence, Behavioural Operations

Operational excellence in process industries: In search of effective implementation patterns

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Many manufacturing firms launch operational excellence programs. However, there is still a lack of understanding of the managerial factors that influence their effective implementation. In this paper, we use survey data from a global manufacturing firm in the process industries to examine the effects of 28 different management practices on the implementation of an operational excellence program. Through a principal component analysis, we identify four sets of inter-related and internally consistent management practices. We empirically validate the effects of the four sets of practices on program implementation.

Keywords: Operational excellence, management control, process industries

Determining the financial value of process improvement – A systematic review

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Relying on a systematic literature review, this paper investigates the extent to which the academic community has paid attention to how the financial value of process improvement can be determined for single firms. Searching for articles on Lean, Six Sigma, TQM, and JIT published over almost four decades reveals a marked paucity of work in this area. Furthermore, the works that do exist provide few details in regards to data used or bases for the calculations. Financial value determinations pose serious challenges if complete and accurate impacts are sought, and represent an area in need of more research.

Keywords: Process improvement, Lean, financial value determination

Lean manufacturing implementation: Explaining the role of individual and collective worker perceptions

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Lean manufacturing leverages on human capital to contribute to wellbeing and operational outcomes through continuous improvements; however previous studies provide controversial results. Building on social exchange and social comparison theories, we propose this depends on social exchanges between workers, team leaders, team members and the organization. We test whether high quality social exchanges positively relate to individual wellbeing and contributions to operational improvements and if diversity of social exchanges in the plant moderates this relationship. Results provide support for the positive relationship between social exchanges and outcomes but a more nuanced picture of the moderation of social exchange diversity.

Keywords: Lean manufacturing, Social exchange, Multilevel

Sustaining Lean: The determinants of a continuous improvement and learning culture

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The aim of this study is to identify and propose the bundles of Lean practices that establish, embed, and sustain a continuous improvement (CI) culture. A conceptual framework, influenced by Knowledge-based view of the firm, was configured to assess the extent to which manufacturing companies are able to implement the selected Lean practices and to promote a sustainable CI culture. The findings (from 89 European manufacturing firms) reveal the significance of employee ambidexterity and cross-functional teaming on internal knowledge stock and sustaining a CI culture resulting from the implemented hard practices of Lean.

Keywords: Lean, Sustainability, Knowledge, Improvement

The interplay between lean practices, organisational culture practices and operational performance

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This paper investigates the influence of organisational culture on the implementation of lean practices in manufacturing companies. Using a quantitative sample of 295 UK companies, managers completed a survey on their level of lean implementation. The effect of lean practices on organisational culture and operational performance was analysed. Our findings show that lean practices have a significant influence on all of the cultural dimensions defined and that the process, normative and market dimensions have a significant impact on operational performance. This is one of the first studies to break down culture into sub-dimensions within the context of lean management techniques.

Keywords: lean, organisational culture, operational performance

Understanding company specific lean production systems. Is lean getting lost in translation?

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This research explores how Lean could be translated from a generic concept into a company specific production system (XPS). These types of translations are in practise often made by a XPS Support Function (XPS SF). The XPS SF of three cases serves as respondents. Theoretical implications of this research concern the translation of Lean as an important tool to understand the integration of Lean. Managerial implications concern the role of using translations of all Lean principles to develop a system that develops over time. Even if Lean is not completely lost in translation there are considerable difficulties to overcome.

Keywords: Lean, Production system, Translation

Achieving leanness: The relationship of lean practices with process exploitation and exploration

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Lean production is a socio-technical system allowing increasing operational effectiveness. It is widely assumed that Lean production contributes to the enhancement of operational efficiency through improvement of organizational processes and their interaction. However, the improvement could be achieved through processes of exploitation, exploration, or both. The survey of organizations adopting Lean production practices has shown that Lean production contributes to process control, incremental process improvement, and radical process improvement. The association of Lean production practices with radical process improvement constitutes the theoretical contribution of this article.

Keywords: Lean production, Process exploration, Process exploitation

Becoming lean: A process model of lean production

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There is a consensus among scholars studying Lean production that practices constituting Lean production should be introduced sequentially. However, previous literature on a sequence of Lean production is either prescriptive or analyses a sequence of introduction of Lean production from a change management perspective. A qualitative inquiry based on narrative strategy was used to generate a process model of becoming Lean. The model argues that organizations become Lean through four stages: exposing artifacts supporting individual action dispositions, increasing coherence of action dispositions, exposing coherence of action dispositions for group problem solving, and introducing pacing and automatic triggers of action dispositions.

Keywords: Lean production, Sequence, Process model

Network action learning for lean supply chain development – revisiting the phenomenon of Kyoryokukai

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This article explores how Network Action Learning carried out in Norwegian high-tech Maritime industry enabled a supply chain network to collaborate both strategically and operationally on lean supply chain development in order to realize quantifiable supply chain improvement. The process describes how the network made use of both organizational and inter-organizational action learning in the settings of a formal supplier association, which transpired across several mechanisms for learning-in-action.

Keywords: Kyoryokukai, Supplier Association, Lean Supplier Development, Network Action Learning, Action Learning Research

The moderation of lean manufacturing effectiveness by culture: Testing practices-OC congruence hypotheses

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Successful implementation of lean practices not only involves radical changes at organisational level on structure, strategy but also need to pay attention to creating right culture across different levels and to develop culture for the change. Therefore, an in-depth understanding of the role of OC in successfully implementing lean practices requires a comprehensive view of the phenomenon. Questionnaire survey was adopted for this study. A draft questionnaire was developed based on existing scales found in the literature. The final survey instrument was sent to British manufacturers from different industry sector. Hypothesis testing is conducted using hierarchical linear model.

Keywords: Lean practices, OC, operations performance

The productivity dilemma revisited: How process improvement can lead to product innovation

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This paper explores how process improvement (PI) approaches affect companies' capacity to incrementally and radically innovate their products. Using a qualitative multiple-case study method, three different PI strategies were found - "strategic and holistic", "facilitating and empowering", and "operational" - and their associated mechanisms for enhancing the impact of PI on product innovation were identified. Moreover, PI approaches were considered as enablers for product innovation when used strategically; however, when following either a "facilitating and empowering" or an "operational" approach, PI was regarded as an indirect facilitator or as an irrelevant factor in relation to product innovation.

Keywords: process improvement, product innovation, productivity dilemma.

Quality linkages in complex production systems with causal ambiguity

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A structured conceptualization method, concept mapping, is used to visualize the conceptual domain of quality linkages in a complex, small-volume production system of a premium automotive OEM. Concept maps are created to define clusters of sources of quality problems and rate their impact on product quality based on tacit knowledge of experts (engineers) of the production system. Dissemination of tacit knowledge in causally ambiguous production systems is critical to improve quality of managerial decisions. For implementing the results of concept mapping, an action plan was created.

Keywords: Quality Management, Causal Ambiguity, Concept Mapping

Bulding ambidexterity through creativity mechanisms: Contextual drivers of innovation success

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Do creativity methods consistently produce a significant net effect on innovation? Are the impacts of creativity methods related to operating context? Based on an ambidexterity perspective, we examine the effectiveness of different creativity methods on overcoming the tensions of the innovation process at individual and team levels. Drawing on European Union Community Innovation Survey (CIS2010) data collected from 23,537 firms, we estimate causal effects of creativity on innovation through a multivalued treatment effect methodology. Our results show that implementing ambidexterity in creativity methods increases the firm's propensity to innovate and to introduce a market novelty.

Keywords: creativity, innovation, ambidexterity

Decision-making in manufacturing strategy using a maturity model

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The study of manufacturing strategy is focused on two components: formulation process and content. While content has been widely discussed in the literature, formulation process has lagged behind. Therefore, this article presents the design and application of a Maturity Model to support Decision-Making (MMDM) in the MS formulation process. This model permits identification of a set of strategic projects to guide the long-term improvement of a manufacturing system. Using an action research approach, the model was validated in a Colombian manufacturing company, making both academic and practical contributions.

Keywords: Decision-making, manufacturing strategy, maturity model.

Statistical investigation of moderation on soft lean practices

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As soft lean practices (SLP) we intend those lean practices that are related to people engagement and development, promoting the human side of lean. In this paper we intend to investigate the relationship between SLP and operational performance and in particular if these practices are more efficacious in manufacturing contexts with high degree of repetitiveness of production. Data were analysed from the High Performance Manufacturing (HPM) project dataset using hierarchical regression and structural equation modelling (SEM). The analyses suggest that the degree of repetitiveness of the production system significantly moderate the impact of SLP on operational performance.

Keywords: Lean, soft practices, High Performance Manufacturing

Industry 4.0 as a moderator on the relationship between lean and operational performance

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Due to both convergent and divergent characteristics of Industry 4.0 and Lean Production (LP), it is unclear whether their concurrent implementation may increase performance. This paper examines the moderating effect of Industry 4.0 on the relationship between LP and operational performance improvement within a developing economy. A survey was distributed among 147 Brazilian manufacturing companies that had implemented both LP and Industry 4.0. Findings indicate that, although LP's low setup practices enhance performance, its effect varies when Industry 4.0 practices are also adopted. Managers should thus carefully prioritize the parallel adoption of different bundles of Industry 4.0 and LP practices.

Keywords: Industry 4.0, Lean, Operational performance improvement

On the synergy between smart industry technologies and lean principles

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The advent of industry 4.0 and its related smart industry technologies calls for a better understanding of how these novel technologies can be put to good use in companies that often have already started their lean journey. Therefore, this paper aims to analyse how smart industry technologies and lean principles affect performance and whether combining lean and smart delivers added value. Survey data was collected of managers in the Netherlands and 61 responses were analysed using Necessary Condition Analysis (NCA). The results indicate the necessity of lean principles for implementation of smart industry technologies and their combined effect on performance.

Keywords: Smart industry, Lean principles, Operational performance

The effects of institutional factors on trust and knowledge sharing in supply chain collaboration

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This study investigates the influence of institutional factors on trust and knowledge sharing (KS) in the context of supply chain collaboration (SCC). Two institutional factors including organisational culture and individual professionalism are selected to explore their effects on trust and KS among the supply chain network members. This research applies a multi-case study strategy. We collected empirical data across 5 manufacturing supply chain networks in Europe from 25 semi-structured interviews. This research identifies various trust dimensions in inter-organisational relationships. Furthermore, the research expands institutional theory in knowledge management, by investigating effects of selected institutional factors on trust and knowledge sharing.

Keywords: Institutional factors, Knowledge sharing, Trust, Supply Chain Collaboration

Perspectives on the interplay between process improvement approaches and product innovation. A literature review and research agenda

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This paper systematically reviews the literature on the interplay between process improvement (PI) approaches - such as lean, six sigma and total quality management - and product innovation. Findings show that two main views exist: control-oriented and learning-oriented. The former finds a mainly negative relationship, whereas the latter identifies a positive one. This review shows that these perspectives differ along seven main dimensions- capabilities, customer orientation, formalization, attitude toward risk, availability of slack resources, continuous improvement, and employees' involvement. Despite such contradictory views, the findings also indicate that a certain level of standardization through PI approaches is required for innovation.

Keywords: process improvement, product innovation, lean.

Drivers and challenges for automation of manufacturing: A multiple case study in the Swedish wood products industry

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The aim of this paper is to explore the drivers and challenges for automation of manufacturing in the wood products industry. A multiple case study was conducted where the drivers and challenges were examined from operative and managerial point of views. Findings indicate that improved profitability and competitiveness were some of the main drivers, while lack of strategies and insufficient technical awareness and expertise were emphasized as challenges. The identification of the drivers and challenges for automation can provide insights to be used as basis for investment decisions.

Keywords: Wood industry, Technology, Decision-making

Development of a conceptual framework to introduce new automotive variants: Insights from new product development research in automotive domain

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This study develops a conceptual framework by reviewing and analysing the implications of critical competencies from new product development (NPD) research in the automotive domain towards the successful and rapid introduction of new automotive model variants in the Indian marketplace. The outline of this study towards this conceptual framework is to determine and establish the key organizational competencies so as to successfully and rapidly introduce the new automotive model variants by the manufacturers in the business of Indian automotive domain.

Keywords: Organizational competencies, New automotive variants, Automotive domain

Real-time prediction of manufacturing lead times in complex production environments

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In recent, dynamically changing production environments, accurate prediction of manufacturing lead times is more complicated than ever before, with traditional methods not always applicable. Given the large amount of data that can be gathered from the processes, it is a natural idea to deploy machine learning for lead time prediction. We show that linear regression and in particular boosted trees achieve accurate lead time predictions in near real-time. The efficiency of the method is presented by experimental results, obtained from a simulation-based test case.

Keywords: machine learning, manufacturing lead time, data analytics

Development of a technology evaluation score model for manufacturing technologies

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Leveraging new manufacturing technologies is one key element for producing firms to stay competitive. The complexity and amount of technologies as well as their influence factors (e.g. market, environment, and society) are increasing every day. Firms require tools to leverage them based on their current situation. The developed technology evaluation score model enables firms to evaluate selected manufacturing technologies on the operational technology management level in a standardized way. The model is adaptable to the requirements of the firm. It considers business, environmental and social aspects. After the evaluation, the technologies are prioritized and thereby enable a competitive advantage.

Keywords: Technology Evaluation, Manufacturing Technologies, Operational Technology Management

Application and validation of a holistic profitability model within the technology-oriented theory of production

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In the course of significant and rapid technological and managerial progress in various domains of the manufacturing industry, individual advances with respect to a company's profitability have hardly been assessable for years. At this, the development of a technology-oriented theory of production is meant to facilitate an indication of how technological and managerial advances contribute to solve major trade-offs in the context of industrial manufacturing and how this affects the overall profitability.

For that reason, an outline of a comprehensive formula-based theory of production is applied to an industrial uses case of production planning and control in this paper.

Keywords: Theory of production, trade-off theory, production planning and control

A contingency perspective on the impact of environmental uncertainty and organizational mechanism on flexibility

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One of the recent business issues is the Internet of things. IoT and the big data from the Internet can support organizations in dealing with the uncertainty they face through the process of making available informational resources required to respond to customers' requirements. Such huge amount of data and information requires a certain balance between mechanistic and organic structures. Grounded on the contingency theory, this paper attempts to identify the feasible set of organizational mechanisms that have strong impact on the flexibility of organizations under different levels and sources of uncertainty, employing the survey data from Japanese companies.

Keywords: flexibility, environmental uncertainty, organizational mechanism

Investigating the impacts of PMIS quality on project management performance

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Project Management Information System (PMIS) is a special purpose information system that is created to provide useful information for project managers and participants to make effective and efficient decision making during projects. The use of PMIS is increasing in project based industries such as construction, defense, manufacturing, software development, telecommunication, etc. It is generally known that PMIS helps to improve the quality of decision making in project management, and consequently improves the project management performance. However, how much and which parts of project management performance are affected by PMIS still need to be studied further. The purpose of this study is to investigate the impact of PMIS on project management performance. In our research model, the PMIS quality affects project management performance, and in turn user satisfaction and reuse intention. Five hypotheses are established and tested by using statistical methods.

PMIS quality variables are adopted from DeLone and McLean (1992, 2003) and they are system quality, information quality, and service quality. Nine project management performance variables are adopted and modified from the PMBoK (2013) that are considered necessary to manage projects successfully. Also, industry and project characteristics are used to test the environmental effect on the use and efficiency of PMIS by the users, and they include industry types, project size and project duration. We assume that the effects of PMIS will be different depending on the industry types and will be greater, i.e., more useful, as the project size becomes bigger and the duration longer.

Data were collected by using a survey questionnaire from those people who had experience of using PMIS in various project related industries such as construction, defense, manufacturing, software development and telecommunication. The survey questionnaire consists of 5 point scale items and were distributed through e-mails and google drive network. A total of 181 responses were collected, and 137 were used for analysis after excluding those responses with missing items. Statistical techniques such as factor analysis and multiple regression are used to analyze the data.

Summarizing the results, among the three dimensions of PMIS quality, the two dimensions of system quality and information quality are found to have significant impact on the project management performance. In turn, the overall PM performance is found to have positive and significant impacts on both user satisfaction and reuse intention. However, examining the details reveals that only two individual measures, that is, 'processing time reduction' and 'communication within PM team', out of nine PM performance measures seem to affect user

satisfaction and reuse intention. Furthermore, user satisfaction is found to have a positive and significant influence on reuse intention although it does not play a mediating role between PM performance and reuse intention. It is found that the impact of PMIS quality on the PM performance is different depending on the industry where PMIS is used. System quality seems to be more important for improving the PM performance in construction industry while information quality seems more important for manufacturing industry. As for the ICT and R&D industries, PMIS seems to have relatively lesser impact compared to construction and manufacturing industries.

The contribution of this research is that it helps to clarify the logical relationship from PMIS quality to the PM performance, and to user satisfaction and reuse intention. Also, it helps us to understand what aspects of PMIS are considered beneficial and important to the users. These findings can help the PMIS developers to design a better information system by reinforcing the important quality factors which PMIS users regard highly.

Keywords: Project Management Information System (PMIS), Project management performance, Information system quality

Towards continuous improvement (CI) in professional service delivery: A conceptual framework

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Driven by rising consumerism and intensifying competition, the Professional Service Firms (PSFs), across the globe, are realizing the significance of established continuous improvement (CI) management systems/approaches. These approaches (such as Total Quality Management, Kaizen, Lean management, Six Sigma, and hybrid methodologies such as Lean Six Sigma) had been popular in the manufacturing environment for product quality improvement and production process simplification. Characterized by high process variability (owing to customized service delivery by knowledge intensive assets), Professional services (PS) need specific CI frameworks for improving the efficiency and throughput of PS operations. There are literature reviews on evolution of academic research on CI in services, in general. However, an extensive analysis of the latest dispersed research on PS is lacking. To address this gap, a Systematic Literature Review (SLR) of 81 papers published in 35 peer-reviewed academic journals from 1992 to 2016 was conducted. Based on the review, a conceptual framework for CI in PSFs is proposed.

Keywords: Professional services; Continuous improvement; Systematic literature review

Interfaces between service quality and the nature of fast food services

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Services quality is influenced by the comparative between customer's perceptions and expectations, and customer participation in production-consumption process of a service can contribute to influence perception. This article aims to analyze the service environment in franchises and quality of services, in light of services classification. using analysis method to test 5 hypotheses about service quality and the type of service, with a sample of 211 respondents. It presents as final considerations a classification for franchises in the food segment and results point out opportunities to manage the services assertively, regardless of the classification of services.

Keywords: Services environment, Service quality, service classification.

Disentangling the nexus between HRM bundle and lean: Understanding enabling HRM practices to support lean service

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This paper explores how service organisations utilise HRM practices to support lean service. Data was collected using semi-structured interviews from five service organisations and supplemented by observations, secondary data and field notes. The findings suggest 18 enabling HRM practices to support lean practices. Together, they ensure that service organisations: (i) resource the right people to support lean, (ii) train employees for lean knowledge, (iii) align their performance with lean, (iv) reward and recognise them for desired lean-behaviour and outcomes, (v) provide them with fluid flow of information on lean projects, (vi) encourage discretionary behaviour in favour of lean and (vii) look after their health and safety.

Keywords: Lean service, Enabling HRM practices, Multi-case study

Statistical process control: How level three leadership affects its effectiveness

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This study focuses on the analysis of level three leadership model proposed by Clawson, analyzing how leadership practices influence the relationship between statistical process control and competitive manufacturing performance. Ordinary least squares multiple regressions were performed using data from the international High-Performance Manufacturing project, including international plants in three industries. The findings show that just visible behavior leadership practices negatively moderate the relationship between statistical process control and competitive manufacturing performance, as it leads to create hostile work environment. Additionally, unconscious thought leadership practices seem to have a direct effect over CMP, promoting a favorable leaders' exchange relationship with their subordinates.

Keywords: Process control, Leadership Practices, Competitive Manufacturing Performance.

A framework for integrating process improvement into business process outsourcing

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Process improvement has become an important objective for organisations in business process outsourcing (BPO). Employing the organisational learning aspect of dynamic capability theory this paper develops a framework for understanding the capabilities required for process improvement in BPO. The research has identified a number of first order capabilities that are likely to positively impact process improvement in BPO, which share the same characteristics as ordinary capabilities in dynamic capability theory. Moreover, the framework includes a sourcing learning infrastructure level, which includes a number of elements that develop, integrate and renew the first order capabilities that support process improvement in BPO.

Keywords: business process outsourcing; process improvement; organisational learning and dynamic capability theory

Proprietary equipment, training, and performance: An absorptive capacity approach

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This study investigates the relationship between proprietary equipment and anticipation of new technologies, in the enhancement of product innovativeness and competitive performance. The absorptive capacity perspective suggests that companies that develop and modify their own equipment develop critical knowledge that will permit them to identify and assimilate new valuable technologies, that in turn, will put these companies on the frontier of equipment. Once these new technologies have been absorbed, operations training provides a key to the diffusion and application of the new knowledge. Contrary to previous literature, our results show that proprietary equipment has no direct effect on performance.

Keywords: Proprietary equipment, Absorptive capacity, Training

The effect of combinative strategies oriented towards efficiency and resilience in information technology consulting services firms

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The relationship between lean and risk management on operational efficiency and resilience, respectively, has been studied separately or as competing. This paper intends to reconcile these relationships as strategically combined to increase operational efficiency and resilience concurrently. Specifically, we explore the combinative relationship between lean and risk management on operational efficiency and resilience and the moderating roles of risk management in the relationship between lean and operational efficiency; of lean management in the relationship between risk and resilience; of competitive intensity on lean management and operational efficiency; and, of uncertainty in the relationship between risk management and resilience.

Keywords: Efficiency, Resilience, Combinative strategy

Time- and cost-oriented failure mode and effects analysis based on Monte-Carlo simulation

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The goal of the Failure Mode and Effects Analysis is to prevent the product from becoming failures and to support management in a more effective allocation of resources.

Making decisions with the application of traditional Failure Mode and Effects Analysis is not always appropriate if the company's financial goals are taken into account.

The goal is to create an approach that considers the duration time and the cost factors of ongoing process activities in prioritizing failures, which helps to make a financially viable decision in process improvement.

The paper finishes with conclusion, and suggestions for future research are made.

Keywords: FMEA, risk analysis, failures

Ship routing and scheduling for the assembly of a LNG plant in the arctic: A decision support system

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The construction of a Liquid Natural Gas plant in Yamal, Russia, required the assembly of modules transported from yards in Asia. In early stages of such projects, the feasibility of on-time shipping plans is a critical area of risk assessment, in particular in the arctic where accessibility is limited by ice and vessel supply. By describing the modelling and implementation of a Decision Support System designed to create optimal shipping plans, this paper contributes to show the relevance of the Northern Sea Route for industrial projects in the arctic and to illustrate the role of risk mitigation tools.

Keywords: ship routing and scheduling, arctic shipping, supply chain planning

NLP analysis of incident and problem descriptions

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In this article, incident, problem ticket RCA (root case analysis) are analyzed with Natural Language Processing (NLP). Considering that incident and problem description are mainly described in an unstructured-way, there is a need to apply text mining techniques to gain insights or detect focusing area. This case is more complex if incident or problem tickets related to large organization having wide-variety of services. This article shows how NLP can help to find patterns, area to focus by applying semantic analysis.

Keywords: Statistical Natural Language Processing, Incident and Problem descriptions, RCA



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Operations and Supply Chain Management in Engineer-to-Order Industries

OSCMETO

Reducing delivery times in Engineer-to-Order firms: Challenges and solutions

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In engineer-to-order industries, rapid order fulfilment can yield a significant competitive advantage. Firms with short delivery times win more orders, have higher agility, reduce their work-in-process and overheads, and can thus achieve lower costs. Yet, reducing delivery times has proven extremely difficult in practice. We use the literature to summarize 25 keys for reducing delivery times in engineer-to-order companies. Through three in-depth cases companies in the maritime industry, we study and discuss the application, challenges, and opportunities of these keys.

Keywords: Engineer-to-order, Lead time, Agility

Impacts of an assembly kit logistic solution in renovation projects: A multiple case study with camera-based measurement

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Logistics solutions are crucial for efficiency, especially in renovation projects with tight schedule. Manufacturing industries use kitting of assembly parts to improve time efficiency in assembly. Even if it is a promising solution in renovation projects, there is no empirical research on its impacts in renovation. We examine whether apartment-based assembly kits improve renovation projects' workflow. A multiple case-study design compares two projects: with and without the solution. Two cameras collected data for performance measurement in the selected apartments. The study generates insights on how kits prepared by a logistic provider in consolidation center can improve on-site performance.

Keywords: Construction logistics, Kitting, Camera-based measurement.

The design and implementation of a WLC system incorporating time buffer signalling: An action research study

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The purpose of this paper is to explore the particular issues concerning the design and implementation of workload control (WLC) in the management of a customised high touch time MTO (Make to Order) environment involving rotary moulding. The system embraces key workload control features, including order acceptance and controlled release incorporating time buffer management for priority control. The design and implementation over a two year period has offered opportunity to determine the applicability of S-DBR based WLC. The resulting system is integrated with a Sage ERP system and specifically designed to support operational decision making whilst providing visibility to the owner manager.

Keywords: workload control, S-DBR, time buffer management

The potential of information sharing to improve supply chain performance in construction projects

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The purpose is to explore the potential of increased supply chain performance by improved information sharing between suppliers and contractors in the construction supply chains. Six suppliers are included, representing different combinations of supplying materials and tools for the product or services to support production as well as few or continuous deliveries during the project. The study show that suppliers need different information sharing practices if they continuously present at site or have few deliveries. Based on this and information sharing literature, we have developed a model of what information different suppliers need, including how and when to exchange it.

Keywords: Information sharing, planning and construction industry

The contribution of subcontractor involvement in continuous improvement programs for industrialised housebuilding

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The involvement of subcontractors with their specific knowledge to on-site processes in continuous improvement (CI) programs seems beneficial. Despite known advantages for developing corporate standards and processes, the collaboration between subcontractors and industrialised housebuilding (IHB) companies is low. The purpose of this research is to analyse the challenges faced when involving subcontractors in CI. To investigate the problem a two years case study has been conducted. The findings reveal that both conflicts of interest between main- and subcontractors and IHB practices combined with inherent structures, cause the challenges. A set of measures to overcome those is developed and proposed.

Keywords: continuous

The 2-dimensional CODP for customization in ETO contexts

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Customization and engineer to order (ETO) are gaining interest in practice as well as in research. Providing such customer unique solutions is important for competitiveness in high cost environments and to support such operations the theory must support an integrated view of engineering and production. The 2-dimensional customer order decoupling point (CODP) is such a concept and it has gained considerable interest. The concept has extended the reach for decoupling thinking but still offers several avenues for further research. Three extensions are suggested: initial engineering, strategic leadtimes and customization. Cases are used to illustrate the usefulness of the extended theory.

Keywords: ETO, customization, decoupling point

Governance arrangements in complex, temporal supply networks: Delivering megaproject supporting ecosystems through local, small-medium enterprises

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Small and medium-sized enterprises (SMEs) are critical to the growth of UK economy. Therefore, organisations are increasingly under political pressure to contribute to development of SMEs. One way of achieving this is by integrating SMEs into supply networks orchestrated by big organisations. This presents a number of governance challenges for the network orchestrator, one of which is the selection of governance arrangements. This study seeks to examine this issue by conducting a single case study in the context of a megaproject supporting ecosystem. Findings reveal service complexity and supply-base capability to be contributing factors to the selection of governance arrangement.

Keywords: Supply networks, Network Orchestration, Megaprojects

Insights from the empirical applications of the customer order decoupling point

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Knowledge relating to the role of the customer order decoupling point (CODP) in Engineer-to-Order (ETO) supply chain management is available in the literature but fragmented and not synthesized in a coherent body of knowledge. This paper proposes a systematic review of the recent empirical studies developed in the ETO-CODP literature, to understand the existing contributions to the ETO definition (what), managerial approaches (how) and managerial implications (why) based on the different methodologies and the nature of the ETO sectors analysed. The outcome of the study is the identification of current gaps and proposition of existing opportunities for further empirical research.

Keywords: Decoupling point, Engineer-to-order, Supply chain management, Empirical research, Literature review

Product development flexibility in the aerospace industry

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The aerospace industry is facing an ever increasing pressure for efficiency and performance putting the new product development (NPD) at the centre of the firms' competency. Due to low-volume and high resource-intensive nature of this industry, NPD cannot be done with other resources than those of serial production, which adds to the operations' complexity and causes disruption to the production unless new products are fully compatible with the serial production. To better understand efficient and effective product design process, this research offers a high-level model for a sustainable NPD in complex and resource-intensive manufacturing such as the aerospace industry.

Keywords: New Product Development (NPD), Aerospace industry



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Towards the activity based hospital

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In Swedish healthcare and at Sahlgrenska University Hospital productivity needs to increase. Many activities are performed all over the hospital, but not performed in a standardised way. The very first step to create standards for activities is to standardize the name of the activities and put them in a structure. There are standards, several official standards for both naming and carrying out health care activities, but there is no standard that includes the supporting work that is not strictly patient care. This paper describes an initiative at Sahlgrenska University Hospital using design science to develop a common terminology and structure for describing and defining all work activities performed at medical and surgical care units.

Keywords: Productivity, Hospital management, TDABC

Purchasing in practice: How the healthcare system shapes purchaser's chronic care chain management

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Abstract This research investigates how healthcare system characteristics shape healthcare purchasers chronic care chain management. Based on a multiple case study conducted in England, Sweden and the Netherlands we found different healthcare system characteristics, originating from a policy and care chain level. These characteristics shape the perceptions and actions of purchasers and thereby have both positive and negative consequences when pursuing improvement of chronic care delivery. We build on healthcare and service supply chain management literature by showing that healthcare system characteristics not only determine influence or abilities of purchasers, but also their focus of attention and attitudes towards care providers.

Keywords: Healthcare purchasing, Chronic care, Buyer-supplier relationships

Exploring the adoption of standardised processes in professional service operations: Implementing the acute stroke care 'pathway' in a hospital

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This research explores what, if any, are the distinctive characteristics of standard professional healthcare work hindering or supporting the adoption of operations management (OM) initiatives. We utilise concepts and insights from the healthcare OM and routines theory literatures, with the research taking the form of a single in-depth case study of the adoption of a stroke care pathway in a UK hospital. Our findings show that the implementation of standard work, whilst still a valuable ambition for healthcare improvement, is a multi-dimensional puzzle. We conclude that although pathway implementation took flow dependency as its design logic, failed to recognise other forms of dependencies which impact its performance. Additionally, pathway artefacts (diagrams, software, etc.) can offer a critical insight into a key challenge for 'standard' (and the standardizing of) professional work: individual autonomy.

Keywords: Operations Management, Organisational Routines, Healthcare

Care coordinator as a means to improve continuity and quality of patient care

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Care coordinators were introduced along with cancer care pathways in the Swedish health care system. This paper presents the results from a quantitative survey where the role, challenges and contributions of coordinators in cancer care pathways are studied. Three types of organising the coordination function were identified: coordination within a care unit, with the patient and at the system level. The study shows that there is no "one-type-fits-all" solution, but the conditions and needs in each pathway and care units have to be evaluated prior to appointing a coordinator to achieve best results and ensure an efficient use of resources.

Keywords: care coordination, continuity, cancer care pathways

The influence of backlog on emergency department crowding: A comparative case study analysis

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Emergency department (ED) crowding has been a prolonged challenge of the healthcare sector in many countries. Whilst ED crowding is often attributed to a more system-wide mismatch between rising demand and constrained financial and material resources, improving the internal ED process remains critical due to its immediate impact on the quality of the care service. This study conducts a comparative analysis between an English ED suffering severer crowding and a Dutch ED which is hardly affected by the problem to gain an in-depth understanding on how severe crowding problems can be explained by the internal operational processes of an ED.

Keywords: backlog, emergency department crowding, healthcare operations

Analysing the relationship between health service production method and performance outcome

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Public services are increasingly outsourced yet full outsourcing is not always possible due to e.g. market reasons or the management challenges. Thus public organisations apply varying methods to their health and social service delivery. This research looks at the relation between these different delivery methods and outsourcing outcomes. Quantitative and qualitative data is analysed considering four health and social care service delivery types in 29 Finnish municipalities. Our findings partly contradict transaction cost economics in how service asset specificity and measurability impact outsourcing success. The actual management and organisation of the outsourcing and the municipality size explain the findings.

Keywords: outsourcing outcomes, transaction cost economics, health and social care services

Simulation-based analysis of lean implementation in healthcare

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This paper aims to analyze the impact of lean practices implementation in the context of healthcare supply chain in Brazil. The paper develops a case study of a public school hospital. The research determines current value stream mapping and it proposes the future state after implementing lean practices. The simulation model uses these data to understand variability of lean practices adoption. Findings indicate that the simulation model provides a framework to support the decision-making process and it allows the verification of inventory policies. The simulation is primarily a decision support tool and does not directly seek optimum solutions.

Keywords: Lean practices, healthcare, simulation model.

Challenges in public sector operations: A case study in a UK county council

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Managing operations in the Public Sector is different from managing operations in the Private Sector due to the nature of stakeholders' involvement. This research work explores the case of county council operations in the UK. The administration team of the county council managed a large project that involved several different teams, and required management of operations by a number of managers operating at different levels. Managing operations in a Public Sector organization is a leadership responsibility. The aim of this work is to investigate the role of the operations manager in public sector organisations and to apply learning from previous projects to future projects.

Keywords: Public Sector, Public Sector Operations, Challenges in Public Sector

Role of public procurement to promote Indian SMEs sustainability

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Small and medium-sized enterprises (SMEs) contribute significantly to Indian GDP and Public Procurement. The supply and demand side of SMEs are challenging; hence they struggle with their sustainability. In demand side public procurement are very demanding, and competitive. In public procurement, there is an economic pressure of bidding at the lowest price consequently threatening the SMEs sustainability. Literature discusses policy and marketing strategy of the public procurement with SMEs, but there is limited literature on the procurement practices of public sector undertakings (PSUs) with Indian SMEs. The paper aims to explore the role of Indian public procurement in driving SMEs business sustainability.

Keywords: SMEs, Sustainability, Public Procurement.

Hungarian energy law as an example of using complex system viewpoints for the public sector

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Complex systems theories come from hard sciences. The question arises whether these viewpoints can add anything to the understanding of the operation and failures of continental normativity governing the public sector.

Via certain industry-specific examples, we may observe that Hungarian energy law, one of the absolute extremes of continental law is complex. These lead to the identification of such issues like emergence and “robust yet fragile” dilemma. Identification of the proliferation of norms may also let us closer to the failures of the system. These approaches can also assist identifying systemic risk, whilst also helping to understand country risk issues of the regulation and quality concerns of public administration.

Keywords: Public administration, Energy law, Systemic risk

Definition of key drivers for project success regarding the General Data Protection Regulation (GDPR)

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In the context of the General Data Protection Regulation (GDPR), organisational governance must consider data privacy concerns and regulations. This will avoid illegal situations, the related fines, damage to organisational reputation or, even, temporary/definitive limitation on processing activities. An innovative conceptual model is proposed to deliver the necessary change that addresses GDPR concerns based on the enablers concept. Moreover, project success is (re)examined to include stakeholders perceptions, in addition to organisational effectiveness, which is defined by the respect for legal requirements and by demonstration of compliance with the Regulation at an acceptable cost, i.e. the typical internal deliverables.

Keywords: General Data Protection Regulation (GDPR); project success; privacy by design and by default.

Public service digitalization: Is it a new way for servitizing public services?

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This work-in-progress paper is to examine how servitization and digitalization are connected and how they can be used for public service development. This paper as a first phase gives an exploratory review of related articles and examines how digitalization and new technologies can change public services and how governments can use these solutions for the servitization of public. In the next phase a comparative case study analysis will be done to compare public service digitalization strategies and approaches of Finland, Hungary and Slovakia with a focus on identifying good practices which can be transcribed and applied to the Hungarian system.

Keywords: servitization, digitalization, public services

Modelling patchwork families: Service processes of guardianship offices

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Nowadays patchwork families mean newer and newer challenges in different areas of life. It also presents some difficulties for guardianship offices to solve the complex and diversified issues of patchwork families by time. In this paper I present the conduct of contact affairs by mentioning the fact that during the procedure no difference is made between the various types of families. This fact induces great challenge for those working in public service since the same amount of time is ensured for the procedure of each family type. However, patchwork families are more complex than traditional families, thus dealing with their problems is also more complex. In my study I illustrate the types of patchwork families, and then I demonstrate the specifics of the guardianship's procedure in case of this family type.

Keywords: guardianship office, patchwork family, contact affairs, optimisation

Inter-municipal cooperation in Hungary: The factors explaining cooperation in service delivery

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Inter-municipal cooperation (hereinafter: IMC) is an important element of local government reforms across Europe. There is a growing attention both in academic literature and on governments' reform agendas to examine the forms and results of different IMCs. This widespread phenomenon did not avoid Hungary either. There has been a long discussion since the early 90s – the establishment of the current local government system including almost 3200 local governments with extremely broad scope of responsibilities – on the adequate forms of IMC. Despite of this permanent debate and the introduction of many government policies intending to stimulate the greater cooperation on local level, the rationalities behind IMC and the factors that might trigger local governments to engage in increased cooperation with their neighbors have not been systematically analyzed yet. Hence, this study aims to explore what factors explain the different levels of cooperation among local governments. There is strong evidence underlined also by previous studies that service delivery infrastructure (organizational factors), spatial factors and economic constraints are significant drivers (or barriers) of IMC. Our study presents an analysis explaining the effect of these factors on the actual number of formalized IMCs among Hungarian local governments in the field of service delivery. By this it provides a better understanding of the factors driving IMC. Based on the preliminary results of this study future empirical research should give more elaborated attention and a deeper understanding on how these factors might affect the cooperation arrangements and its results themselves.

Keywords: service delivery, inter-municipal cooperation, public service capacity, local government, Hungary

Digital innovation in government services: Harmonizing theories, contemporary technology and practical experiences

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We present a case study of Hungary's electronic income tax declaration application – an application which was rolled out in 2017 and has received a surprisingly good response both from experts and from the public. Our research model was based on the concept of digital service innovation, a position arguing that digital innovation differs from classic innovation theories in that it is less bounded and more fluid in terms of: a) problems-solution pairing, b) how innovation agency is distributed and c) outcomes and processes are connected. We gathered data from user through questionnaires and public administration decision makers through interviews.

Keywords: digital service innovation, government services, on-line tax declaration

Developing lean and agile service operations processes in a university environment

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This paper takes an Action Learning Research approach to explore how the principles of lean have been applied at a large European university, where the objective was to enable sustained continuous improvement across multiple service delivery processes. Through a portfolio of six projects we examine the governance mode overseeing this strategic initiative. The results are presented in terms of learning and reflection using Revans' systems of alpha, beta and gamma.

Keywords: Lean Thinking, Higher Education Service Delivery Processes, Action Learning Research, Governance Mode

Action research addressing work stress in primary education using lean tools

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Teachers of Primary Education experience high levels of stress. We examine the use of value stream mapping as a rational coping strategy for teams of teachers to overcome work-related stressors. The processes that have been selected by the teachers relate to coping with increased variety, long and uncertain throughput times, and unclear specifications of processes. The value stream mapping method has been adapted in order to make it useful for teachers without any background in lean. We show how this has enabled them to develop rationale coping strategies to reduce work-related stress.

Keywords: Value Stream Mapping, process improvement, service operations

The role of human resource departments in lean six sigma initiatives

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This paper explores one of the emerging themes from a recent Systematic Literature Review of the use of continuous improvement methodologies in the public sector over the last 17 years. The role of HRM is at the core of the critical success factors for implementation but can be bypassed by organisations due to existing bureaucracy, a failure to engage in change management or simply because the organisation seeks 'quick wins' through limited tool deployment rather than culture change. The literature is critically reviewed to summarise learning for public sector organisations and identify good practice for implementing or reinvigorating initiatives.

Keywords: Lean Six Sigma, Public Sector, Human Resources

Profiling the resilience of the blood supply chains: Lean versus agile

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The Blood Supply Chain (BSC) deals with multi-dimensional complexities, primarily caused by its very perishable nature and the substantial variability at the demand and supply sides. Coherently, BSCs are often expected to be agile; however, blood quality could be better addressed by adopting a lean strategy. Since the resilience of BSC is paramount for the continuity of healthcare service delivery, the present research performs a systematic assessment of the resilience characteristics of BSCs, in routine and emergency scenarios, according to different SC strategies. To this end, a game-based approach, with the aid of discrete-event simulators, is adopted.

Keywords: Supply Chain Strategies, Resilience, Blood Service

Capacity planning for robotic surgeries: A simulation based approach

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The purpose of this research is to assess the implications of transition from open to robotic surgery at the surgical gastroenterology clinic of a public hospital in Denmark. A Discrete Event Simulation model was developed with multiple scenarios in order to assess the implication of robotic surgeries utilization of operating rooms, wards and overtime. The simulation models identified overtime as a critical performance measure. The results showed that to successfully adopt robotic surgeries for the next 3 years, the clinic needed to standardize processes. After the initial years, the clinic could either plan for less robotic surgeries and thus avoid any further investment or invest in more robotic surgery capacity.

Keywords: capacity planning, robotic surgeries, simulation

Practice of inclusion of residents in the operation of Hungarian municipalities

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Inclusion of local residents in the decision-making in communities, in urban planning and in delivering municipal services has intensely been debated in the scientific community and among practicing planners. Underperformance of communities and failures of programs have proven that inclusion of locals with their social networks, skills, prowess and expertise have beneficial effects on the long-term performance of a community. In a research carried out within the Municipal Coordination Office of the Ministry of Interior of Hungary, we delineated and analysed the situation with the underlying and correlating factors and issues with various research methods.

Keywords: Inclusion, Participation, Municipalities

Resource orchestration to scale up smart city networks

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The purpose of this research is to identify which network resources are critical to smart city networks scaling up and how these resources are successfully orchestrated across members of these collaborative networks during for scale up. The paper is based on two exploratory case studies of interorganizational smart city networks that examine how smart city innovations are scaled up. The results are discussed through the lens of resource orchestration theory. The findings illustrate that project success to scale up can be achieved through a proper orchestration of resources in a network with respect to initial set of actors and resources involved, and activities performed.

Keywords: resource orchestration, interorganizational networks, scaling up

Comparative analysis in centralised European public procurement

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Writings associated with centralised public procurement in the literature approach this issue from different angles. In our view, when analysing centralised public procurement models and solutions, attention needs to be paid to the specific features of public procurement as well as the institutional characteristics of the major central procurement organisations. In our research, we chose a few of the central procurement organisations in 8 European countries to compare their activities, market positions and institutional characteristics. This comparison calls attention to the diversity of analytic criteria even in this case, underlining that the legal regulatory background to public procurement is not necessarily predominant in determining specific features and characteristics.

Keywords: centralized procurement, cooperative procurement, public procurement

Key success factors for co-ordinated benchmarking projects using the TRADE benchmarking model: Lessons from Dubai

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This study investigates the process for co-ordinated benchmarking projects and identifies the key success factors that facilitate such initiatives. It is based on the case of the 'Dubai – We Learn' initiative which comprised 13 co-ordinated benchmarking projects in different government departments. The study collected and analysed data on the 13 projects as well as perceptions of individuals that participated in the initiative. The study identified and classified the key success factors into five groups – leadership, documentation, teamwork, skills and operations. Furthermore, the success factors were differentiated by the stages of the TRADE Benchmarking Methodology for which they were most relevant.

Keywords: Benchmarking, Organisational Excellence, Dubai

Assessing the readiness of public administration's organisational culture for business process management: Results from a pilot study in Germany

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This paper presents a pilot study to examine the organisational culture of German local government institutions regarding their support for business process management (BPM). For this purpose, two measurement instruments are combined to provide different cultural perspectives: the BPM culture assessment of Schmiedel et al. (2014) and the Competing Values Framework (CVF). Findings show a surprisingly balanced culture with a tendency to hierarchical characteristics and a high importance of informal structures. Lessons learned and shortcomings of the chosen approach are discussed which result in recommendations how to refine the questionnaire and ideas for future research.

Keywords: Organisational Culture, Public Administration, Business Process Management

Requirements Analysis for effective operations management in the modernization of defence forces

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In 2009, the Australian Army implemented the Adaptive Army initiative following a wide-ranging review of the higher level command and control frameworks. The key concept in this change is to provide for industry engagement within modernisation. At the outset, it is necessary to have an understanding of the nuances associated with the terms modernisation and capability. This paper utilises a case study approach to hypothesise and examine the validity of the key concept. Through this research, the stakeholders, benefits for both army and industry were identified and an engagement architecture was proposed.

Keywords: defence forces, modernization, capability lifecycle, requirements analysis, industry engagement

Institutional logics and efficiency pressures in public organizations: What about the healthcare sector?

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This study describes the current state of public sector logic from the perspective of healthcare professionals. More than 1500 healthcare professionals answered the survey concerning the way in which values, decision making and aims appear in the public sector. Healthcare professionals felt that the essential value in the public sector is still the respect for human life. However, they also argued that good care has become subordinate to financial values. In the current age of austerity, improving efficiency in the public sector is inevitable. However, it shouldn't be done by jeopardizing professionals' ability to work according to their professional logic.

Keywords: Institutional logics, Healthcare, Efficiency pressures



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Other Topic

OTHER

Reward-based crowdfunding campaigns: Informational value and access to venture capital

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We consider an entrepreneur who designs a reward-based crowdfunding campaign when the campaign provides a signal about future demand and subsequent venture capital is needed. We find that both the informativeness of the campaign and gaining access to venture capital affect the entrepreneur's decisions. In particular, entrepreneurs should launch the campaign either when it is highly informative or when it is uninformative at all. For relatively low levels of informativeness, the entrepreneur might forgo the opportunity of acquiring information via crowdfunding. We also find that the preference of entrepreneurs in favour of crowdfunding is stronger than that of VCs.

Keywords: reward-based crowdfunding, information acquisition, venture capital

The evolution and influence of project management theory and practices: A process network analysis

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This paper sets out a key contribution by analysing the development of Project Management theory and knowledge. By mean of a research conducted on the Project Management Body of Knowledge (Project Management Institute), authors employed tools and methods from Social Network Analysis to represent and analyse this standard of Project Management and its processes as a graph with nodes. Results of the research shed light on the evolutionary dynamics of Project Management, showing how through different years and (six) editions of the standard, relevant processes, Knowledge Areas, and best practices changed, reflecting different views that shaped the evolution of the field.

Keywords: Project Management Evolution, Network Analysis, Central Processes

Sharing agreements and quality attributes in data manufacturing

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Data utilized in organizations as a resource, can provide multiple advantages for value creation and innovation. Nowadays, value creation is focusing on the data extraction, generation, collection and exploitation strategies formed around data as a raw material. In our study, we suggest argumentation and abductive reasoning for data processing while we extend the theoretical background of data manufacturing. The aim of the study is to provide a parsimonious approach for data processing with a focus on the quality attributes, to propose a research agenda for data value creation and new strategies around data used as a resource for competitive advantage.

Keywords: data sharing agreements (DSAs); data quality; data manufacturing; argumentation reasoning

Project Value: A literature review

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In the last years, the idea that project value is made by sum of tangible and intangible elements (PMBok Guide, 2017) became commonly accepted; the need for an holistic approach supplementing value creation with value capture have been also recently highlighted (Laursen & Svejvig, 2016); nevertheless there is still not a clear and exhaustive definition in literature that clarifies which are the elements whose sum would constitute project value and what factors drive them.

In order to identify and report the state-of-the-art regarding project value concept, the present study consists in a systematic review of literature that aims to provide a definition of project value and to define the project value driving factors.

This research not only contribute to academic research in the field of benefit and portfolio management but also lays the foundations for a multidimensional model that would take in account the multitude of aspects identified, providing a practical way to custom, esteem and compare project values.

Keywords: Systematic Review, Project Value, Benefit Management, Portfolio Management.

Industrial Ecology for developing an extended network of industrial ecosystems - an exploration of the solar cell technology industry

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The ultimate goal of IE is to develop high levels of closed-loop material exchanges to enhance environmental sustainability through transforming linear transformations of industrial processes to closed-loop industrial ecosystems. There is no exception for the solar cell industry. There will be a problem to deal with a significant amount of afteruse solar cell products in a near future. This study considers the applications of IE to the solar cell industry to emphasise the importance of the after use options at the product and process design stage through design for environment (DfE) to close material loops leading to the reduced negative impact on the environment.

Keywords: Industrial Ecology, extended networks, solar cell industry

Analysing innovation's impact on operational effectiveness: The case of Colombian companies in the Valle del Cauca area

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Organizations are spending substantial resources in the implementation of innovations. Therefore, it is important to evaluate if the management of those innovations has positive results on the effectiveness of the operations. Quantitative data from 155 questionnaires were analyzed using structural equation modeling. Respondents were selected from several industries in the area of Valle del Cauca in Colombia. Initial findings suggest strategies have an indirect impact on operational effectiveness through the achievement of the learning process in the studied organizations.

Keywords: Innovation strategy, organizational learning, operational effectiveness.

Knowledge integration strategies within a smart specialization cluster: Enabling sustainability in the water-energy nexus

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Cultivating learning in a cluster is directly impacted by the ways in which knowledge from various sources is integrated. In this study, we address the question of how to apply knowledge integration strategies in a smart specialization cluster made up of a large network of organizations. The purpose of this paper is to analyze and identify the knowledge integration strategies applicable for the dissemination of knowledge in a collaborative cluster. This paper explores a case study of a specific collaborative network of organizations in Ireland and Wales in the EU-funded water-energy project, Dŵr Uisce. The findings point to evidence of the application of a selection of knowledge integration strategies to disseminate and deploy knowledge efficiently in a smart specialization cluster.

Keywords: Knowledge integration, strategies, sustainability.

Extraction of hierarchical causal loop diagrams from dynamic models

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Decision support systems require models for representing problem-specific knowledge. Among these models, causal loop diagrams (CLDs) are widely used to visualize how the variables of a complex system are interrelated (Spector, 2001). CLDs have a network like representation, where the edges show the relationship types between variables represented as nodes. Building CLDs require in-depth expert knowledge, so there is a need for tools that can support the identification and the validation of these models (Richardson, 1986; Richardson, 1997; Saisel, 2006).

Dynamic models (DMs) are used when the decision requires the simulation of the model to predict the states of the system. DMs are used in wide variety of fields, like physics (Melby, 2005), economics (Gandolfo, 1971), chemistry, and medicine (Jackson, 2015). DMs are represented by Stock and Flow (SF) diagrams containing variables which describe parameters, stocks (state variables changing in time), and flows, representing the change rates. The more complex a DM is, the more precise prediction it can provide (Bar-Yam, 1997). However, as the models evolve in complexity, it is getting more and more difficult to understand the mechanisms and the interactions among the variables.

Our fundamental idea is that we transform DMs into CLDs. Since these models are too complex, we follow the rule of simplification (Doyle, 1999), we develop an algorithm that structures complex CLDs, and defines modules and automatically determines the main subjects of the system.

Based on this idea we created a novel tool to discover the hidden structure of dynamic models by converting it into a CLD. The proposed method helps in decision making, model creation, and validation by revealing the structure of complex systems, identifying key variables.

Our methodology follows four steps: parsing DMs to CLDs, modularity and centrality analysis of the CLD network, identification of the roles of the modules, and drawing the hierarchical CLD by connecting the extracted modules.

Keywords: Decision support, Network analysis, Dynamic models

Order picking in dense areas – productivity impact of confirmation methods

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Confirmation methods are applied in supply chain order picking to increase picking quality, but research is lacking about how various confirmation methods affect picking productivity. This paper's purpose is to identify the extent by which the type of confirmation method affects picking productivity in dense areas. Four confirmation methods (button-presses, barcode-scans, voice-commands, and RFID-wristbands) are studied in an experiment. The placement confirmation method is found to greater impact productivity than the picking confirmation method, and RFID-wristbands and button-presses display higher productivity than barcode-scans and voice-commands. The findings are relevant for practitioners and academics involved with designing order picking systems.

Keywords: Mixed-model assembly, Order picking, Picking information systems

Robot based compact storage and retrieval systems performance in order picking applications

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This paper addresses the application of automation in order picking systems. Specifically, Robot based Compact Storage and Retrieval (RCSR) systems are in focus. To increase the understanding of RCSR; the paper's purpose is to identify the performance aspects of RCSR systems. The methodology includes developing a theoretical framework of performance and design areas from relevant literature and presents a case study from an application of RCSR system in an e-commerce setting. The findings contribute to supporting companies in the decision making of automation in order picking systems, in terms of when and how RCSR systems could be used.

Keywords: Order Picking, Automated Material Handling, Robot Based Compact Storage and Retrieval Systems



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Performance Measurement and Management

PMM

Performance measurement and management in temporary organisations: An organisational control theory perspective

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Despite developments in the performance management literature, performance measurement and management in temporary organisations have not been considered from an organisational control theory perspective. The aim of this paper is to explore how organisational control theories emerging from the performance management literature influences how performance of temporary organisations are measured and managed. Existing case studies presented by UK project professionals were analysed through an organisational control theory lens, considering both technical controls and social controls. The findings contribute to greater understanding of control mechanisms within projects and provide new theoretical and practical insights for performance measurement and project management fields.

Keywords: Performance Management, Temporary Organizations, Organizational Controls

Measuring company performance from an environmental perspective: A composite indicator for truck manufacturers

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This paper aims to construct a composite indicator for truck companies to quantify their performance with an environmental perspective, by mathematical models rather than heavily by subjective scoring. Tobin's Q is used as an indication of company performance. The bivariate correlation analysis, a modified linear technique based on min-max normalization and a geometric mean with unequal weights are used to construct that composite indicator. The method is transparent, and the composite indicator derived can serve as a statistical tool for benchmarking. A case study is conducted in three truck companies from the fiscal year 2008 to 2016.

Keywords: Performance measure, Composite indicator

Testing the theory of performance frontiers in the era of Industry 4.0

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Although the Theory of Performance Frontiers (TPF) has been central to understand manufacturing strategy choices and performance, attempts to empirically test it have been few and incomplete. Over the last decade there has been significant development of new Advanced Manufacturing Technologies (AMTs), captured by labels such as industry 4.0, which may hold the potential to revolutionize established theory. This study employs Data Envelopment Analysis to examine whether the TPF holds in this new environment, considering operating frontiers and asset frontiers determined by recent AMTs. Based on data from 931 manufacturers, we provide insights for manufacturing strategy associated with recent AMTs.

Keywords: Manufacturing Strategy, Performance Frontiers, DEA.

Performance measurement and formalization in small and medium sized enterprises: A systematic literature review

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Performance measurement (PM) has been recognised as one of the main managerial processes used to enable organisation alignment, clarity, and achievement of short and long-term objectives. Given the important role of Small and Medium Sized Enterprises (SMEs) in the development and growth of national economies, scholars across the management domain have emphasised the importance of providing these organisations with systems and processes that could facilitate their growth and survival. As such, few studies have focused on utilising PM in SMEs. Research stresses the difficulties and issues of designing, implementing, and utilising performance measurement in SME, yet finding a solution has been a point of contention among scholars and practitioners. Also, despite the potential benefits of PM, authors have emphasized that SMEs rely extensively on informal processes and the use of PM systems could make them too rigid, thus hindering their flexibility and innovative capabilities. Many frameworks and methods to efficiently implement PM in SMEs have been proposed, yet the take up of PM in SMEs remains low. We take notice that the PM literature has not been able to progress at the same rate as other research in SMEs. In this paper, we review research into performance measurement in SMEs, aiming to better understand how PM has been studied in this context and whether this has affected the success of proposed PM frameworks and implementation methods in these organisations. We identify existing themes, provide a discussion around the limitations of PM literature, and close with suggestions for future research.

Keywords: Performance Measurement, Formalisation, Small and Medium Sized Enterprises

Benchmarking sustainability practices in Indian Small and Medium Enterprises (SMEs): A data envelopment analysis based framework

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Small and Medium Enterprises(SMEs) face issues in supply chain sustainability. Sustainable supply chain Performance measurement is necessary to assess the efficiency of SMEs. Although there are studies on larger organizations, studies on Indian SMEs' sustainability of supply chain are scant. The purpose of this paper is to assess and improve the sustainability of Supply Chain of Indian SMEs. The proposed framework can be used for assessing and improving supply chain sustainability for group of SMEs and also individual SME. The proposed framework has been validated by Indian case studies. The managers of individual SMEs can get suggestions on their improvement measures.

Keywords: Small and Medium Enterprises, sustainable supply chain, Data Envelopment Analysis

The significance of the balance scorecard dimensions with respect to the supply chain strategy

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The balanced scorecard (BSC) is a prominent approach used to manage performance in supply chain. However, there is a lack of an agreed upon measures to manage the supply chain performance using the BSC. This might be attributed to the fact that the BSC is context specific and is affected by strategies. Accordingly, this research examines the relationship between supply chain strategies and the BSC dimensions. Survey research was conducted and four regression models were developed. The results indicated that the significance of the dimensions of the BSC differ with respect to the supply chain strategy.

Keywords: Supply chain strategy, Balanced scorecard

Investigating the relationship between regional logistics infrastructure and regional GDP

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Many indices (e.g., Logistics Performance Index) provide a framework for evaluating the relative standing of countries in terms of infrastructure quality and performance. However, universal investment in infrastructure is not an efficient way to influence economic growth. It is critical to identify and assess all indicators of infrastructure and focus on developing weak links. With this backdrop, the purpose of this research is to investigate the relationship between regional logistics infrastructure and the regional GDP. This will help to better understand the relative importance of diverse logistics indicators in influencing economic development, and provide insights for policy decision-making.

Keywords: Regional logistics, GDP, partial least squares-structural equation modeling

Load-based ConWIP: An assessment by simulation

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Constant Work-in-Process (ConWIP) is a simple production control system. There are arguably only two major search directions to improve the concept: (i) to alter the meaning of cards; and, (ii) to adopt alternative backlog sequencing rules. In this study, we follow the first search direction. We argue that changing the meaning of cards away from anonymous jobs to a workload contribution can address load balancing issues caused by processing time variability. Simulation results demonstrate the positive performance impact of limiting the total shop load instead of the number of jobs.

Keywords: ConWIP, Workload Control, Simulation

Performance improvement of cabin-based transport systems

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Cabin-based transport systems such as cable cars are of increasing importance for urban infrastructures. Such systems consist of one line, connecting several stations in tandem. During rush hours, customers are served with full capacity at the first station and consequently, cabins arrive almost fully loaded to the subsequent stations. Customers at these stations experience longer waiting times and a stressful situation. The overall objective of this study is to propose and evaluate alternative access control policies to improve the customer experience in terms of waiting times and a defined "fairness" measure. The model integrates realistic features such as non-stationary arrivals and finite operation time. Therefore, we adopt a finite horizon simulation approach and define the appropriate performance measures. In particular, a service level measure is used to compare the proposed access control policies. The obtained results allow us to determine the policy with the most substantial improvement in the performance of the system compared to the actual situation.

Keywords: cabin-based transport systems, non-stationary arrivals, finite horizon simulation, waiting times, performance measures.

Benchmarking of R&D performance using interactive data envelopment analysis

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This paper aims to assess the performance benchmarking approach to assess competitiveness of research organisations. The unit of analysis is R&D organizations. It uses interactive data envelopment analysis (IDEA). Data were collected from an Indian R&D organization. Superior R&D performance enhances an organization's competitiveness. It is observed the Indian R&D organization, needs to adopt approximately 56% of the best practices from Lockheed Martin and 30.18% of the best practices Kongsberg Gruppen, Thales Group, Furuno and Altas Elektronik respectively. Analysis demonstrates that IDEA utilises the embedded learning effect to form a dynamic and realistic performance profile based on the organization's capabilities.

Keywords: Performance benchmarking, data envelopment analysis, Interactive multiple goal programming

Application of revenue management in capacity planning of postal services: Conceptualizing and empirical simulation of capacity management

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The popularity of e-commerce has significantly increased the volume of parcels delivered through the postal services network. The shift toward digital communication (e.g., e-mail) and purchasing (e.g., online shopping) channels have turned capacity management into a serious challenge for postal organizations. Most of the developed solutions focus on process improvements and optimization through improving cost performance indicators but not the revenue. To address the postal service capacity management problem this study reconsiders traditional capacity management approaches and then develops, and empirically validates through simulation a conceptual revenue management model. The proposed model improves capacity allocation while maximizing postal organizations expected revenue.

Keywords: e-commerce parcel, postal services revenue management, capacity planning and control

Stakeholder Complexity and the impact on the perceptions of project success

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Traditionally, a project was considered successful if it achieved time, cost and quality objectives. More recently, success criterion has been extended to the perception of project stakeholders. This paper explores the impact of client complexity on project success, with the aim to develop greater understanding of project success from the perspective of varied stakeholder groups. Drawing on the findings from a three-stage investigation, the paper presents a model of project success explaining how different stakeholder groups, forming the client, measure project success; how their requirements are managed in organizations; and how varied stakeholder groups influence the success of a project.

Keywords: Client complexity, Project success, Stakeholders

The effect of complicated cases on the efficiency of musculoskeletal in-patient rehabilitation units in Hungarian healthcare systems

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Efficient operation is increasingly important in healthcare systems as a consequence of the enormous amount of resources spent on healthcare services. The evaluation of the efficiency in this sector is particularly difficult, because of the aggregated character of efficiency. Data envelopment analysis (DEA) can handle this problem. The purpose of this paper is to apply DEA in order to measure the efficiency of rehabilitation units curing musculoskeletal disorders (diseases) in the field of in-patient rehabilitation care in Hungary. The examination focuses on the musculoskeletal rehabilitation units, where patients are treated following stroke or other acquired brain injuries. The novelty of the presented method is the consideration of the change of patients' functional status when efficiency is evaluated with DEA.

Keywords: Data Envelopment Analysis, healthcare, Efficiency, Rehabilitation

Examining efficiency and performance trade-offs in the Australian airline industry

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We test the theory of efficiency and performance trade-offs for airline firms. Data from 2004-2014 were analyzed for evidence pertaining to performance based trade-offs and their subsequent effects on market success. To test our hypotheses on airline efficiency and performance trade-offs, we employed a data envelopment analysis methodology where two significant groups of airline players were identified: High Efficiency and Low Efficiency. Results support our hypotheses that trade-offs are present in airlines with high efficiency and consistent with the theory of performance frontiers. Additionally there are differences in efficiency depending on airline group and this subsequently affects their market success.

Keywords: Trade-offs, Data envelopment analysis (DEA), Efficiency, Airlines

Prediction of Collaborative Performance Management systems

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For long, it has been thought that managing through collaborative measures is a major prerequisite for a system with many actors. However, factors that affect Performance Measurement and Management (PMM) inclusive of many actors are still scarce and yet being asked for. The purpose of this paper is to predict factors that affect collaborative measures. Through a sample of 2100 flight movements, an Artificial Neural Network is developed that identifies features causing bottlenecks in airport operations with many actors. Findings show a selection procedure that is possible for optimal models and discard sub-optimal models regardless of the actor's interests.

Keywords: Prediction, Multi-actor collaboration, Neural Network



Purchasing, Procurement and Inventories

PPI

The relationship between QMS effectiveness and supplier relationship management

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The effect of ISO 9001 certification on improving firms' supplier relationship management (SRM) is not clear. The success or failure of reaching the promised benefits of ISO 9001 is attributed to the degree of effective implementation rather than the certification by itself. Accordingly, this research aims to investigate the relationship between ISO 9001 effective implementation and SRM. A survey based approach was adopted and six regression models were developed. The results indicated that the effective implementation of the ISO 9001 standard partially affect SRM dimensions within manufacturing context.

Keywords: Quality management, supplier relationship management, ISO 9001 effectiveness

New product development performance determinants: The role of buyer-supplier collaboration networks

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This work analyses the effects of supplier involvement in new product development (NPD) performance. The primary focus was to identify the key determinants of NPD performance in buyer-supplier relationships. We collect data from 85 dyads, from both relationship sides. Our results show that early supplier participation enhance its ability in contributing to NPD project performance. Additionally, we find that trust plays a key role in the buyer-supplier relationship, and that supplier's excess of embeddedness in a particular buyer diminishes its ability to contribute to collaborative new products development projects.

Keywords: New Product Development; Supply Chain Collaboration; Supplier Performance

Relational and structural embeddedness as buyer-supplier network governance mechanism: The role of market uncertainty

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Relational or structural embeddedness play an important role in mitigating partner opportunism in a buyer-supplier relationship. However, we do not fully understand when and how each type of embeddedness works better than the other in the context of information service outsourcing (ISO). This paper aims to fill this gap by comparing the two different dimensions of embeddedness in suppressing supplier opportunism in the presence of two uncertainties prevalent in ISO business environments: which are technological unpredictability and measurement difficulty. For this, we use the gamebased simulation approach to model ISO market as a network of service suppliers where a single supplier (a consortium coordinator) takes a role of forming a consortium with other suppliers, managing it to the end of a project.

Keywords: Opportunism; uncertainty; embeddedness; buyer-supplier relationship

The impact of asymmetric relationship characteristics on buyer-supplier performance

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Buyer's and supplier's might perceive relationship attributes in different ways. These differences in perception create another layer of complexity that is often ignored in buyer-supplier relationships. Our study adds to understanding how these asymmetries in buyer-supplier dyads impact performance outcomes. More specifically, this study assesses how trust asymmetries and contractual fairness asymmetries in buyer and supplier perception explain performance outcomes for buyers as well as suppliers. In addition, our study shows how boundary conditions, such as relationship length, affect the relationship between these asymmetries and relationship performance outcomes.

Keywords: Buyer-supplier relationships, Asymmetric relationship characteristics, Trust, Fairness

A heuristic solution for order picking problem in unit-load automated storage and retrieval systems

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In this study, we consider an end-of-aisle unit load automated storage and retrieval system (AS/RS), where one storage and retrieval machine is dedicated to all aisles. The machine is able to travel in cross warehouse aisle through a transfer car called “traverser”, so that it can enter any pick aisle. When retrieval requests are made for multiple items and the items are in multiple stock locations, there will be a huge number of feasible solutions with different retrieval times. The objective is to minimize the total time travelled by the machine to complete the retrieval process of customer orders.

Keywords: Automated storage and retrieval systems, Multi-aisle automated warehouse, Order picking

Understanding ambidexterity in product development: The case of supply network management

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This study explores how a firm, when engaged in new product development activities, may be understood to be successful in achieving an ambidextrous organisation and an ambidextrous supply network. A case study approach was adopted with the ambition to develop new theoretical insight. The case shows how the ability to balance exploration and exploitation internally and in the supply network is formed by a combination of internal organisational alignment concerns and the ability to integrate suppliers in product development. This expands our knowledge on how ambidexterity can be understood to work in new product development projects.

Keywords: Ambidexterity, product development, supply network management

Designing the supplier-based revenue sharing contract for the goods experiencing inventory-dependent demand: A mathematical framework

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This study addresses the mathematical design and formulation of a profit-sharing mechanism for supplier-based revenue sharing contract for the goods experiencing inventory-dependent demand to achieve an effective coordination between the supply chain (SC) partners. Both the non-coordinated and coordinated cases of supply chain network are discussed and compared based on their profit-sharing mechanisms, however, may be quite complex to be discussed. The insights from this study will construct a framework to formulate and develop an optimal ordering policy in anticipation to the overall cost reduction and profitability of the supply chain network as the objective functions.

Keywords: Demand rate function, Inventory-dependent demand, Supplier-based revenue sharing contract

Building social capital in client-PSF relationships: The role of service complexity and Procurement involvement

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The issue of social capital development in buyer-supplier relationships is increasingly of interest to supply chain management scholars. Most of our understanding, however, has been developed from the manufacturing context, where the Procurement function plays an active role. In contrast, Procurement's role in the procurement and management of services remains unexplored. This is interesting because in case of professional services, unlike goods procurement, the client is dependent on the service-provider for its specialised expertise. We address this gap by exploring the role of Procurement in developing social capital in client-PSF relationship through a multiple, embedded-case study design.

Keywords: Buyer-supplier relationships, Procurement involvement, Professional services

How much does strategic sourcing relate to flexibility?

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This paper investigates the relationship between strategic sourcing, internal as well as external flexibility and firm responsiveness. Data was collected from 266 Spanish manufacturing plants and analysed using partial least squares (PLS). The results showed that external flexibility fully mediates the link between strategic sourcing and responsiveness. The results for internal flexibility as a mediating variable were not significant. These results provide several theoretical and practical implications for further research, top management and strategy development.

Keywords: Flexibility, Strategic Sourcing, Responsiveness

Artificial intelligence in purchasing: How to facilitate mechanism design-based negotiations

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Recently, the application of mechanism design theory in negotiations gained enhanced attention. While such negotiations can result in high cost savings, mechanism design-based negotiations require staff with expert knowledge in economics. The research paper aims at answering the question whether artificial intelligence (AI) can facilitate the execution of mechanism design-based negotiations. A group of 20 persons, consisting of purchasing and AI experts from an European automotive OEM, discussed in a World Café the potentials of AI for the purchasing function. The results indicate that the application of AI can indeed facilitate the execution of mechanism design-based negotiations.

Keywords: Mechanism design theory, Negotiations, Artificial intelligence

Role of cross-application interdependence and competition in materials criticality identification and mitigation

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Competing demand is argued to be one of the key forces leading to natural resource scarcity. Although the materials criticality discourse acknowledges importance of competition, the interactions of companies across applications have been neglected in the analysis. This paper grounds on the factor-market rivalry theory to examine the presence of cross-application interdependence and competition among companies manufacturing different products. The findings indicate that companies across industrial sectors are interconnected through their resource decisions and actions that affect common resource market. Competitive conditions at resource (and product) market impose limitations for feasibility of materials criticality mitigation actions.

Keywords: critical materials, competition, interdependence

The effect of buyers' socialization efforts on the culture of their key supply chain partner and its impact on supply chain performance

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This paper investigates if inter-organizational socialization mechanisms by a buyer organization towards a strategic supplier can influence the culture within that supplier organization to ultimately improve the supplier's supply chain performance to the buyer. Organizational culture has been conceptualized as very different things: (1) as language (Srivastava et al, 2016; Barley et al, 1988); (2) as emotion (Barsade & O'Neill, 2014); (3) as ways of thinking (Harris, 1994); (4) as organizational practices (Cadden et al, 2013; Verbeke, 2000; Christensen & Gordon, 1999; Hofstede et al, 1990). These differing concepts are often amalgamated as with Tellis et al (2009) who define culture as shared attitudes and practices. However, Hofstede et al (1990) discovered that the most distinguishable elements of an organizational culture were located at the level of organizational practices rather than in core values which were relatively stable. This paper takes this position as a starting point. Therefore, this paper makes a significant contribution to the current supply chain literature which has focused on culture at the level of values.

Keywords: supply chain, culture, organizational practices, socialization, performance, inter-organizational supply chain relationships

Supplier relationship management and sustainability performance in the tobacco industry

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The tobacco industry is an under-researched industry in terms of sustainable operations and supply chain management practices. This case study has explored how tobacco manufacturing companies can improve their sustainability performance via supplier relationship management (SRM). It provides insight into the varying SRM methods used in the tobacco industry to ensure compliance and improve sustainability performance. However, the perception of sustainability as a requirement to meet the stringent industry regulations has been found to limit its scope and drive in pursuing sustainable SRM. Further research is required to explore the generalisability of our findings derived from a single case study.

Keywords: Sustainability, Supplier relationship management, Tobacco industry



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Retail Operations

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Impact of social power on the shopping experience of female adolescents: An international and exploratory study

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The paper investigates the influence of social power bases on female adolescents' purchase decisions, and analyses how peers and parents influence their shopping process in retail stores in France, Australia, Ireland and Hungary. An exploratory research was conducted through focus group discussions with 33 female high school students aged 16-18 years old. The findings show that female adolescents perceive shopping with peers mostly as a recreational, entertaining activity while shopping with parents is seen as a more utilitarian activity. Differences of the social power bases exercised by peers and parents can be explained by cultural differences.

Keywords: social power, retail stores, female adolescents

Customer taxonomy for weekend long retail events

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The purpose of the current paper is to understand the behaviour of consumers during a short term coupon based retail event: the Glamour Days (GD). In such cases, regular retail strategies - which are proved to be contributing greatly to retailer success - don't work, the gap which the present paper fills. Our study focuses on the analysis of this retail event that motivates women to exhibit both task-, and social shopping orientations with differing weights thus creating distinct shopper categories. Our results contribute valuable insights into retail shopping orientation and shopper taxonomic scheme literatures.

Keywords: shopper taxonomy; retail strategy; retail shopper segmentation; consumer behaviour

The Black Friday phenomenon in Hungary

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The central question of our study is to examine what features the Black Friday phenomenon has in Hungary, how it resembles to or differs from the international Black Friday trends. To answer this question we provide an overview of the main ideas on the topic discussed in international literature. Then with the help of answers of a questionnaire research from 2016 and one from 2017 we will highlight the most important similarities and differences. As we will see, in Hungary the buyers' intent to participate is similar to other countries, but retailer behaviour shows considerable differences compared to international examples.

Keywords: Black Friday, retail, customer behaviour

An analysis of shopping behavior at warehouse-club stores and its store-network-density implications

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Contrary to other retailers' pursuit of increasingly dense store networks and easier consumer access, warehouse club (WC) retailers have relied on sparse store networks to compete across numerous markets. Little research, however, has examined the shopping behaviors that have enabled WC retailers to succeed using this strategy. Based on a quasinatural experiment with consumers' subscriptions to Costco Wholesale as a treatment mechanism, we measure tradeoffs among members' shopping behaviors at Costco and contrast them against those at non-WC stores. This analysis shows that, relative to non-WC retailers, Costco's sales are significantly more inelastic relative to consumers' travel distances to stores.

Keywords: Retail operations, quasi-natural experiment, econometrics

The influence of resilience on causes of food waste in retail: a systematic literature review

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The purpose of the paper is to understand how the concept of resilience can help reduce the causes of food waste in the retail segment. To do so, a systematic literature review was conducted as a research method. According to the analysis, two theoretical contributions are: redundancy and financial strength are possible negative barriers to reducing the food waste; and most of the resilience elements that help minimize causes of waste are related to anticipation, considering that food has a short shelf life, and if it is not sold it loses the value completely.

Keywords: Resilience elements; Causes of food waste; Systematic Literature Review

Effectiveness of frequent inventory audits in retail stores

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We evaluate the impact of inventory audits on operational performance of retail stores. Analysis of sales, inventory and replenishment data is presented that highlights statistical relationships between product attributes and inventory errors. An error-based SKU classification scheme is incorporated in a simulation model of store operations to identify performance tradeoffs for different inventory audit and store replenishment settings. Results show that classifying store inventory and targeting inventory audits accordingly would yield better store performance than store-wide inventory audits.

Keywords: Inventory record inaccuracy, cycle counting, store performance.

Urban logistics collaboration: Insights from the UK online food retail sector

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The aim of this paper is to investigate efficiency gains from collaborative logistics in grocery last mile distribution. Using simulation and mathematical modelling we estimate the demand for home deliveries of groceries purchased online and investigate collaboration in the stem mile without and with four-hour time windows as well as the last mile distribution with one-hour time windows. Distance reduction owing to collaboration is 9% for the stem mile, 11% for the stem mile with four-hour time windows, and 23% for the last mile. We present detailed results on two scenarios: collaboration among two and three retailers.

Keywords: Logistics collaboration, grocery retail, UK

Reducing UK's carbon footprint in food supply chains

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UK food supply is reliant on the EU and the rest of the world, leading to huge CO₂ emissions embedded in food consumption due to food miles. This paper investigates the key factors contributing to CO₂ emissions in the UK food supply chain (FSC) precisely in fruits and vegetables supply using FAOSTAT and ONS data. Our empirical findings show that two key factors i.e. Transport and Sales and Distribution channel and related processes contribute to CO₂ emissions in UK FSC. This study provides managerial implications that policymakers and business managers can explore to mitigate CO₂ emissions in UK FSC.

Keywords: Food Supply Chain (FSC), Carbon Dioxide Emissions (CO₂e), Sales and Distribution channel and related processes

Analysing uncertainties and risks in dynamic retail operations. Interpretive Structural Modelling (ISM) approach

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Uncertainties and risks are increasingly affecting supply chain performance, hence are subjects to growing attention of academics and managers. However, much of the existing research focuses rather on stable environments such as manufacturing industry. This study, in contrast, explores more complex and dynamic settings of the retail operations of the cruise ship industry. By application of Interpretive Structural Modelling (ISM) approach it has been revealed that uncertainties and risks in such environment are much more autonomous, with fewer links between them, and limited number of dependencies. This creates new challenges, but also opportunities for risk management professionals.

Keywords: Retail Supply Chain, Uncertainties and Risks, Interpretive Structural Modelling (ISM)

Store performance improvement through layout optimization in the fashion retail industry

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Facility layout is an important topic in operations management though it is usually viewed from the manufacturing perspective. Service operation layouts are not presented very deeply. There are more available sources in the retailing literature, but store layout itself is usually not in the focus. In this paper we analyze the current layout of a store of a fashion retailer. We chose the store of a major fashion retailer firm in Hungary. The research is scheduled between March – June 2018. We carry out observations to map customer flow and footfalls around the store and analyze the data.

Keywords: Facility layout, Retail service layout, Fashion retail

DANP-PROMETHEE approach to evaluate distribution strategy of an e-tailer

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This study proposed a hybrid multi criteria decision making model to solve distribution strategy evaluation framework of an e-tailer, which combines Decision Making Trial and Evaluation Laboratory (DEMATEL), DEMATEL based Analytic Network Process and Preference Ranking Organization method for Enriched Evaluation (PROMETHEE) method. Data collected from the experts (e-tail manager, logistics manager, operations manager and distribution centre manager) using two questionnaires. DANP with PROMETHEE method calculation prioritizes distribution strategies as following: drop shipment, distribution centre shipment, store shipment, click and reserve and click and collect.

Keywords: Distribution strategy, DANP, PROMETHEE

Long tail in omnichannel retailing: A field study on showroom, sales distribution, and distance

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We examine the unintended consequences of traditional brick-and-mortar store as a showroom emerging in the retail industry. Because showrooms are light on inventory, are used to display products, and focus on in-store customer experience, they are likely to exhibit high sales dispersion. We analyze data from a leading Italian retailer operating an omnichannel business model via online, catalog, and showroom channel. We show that the showroom channel exhibits the highest sales dispersion among the three channels. Our paper provides the first empirical evidence of an increasingly important retail phenomenon (showroom) and discusses several implications on returns management and last-mile delivery.

Keywords: Long tail, showroom, econometrics



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Risk Management and Resilience

RMR

Resilient production system with adaptive lead time planning

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Almost all industries face external challenges like demand uncertainty, higher risk, and increasing competitive intensity. Several solutions are proposed in the literature for mitigating the effects of these externalities.

To prepare our case company for these challenges, various methods of creating responsive and order-winning manufacturing processes were analysed for the automotive industry. The current processes of the case company are not prepared and equipped to adapt to the rapidly changing situations. Our paper identifies the need for “quick response” in logistics processes.

Keywords: QRM, Quick Response Manufacturing, Lead time, Automotive Industry

Supply chain resilience in the automobile industry: The role of cross-functional integration

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The purpose of this study is to analyze how cross-functional integration processes could be implemented in order to support resilience management initiatives in an automobile supply chain. A multicase study was conducted with eighteen managers from different hierarchical levels, who work in six organizations in the same automobile supply chain. Findings show evidence that cross-functional integration impacts supply chain resilience in the studied chain, helping to solve or avoid disruptions or improving capabilities such as flexibility, visibility, agility and collaboration.

Keywords: Resilience, Cross-functional integration, Automobile Supply Chain.

Resilience elements to combat counterfeit medicines in supply chain

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The purpose of this study is to understand how resilience elements influence the combat of counterfeit medicines. After a literature review, an empirical research – case study - was performed. The case study shows two medicines supply chains work across its boundaries to combat counterfeits. It also enabled a deeper investigation of the resilience elements and counterfeit anti-measures applied. According to case studies, collaboration, trust, visibility, information sharing and sensing are the most relevant elements to combat medicine counterfeiting. The main contribution of this study is to discuss how these elements are relevant for increasing resilience to counterfeit medicines.

Keywords: supply chain, resilience elements and counterfeit medicines.

Developing supply chain resilience in the face of ambiguity

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Extant supply chain literature has neglected ambiguity such as unanticipated threats (i.e. natural disasters), focusing instead on risk. This paper situates and grounds ambiguous threats in a supply chain context and empirically examines its impact on corporate performance using two major natural disasters in a quasi-experiment involving the global automotive industry. Organizational learning and geographic diversification, as dynamic capability factors, are shown to play a positive moderating role in developing the resilience in the face of such ambiguous threats. Instead, demand-driven supply chain leadership and excellence hardly matters. These findings allow us to draw managerial implications about ambiguous events and the role of mitigating strategies to develop supply chain resilience.

Keywords: Ambiguous threats, Natural disasters, Dynamic Capability, Resilience.

Supplier-supplier relationships and supply chain disruption: First-tier supplier resilience in the tetradic context

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We consider disruption in the multi-tier context where the disruption derives from a source beyond the first-tier suppliers. To frame the study, we work with a tetrad involving the buyer, its two first-tier suppliers, and a second-tier supplier as the disruption source. The goal is to advance our knowledge on how a first-tier supplier's resilience against lower-tier disruptive events can be developed through horizontally connecting with the other first-tier supplier and how the buyer can benefit from its first-tier suppliers' resilience capability. Data from 33 triads (i.e., buyer-supplier-supplier) and a second-tier supplier common to both first-tier suppliers in Austria, Germany, and Switzerland was collected and analyzed.

Keywords: Risk management, disruption, cooperation

System dynamics approach for risk assessment in foodgrains supply chain

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The unexpected risk event can have a negative effect on the operations of foodgrains supply chain (FSC). In this regard, this paper aims to model the complex interactions and dynamic risk effects on the performance of a FSC. This paper suggests a novel modeling and simulation process to elaborate the dynamic risk impact on the FSC. This research helps the researchers to critically examine the effects of important risks on foodgrains supply chain system. Based on the outcome of the simulation, risk mitigation policies can be suggested. This can help in improving the effectiveness of the FSC system.

Keywords: Foodgrains supply chain, System dynamics, and Risk management

Plan-fact analysis in risk management

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Risk management is one of the most researched areas of project management, and also, its knowledge is more and more important in practice (e.g., appearance of PMI Risk Management Professional qualification). The research presented in the article focuses on integrating risk management and plan-fact analyses of controlling into a common risk management framework. Therefore, firstly, a new integrated risk management process that is easy to use in everyday practice is introduced, based on the results on previous conceptual research. Secondly, the hypothesis that it provides better results from some aspects is justified illustrated with a sample project.

Keywords: Project Risk Management, Risk Evaluation Framework

Linking theories of organisational behaviour to supply chain resilience: An exploratory framework

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In order to achieve supply chain resilience (SCRES), managers are required to make decisions to prepare for, adapt and respond to disruptions. Within the supply chain literature, behavioural attitudes of managers have not been largely explored. This paper uses the methodology of Problematisation to outline various factors which impact the decision making process for SCRES. This framework proposes that organisational culture, individual risk attitudes and firm resources all influence management decision making in terms of SCRES. Case studies from the literature are used to highlight how the factors within this framework impact on management approaches to SCRES.

Keywords: Organisational Behaviour, Supply Chain Resilience, Problematisation

Impact of organizational capabilities on supply chain resilience: An empirical investigation

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The purpose of this paper is to understand the impact of organizational capabilities on creating and improving supply chain resilience (SCRES). A theoretical model of organizational capabilities and related SCRES constructs was developed and a survey were created to test the relationships proposed in the model. The findings presented here are based on the pilot study. The findings show the magnitude and type of relationships between antecedents to SCRES capabilities, SCRES capabilities, and financial and resilience outcomes. This research contributes a theoretical model and comprehensive measurement scales for constructs employed in the model.

Keywords: Supply Chain Resilience, Organizational Capabilities

The influence of structural and dynamic complexity factors on supply chain resilience: A qualitative study

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This study aims to investigate the implications of supply chain (SC) complexity (based on static and dynamic complexity drivers) on constituents of resilience capabilities to deal with disruptions. A systematic qualitative analysis based on critical incident technique has been applied on secondary data collected on disruption incidents. Findings indicate that most of the complexity drivers have positive influence on several resilience constituents; however, negative effects were observed as well. Static SC complexity drivers seem to have both positive and negative effects on resilience, while dynamic complexity drivers seem to reinforce SC resilience.

Keywords: complexity, supply chain resilience, critical incident technique

The impact of big data on supply chain resilience: The moderating effect of supply chain complexity

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Big Data represents a new era in data exploration. Less is known on how big data impact on supply chain resilience. This paper explores the relationship between big data and supply chain resilience with considering the mediating role of supply chain visibility and the moderating role of supply chain complexity. Based on Data obtained from Chinese manufacturing firms, the analysis shows there is a direct relationship between big data and supply chain resilience. Big data also enhance supply chain resilience by improving visibility. However, contrary to the hypothesis supply chain complexity moderate the relationship but in a negative direction.

Keywords: Supply chain resilience, Big data, Supply chain visibility

The consequences of individual and organisational level social capital on supply risk management

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Most research on buyer-supplier relationships to date has approached social capital as an organisational level phenomenon. In contrast, we adopt a multi-level perspective to specify the effects of organisational and individual level social capital on supply risk management capability and firm resilience. A survey research design is adopted to collect data from manufacturing organisations in China. We suggest that organisational social capital deriving from buyer-supplier relationships has a direct positive effect on risk management capability and an indirect positive effect on firm resilience. These effects were also explored with the contingencies of individual social capital and environmental dynamism.

Keywords: Social Capital, Risk Management, Firm Resilience

Explaining the efficacy of supply chain risk management from a perspective of fit

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Research is called for to confirm the utility of a contingent approach to Supply Chain Risk Management (SCRM) analysis, including considerations on organizational structure. To fill these gaps this paper relies on two different approaches to fit analysis. Fit as a profile deviation is used to build two fit indicators: Risk Management Incoherence (RMI) and Risk Management Efficacy (RME). Fit as moderation is used to posit a negative relationship between RMI and RME, and to flag the negative moderating role that a Risk Manager (RM) plays in it. The findings obtained from a sample of 106 firms confirm the hypothesis.

Keywords: Supply Chain Risk Management, Fit Analysis.

Social relationships and supply chain risk information sharing

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Abstract The main objective of this study is to investigate how social relationships enhance supply chain risk information sharing. A multiple-case, holistic design was adopted. Interviews targeted managers in supply chain, procurement, operations and distribution. The study findings revealed that building closeness, motivation and establishing a sense of collective consequence enhances supply chain risk information sharing. This study contributes valuable empirical insights into how social relationships can enhance risk information sharing so that firms can prepare against supply chain disruption.

Keywords: risk information sharing, social relationships, supply chain risk

When is a 'wait-and-see' strategy an appropriate approach for managing supply chain risk? A contextual study of Brexit

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This paper presents the preliminary findings from a study of the UK's pharmaceutical and aerospace industries as they manage the supply chain risks associated with Britain's transition out of the EU, or Brexit. We gather empirical data from 20 semi-structured interviews; data that is objectively verified using primary company documentation, policy briefs and news databases. We find that in contexts where supply chain risk has a high probability and severity, that risk will be managed over five phases. First, the firm selects a 'wait-and-see' strategy where tangible resource commitments are put on hold until more information is forthcoming. In the second phase, the wait-and-see strategy evolves to include intangible resource commitments in task forces and the lobbying of government. Third, the firm makes proactive tangible resource commitments to reduce the risk's severity. When the risk event occurs (phase 4) and in its aftermath (phase 5), the firm reacts by adapting its tangible resource base to fit the outcomes of the risk event. Moreover, we argue the way in which multi-nationals and small and medium enterprises (SMEs) manage risk over these five stages will differ due to resource constraints such as limited personnel and financial capital.

Keywords: Supply Chain Risk Management, contingency theory, contingent uncertainty.

Exploring firm supply chain resilience capabilities in the food industry: A dynamic capabilities perspective

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Supply chain resilience (SCRES) and dynamic capabilities share similar attributes that explain how firms survive and thrive under uncertain business environment to maintain their competitiveness. This paper explores firm SCRES capabilities and their impact on operational performance grounded in dynamic capabilities theory (DCT). An exploratory case study consisting of five semi-structured interviews was conducted to empirically examine SCRES practices in the food supply chain (FSC) in Ireland. The findings indicate that through the ability to anticipate, adapt, respond, recover and learn, firms create, extend, and modify their operational capabilities to match the environment and hence, sustain their continuity and competitiveness.

Keywords: supply chain resilience, food supply chain, dynamic capabilities

Conceptualising data driven food supply chains: Creating integrity and resilience

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This research aims to explore the potential of data and data driven technologies in achieving greater control in the food supply chain and in creating a data rich relationship between customers and suppliers. A plethora of data (both open and closed) already exists across the various nodes in the supply chain. The paper presents a brief literature review along with an analysis of case studies and interview data from a small sample of supply chain entities within the food sector. The paper provides a conceptual framework to create integrity and resilience within the food supply chain.

Keywords: Food Supply chains, Supply chain integrity, Supply chain Resilience

Intangible resources in building supply chain resilience

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We propose a theoretical model of supply chain resilience that includes human capital resources, physical capital resources, and organizational capital resources. In this article we have proposed a model of supply chain resilience, building on prior research, that emphasizes “soft” intangible factors over the tangible factors. Intangible factors include: leadership and top management commitment, culture, lessons learned, empowerment, involvement, and commitment.

Keywords: Resilience, Supply Chain, Disaster Recovery

Managing supply chain disruptions; Does culture matter?

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The literature has traditionally assumed that when confronted with risks, managers make decisions using an economic utility model, to best serve the long-term objectives of the firm. However, managers who make such decisions are human beings and their decisions regarding risks are biased. Particularly, culture is shown to have significant effects on people’s evaluation of and responses to risk. Despite the important role of culture in today’s supply chain environment, the literature has been silent on this matter. To address the gap, our study adopts a behavioural perspective to examine cross-cultural differences in responses to a supply chain disruption risk.

Keywords: Behavioural Operations, Supply Chain Disruption Management, Culture

Understanding project failure using agency theory: The case of a high-speed rail mega-project in Saudi Arabia

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Many technical factors have been suggested as reasons for major infrastructure project failure, such as complexity, scale and a lack of precedent. We found that there appeared to be a gap concerning Agency Theory (AT) and its connection with large, temporary multi-organizational projects. Given that large, complex projects of the nature we were examining are, in large part, contractually mediated, we found this omission particularly surprising. In our research, we found a number of agency problems (APs) which we established to be either causes in their own right or the root cause of other causes of project failure. Our research has also revealed that AT warrants further exploration as a theoretical means of understanding project failure.

Keywords: Mega-projects; Project failure; Agency theory.

Business models for supply chain finance: The perspective of logistics service providers

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Literature about Supply Chain Finance presents the potential relevant role of Logistics Service Providers, but literature has not investigated how Logistics Service Providers contribute to the offering of Supply Chain Finance solutions. This paper aims at investigating the role of this actor and business models they might use. Resource Orchestration Theory is used as theoretical lens to develop the research framework and identify business models for Logistics Service Providers. Through the interviews to 29 Logistics Service Providers at the European level, the paper identified 4 potential business models, characterized in terms of resources used (financial, information, and material resources) as well as in terms of research competitive advantage.

Keywords: Supply Chain Finance; Logistics Service Providers; Business model

Towards designing a robust supply chain network; A multi objective optimization approach

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In this paper, we propose a proactive approach to design a robust supply chain network. The purpose of this model is supplier selection with the objective of minimizing the total cost and maximizing the supply chain visibility while considering the probability of suppliers' failure. The model is based on double sourcing, considering second-tier suppliers. We calculate the visibility of suppliers and sub-suppliers and select the suppliers with higher visibility. By using numerical examples, we show that selecting suppliers with higher visibility lowers the probability of both suppliers' failure.

Keywords: Supply chain risk, Supplier selection, Optimization approach



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Servitization and Service Innovation in the Digital Age

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Why an innovation may result in the 'dark side'? An exploratory study on business model innovation

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Existing literature has tended to focus on the positive benefits and outcomes of business model innovation. But, there is evidence to suggest that business model innovation can also have a dark side – with negative consequences and/or unintended outcomes. This paper starts with a systematic review of literature to document examples of the negative consequences and/or unintended outcomes and further populates the negative consequences and/or unintended outcomes through a Delphi study. Combining these two the paper presents a generic description of the dark side. Following the same steps, the paper identifies the driving factors/circumstances of the negative consequences and/or unintended outcomes

Keywords: Business model innovation, negative consequences, risk

Typology of uncertainties in the development process of Product-Service Systems

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This paper investigates uncertainty in the development of Product-Service Systems (PSS) – a complex combination of product and services. This research is important because practitioners struggle with managing the high uncertainties arising from the complexity of parallel product and service development in compound clusters of stakeholders. Yet, scholars have not analyzed these challenges extensively. Based on a combination of innovation management and servitization literature a conceptual framework is offered, detailing five uncertainty types relevant for PSS-development: environmental, technical, organizational, resource and relational uncertainty. This research contributes to the servitization literature by broadening the body of knowledge and deriving suitable management practices.

Keywords: Product-Service System, Development Process, Uncertainty Management

Bill of Services (BOS): An innovative design tool for service organizations

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Organizations must develop services that will meet customers' expectations, requirements, and demands, to be delivered when needed, to the complete satisfaction of the customer. Bill of Services (BOS) is a novel management tool designed to support service organizations in managing effectively their resources. This paper presents a methodology illustrated by real life case for configuration of the BOS in a manner similar to the Bill of Materials (BOM) in manufacturing. Based on the BOS, the necessary resource capacities can be planned and service costing can be calculated according to predefined service levels for each service characteristic.

Keywords: Service design, Resource capacity, Service costing

Servitization in manufacturing: A business model perspective

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The current research on Business Models (BMs) in servitization tends to focus on either identifying the key components of relevant BMs or examining the challenges of introducing such BMs. The creation of a BM is not a discrete event, but the result of a long-term continuous refinement effort. Redirecting the servitization research from concentrating on successful service-focused BMs to focusing on the process of developing such models is critical for servitization theory and practice. This paper, therefore, sets out to shed light on the development and refinement of the service-focused BMs in the manufacturing context.

Keywords: Servitization, Advanced Services, Business Model

Researching product-service systems for consumers: Insights from a systematic literature review

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Product-service systems (PSSs) have the potential to integrate a variety of sustainability strategies as producers are incentivised to design and market less material-intensive products and prolong use-cycles. While diffusion of PSSs in industrial cases is well reported, consumer acceptance remains a key barrier to more ambitious use- and result-oriented PSS outside of niche markets. This paper systematically reviews the literature on B2C PSSs to synthesise four factors impacting on consumer acceptance of PSSs and their hypothesised relationships. Further it is argued that considering the impact of all four factors would strengthen evaluative research on B2C cases.

Keywords: product-service systems, consumers, barriers for acceptance

The effect of manufacturers' service transition on employee job satisfaction

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Despite the increasing research interest in the implications of service transition strategies for manufacturers, scholars have paid only limited attention to how employees perceive of, and react to, such an important strategic redirection. This work examines the effect of service transition on the overall job satisfaction of employees, operationalised through their online reviews of their employer. The case of boundary spanning employees is specially examined, due to the nature of their role and their importance for effective and efficient provision of product-service offerings. Preliminary analysis reveals a weak (U-shaped) relationship between service transition and job satisfaction of boundary spanners exclusively.

Keywords: Servitization, job satisfaction, panel data

Challenges of servitization: A comparison study on manufacturers with different strategic focuses

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This research focuses on how the servitization challenges (in terms of organisational structure, business model, development process, customer management and risk management) manifest in the different types of servitized businesses. In this study, we focus on two types of servitized business models: integrated solution providers (IS providers) and product companies providing generic services (PS suppliers). A comparative case study was conducted with 13 UK-based companies and the result shows that the challenges are perceived on different levels in the two cases - the IS providers need to address more challenges than those seeking to supply products with generic services.

Keywords: Servitization, Integrated solution, Challenges

Contextualising servitization – the shaping of the organisational transformation

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This study has set out to build the evidence base underpinning the context of the SME servitization transformation. It explores how the organisational environment forces manufacturing SMEs to move towards service provision through depicting their perception of the business environment. The study contributes to the understanding of servitization by populating the selected conceptual model with insights drawn from collective experiences of 25 senior executives from 17 servitizing SMEs. The findings summarise how internal and external organisational environment factors shape servitization transformation and how they differ when considering the stages of transformation.

Keywords: Servitization, Organisational Environment, Transformation

Organizing for servitization: The constitutive role of communication

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Within operations management, servitization continues to receive increased attention among researchers from numerous perspectives, yet surprisingly a communication centered perspective is absent. In this paper, we begin to address this gap by applying the four flows model of communication. We do so by undertaking exploratory case research with a systems integrator pursuing a service strategy. Our findings explicate three different pairings of the flows. Each of these pairings contains the activity coordination flow and shows the inherent difficulties in constituting a complex organization delivering services.

Keywords: servitization, communication constitution of organizations (CCO), four flows model, coordination

Business model innovation in e-services: Investigating new service development in the digital age

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Business model innovation (BMI) in the e-service context is of contemporary interest. However, there still lacks empirical research investigating the implementation of the business model (BM) through an operations management (OM) lens. This ongoing process study is intended to contribute 1) by addressing the lack of OM research on BMIs, 2) by identifying and describing efficient alignment mechanisms for business strategy, BM, and operational process in e-services, and more generally 3) by exploring the development and deployment of BM during NSD processes. The initial findings will help in terms of the management and provision of the new service in a dynamic environment.

Keywords: Business Model Innovation, E-services, New Service Development

Exploring value-in-use of logistics services: The role of operant resources

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This paper explores how operant resources are turned into benefits by the final beneficiaries in maritime logistics networks, specifically maritime service triad composed of the shipper, carrier and logistics service provider (LSP). By doing so, the paper elaborates on the value-in-use concept at the interface between supply- and logistics networks from a transport service perspective. Results identify several operant resources that are configured by either one or all triad members for the facilitation of value-in-use. In addition, they call for extended research on the larger network and resource constellations within these networks for value co-creation and value-in-use.

Keywords: Maritime logistics network, Service dominant logic, Value-in-use

Achieving sustainability through service operations design: The role of systems thinking

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This paper investigates the impact of applying systems thinking approach to service operations design on the Triple Bottom Lines (TBL) of sustainability. A survey was conducted with 95 service organizations that have implemented the systems thinking approach into their service operations. Using the Structural Equation Modelling (SEM) technique, results confirmed that systems thinking implementation in service operations has significant impact on the environmental and social dimensions of sustainability ($p < 0.05$), but has no significant effect on the economic dimension. This is the first study empirically investigating the impact of systems thinking approach on the TBL of sustainability in service departments.

Keywords: Sustainability, Service Operations, Systems Thinking

Enablers and inhibitors for the adoption of supply chain finance by logistics service providers

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Financial service providers lead in offering Supply Chain Finance (SCF) but their inability to monitor all the material and information flows is a major challenge. Logistics Service Providers (LSPs) overcome this challenge by exploiting their control over the material flows. Despite several studies on the competency of LSPs to offer SCF, the research on the influencing factors is still underinvestigated. Therefore, the aim of this paper is to identify the factors (enablers and inhibitors) that lead LSPs to adopt SCF. The findings show that these factors are related to finances, risks, standards, organisation, operations, information, cross-border transactions, and regulations.

Keywords: Supply Chain Finance, logistics service providers, enablers and inhibitors

Servitization in the downstream supply chains

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This paper investigates the servitization in the flow of processes defined at the manufacturer-distributor (M-D) dyad. A model linking servitization, satisfaction, loyalty, competitive advantage and organizational performance is proposed. Data collected through a survey of 339 manufacturing organizations in India are used to assess the model. Partial-least-square structural equation modeling has been used for data analysis. Scales to measure internal and external servitization at the M-D dyad is presented. It is inferred that delivery of integrated solutions results in satisfaction of distributor's satisfaction and loyalty which in turn culminates into manufacturer's competitive advantage and organizational performance.

Keywords: Manufacturing, Servitization, Supply Chain

Strategic fit of service supply chains

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Building on the concept of strategic fit and Service-Dominant Logic (SDL), we develop a strategic fit of service supply chains and assess its impact on firm performance. SDL's prime focus on intangible skills and knowledge (operant) resources is rarely studied in the context of service supply chains. Fit in our framework is the match between firms' operant resources and service supply chain characteristics (viz. innovative, efficient or innovative-efficient) that lead to superior firm performance. We validate this framework using survey research and semantic analysis of publicly available data.

Keywords: Service-Dominant logic, Strategic fit, Operant resources

Conceptualising contracting for complex services: Buyer and front-line employee separation

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Theoretically embedded in resource dependency theory and service supply chains this conceptual study explores the complexity of contracting for services delivered by people (e.g. one to one consulting, types of health and social care). Two dimensions critical to correctly contracting for complex procurements that involve personal delivery are identified and help create a conceptual model.

Keywords: Service supply chains(SSC), contracting, front-line employee(FLE)

Impact of IS capabilities on service operations: The role of customer transactions

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This paper empirically investigates the relationships between IS capabilities, customer transactions, and operational performance of firms in service contexts. We hypothesise that while there may be an effect of IS on service operations performance, such effects are mediated through the processes developed for customer transactions. Using data from a survey of UK service establishments we find that customer transactions partially and fully mediate the effects of different dimensions of IS capabilities on cost and service quality. Service firms that embark on efforts to develop and leverage their IS capabilities should, at the same time, implement processes that encourage customer transactions.

Keywords: IS Capabilities, Customer Transactions, Cost, Service Quality

Managerial and employees' perceptions of improvisation in service settings: A multigroup analysis

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This study compares the perceptions of hotel managers and front-line employees concerning the effect of service delivery system design choices on employee behaviours and customer satisfaction. Service managers are faced with the difficult task of designing a system that delivers a consistent but personalized service experience. Services that develop a Service Improvisation Competence (Serv-IC) (Secchi et al., 2018b) can successfully navigate the perceived trade off between consistency and customization. However, this paper highlights a disconnect between the effect of service design choices as intended by managers and actual behaviour reported by employees as a result of the same design choices.

Keywords: Service Delivery Systems Design, Organizational Improvisation, Service Operations Strategy

Definition of requirements to pursue a Servitization Strategy in SME: The case of AMT firms in the Ornamental Stones cluster

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The introduction of advanced services in a servitization business model is under close scrutiny for a SME supplying advanced technologies. The proposed conceptual model is based on three cornerstones, i.e. strategy, organizational structure, ICT requirements. It was developed and checked by using data from semi-structured interviews, unstructured observations and documentation surveying. The outcomes significance support the model usefulness within the Ornamental Stones cluster. Virtual Breeding Environments/Virtual Organizations, Digital Business Platforms, Industry4.0 and open innovation appear to be required to leverage progress towards advanced servitization and so, promote competitive advantage and cluster survival. INOVSTONE4.0 illustrates a collaborative initiative within this domain.

Keywords: Collaborative Networks (CN), Industry 4.0 (I4.0), Servitization, Product-Service System (PSS)

Challenges when developing services supporting the customers: The case of energy services

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Energy services provided by energy suppliers have been identified as important in supporting sustainable development. However, the energy suppliers struggle in developing services that support the end-users energy efficiency, due to e.g. limited customer engagement and competition from actors with expertise in e.g. data analytics. The purpose of this paper is to investigate challenges faced by energy suppliers when developing services aimed at improving the end-users' energy efficiency. A single case-study identifies challenges for energy service development that relate to capabilities and organisation, respectively.

Keywords: Service development, End-users, Service supply chain

Customer-supplier interactions in the servitization context: An analysis using Process Chain Network (PCN) diagrams

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The purpose of this study is to examine the customer – supplier interaction during service delivery process and how the customer’s input contributes to successful service delivery by using multiple case study analysis. Given that the customer provides significant input into the service process, the Process Chain Network (PCN) diagrams were used as a service visualisation technique to facilitate the understanding of the interactive process between service provider and customer. The findings suggest that the level of service offered and the nature of the product and related services are significant in determining the level of customer-supplier interaction during the service delivery phases.

Keywords: Servitization, Interaction process, service delivery

Service business model innovation: The digital twin technology

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This study is set up to investigate the effect of Digital Twins on service business model innovation. In other words, what effect do digital twins bring to existing service business models? A two-phases exploratory research was set up to understand this research enquiry. Phase One focused on the overall understanding of how DT are set, implemented and used. 37 interviewees across three large industrial engineering firms, in addition to two DT platforms architects. Phase Two focused on the study of the context of the use and effect on the firms’ service business models on three pairs of cases. Our research shows four generic types of service business models founded on the DT platform and their trajectories.

Keywords: Servitization, Services, Business Models, Digital Twins

Managing service triad operations: Examining member-to-member exchanges in service design and service provision

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We study two operational processes related to innovation in supply networks: the design and provision of service in triads. In this paper we study member-to-member exchanges underlying the formation and functioning of service triads using four illustrative reconfigurations of service triads at Dutch universities. Utilizing insights from service operations management, we find that the design and provision of service triads entails a complex set of members' roles and responsibilities as well as service supply network capabilities. Our study contributes to the literature by examining the process of developing a service and servicing delivery system in buyer-provider-customer service arrangements.

Keywords: Service Networks, Service Innovation, Service Operations

IoT enabled advanced services: Exploring the IoT artefact as a socio-technical construct

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The present study draws on the Information Systems (IS) artefact theory (Lee, Thomas, & Baskerville, 2015) to systematically conceptualize the IoT and investigate its contribution to the manufacturer's advanced services. The study employs qualitative methods to analyse the advanced service offerings of eight multinational manufacturers and identifies the specific IS artefacts, their underlying information-, social- and technology-subsystems and their enabling roles in an advanced services context. The study and its findings contribute to the development of a socio-technical IoT perspective and an enhanced understanding of the role IoT has in an advanced services context.

Keywords: IoT, advanced services, servitization

Extreme e-waste generated from successful operations management? More focus on design for repair for extension of life

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This paper identifies how research in the field of Operations Management (OM) has been extremely successful in reducing costs for the manufacturing of electrical and electronic equipment by focusing on design for assembly and manufacturing. The downside is the generation of extreme amounts of e-waste. Based on a literature survey, 2251 kg of e-waste and on case study, this research identifies the need to extend product lifetimes to drive down e-waste. The study concludes that more research is needed on designs for disassembly, repair, refurbishment, and remanufacturing to meet future requirements for reduction of e-waste, and greater support from legislation.

Keywords: extreme e-waste, design for repair, modularization

Big data analytics and Product-Service System – advance and accelerate implementation

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Digital transformation with its emerging rich data pools as well as developments like cyber-physical systems and the Internet of Things, are presenting opportunities for business model and product-service system (PSS) innovations from Big Data Analytics (BDA). For this qualitative research, semi-structured interviews with 16 top-level managers were conducted, testing existing theoretical linkages, while gaining additional insight. This research we demonstrate that not only PSS innovation is driven by BDA, but that Big Data itself can be the product of the new models, this way creating a feedback loop for continuous innovation in the company.

Keywords: Big Data Analytics, Product-Service System, Supply Chain Management

The roles of internet of things in enabling servitized business model: A systematic literature review

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Internet of things has increasingly gained attention regarding its potential in enabling servitized business model. However, the academic research that explains this concept is still underexplored. Thus, this paper aims to provide a consolidation and comprehensive analysis of the relevant literature, through conducting a systematic review. From analysing 53 articles, four types of IoT-enabled servitized business model: add-on, sharing, usage-based and solution-oriented are identified. The framework was established to present the relationships of the roles of IoT, firm's benefit and inhibiting factors in enabling each type of business model. This framework provides a useful and inclusive overview of the topic.

Keywords: internet of things, servitization, literature review,

An empirical investigation of the development process and capabilities of servitization: From OEM/ODM to OBM

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Due to the shrinking profit of OEM / ODM, the manufacturers were definitely seeking new ways to transform themselves. This paper research on three OBM companies transformed from OEM / ODM. When transforming into OBM in the process of servitization, there are four stages which represent different roles of the end customers: imitation, exploration, inspiration, and aspiration; there are four main capabilities needed to develop: customization capability, new value proposition, organization redesign, and new trading norms. This research mainly wants to give manufacturers who have motivations to develop into the OBM companies clear paths.

Keywords: OEM/ODM, OBM, servitization

Servitization and deservitization effects in three southern European countries

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Looking through Knowledge Based View (KBV) posed by Valtakoski (2017) we analyse the deservitization effect mentioned by current literature in three Southern European countries. KBV postulates that if a company does not possess necessary knowledge it will outsource this knowledge from another company. However, due to high competition and leaking of knowledge, manufacturers of complex product will tend to servitize with their own resources thus not deservitize or outsource service provision. The analysis is performed through two step OLS regression. Results confirm hypotheses and the model is significant.

Keywords: Servitization, Deservitization, Manufacturing survey

The role of trust in the alignment between system and operational effectiveness: The case of e-government in Colombia

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E-government systems are becoming an essential strategy in countries' development and governments are integrating their operations with local organizations (G2B) online. The findings suggest that trust has impact on operational effectiveness, quality of the system, quality of information and quality of the service. Therefore, trust is built through the effectiveness of the operations that e-government systems bring to organizations. Quality of information showed the most significant impact on operational effectiveness. In order to build up efficient operations of the users of e-government applications, the government needs to improve the quality of the systems and quality of the service.

Keywords: e-government system, trust and user satisfaction, operational effectiveness

Sharing economy and servitization for public sector

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Although the sharing economy has been part of human society for a long time, it has taken a new form and has grown considerably during the last two decades with transformation in technology and increase in per-capita income. The main aim of sharing economy is to use prudently the assets and services and these practice can be converted in public services to optimize the use of goods and service.

The purpose of this article is to evaluate the current status of sharing economy, and how the innovations of the sharing economy is used in the public sector.

Keywords: shared economy, ownership, the prospect in government sphere.

Servitization business value: An ego-network perspective

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Servitization is increasingly being adopted by manufacturers leading to new sources of value. Current research recognises the relevance of partnerships for the capture of value, but ignores the transformation stages. Manufacturers at different transformation stages have different servitization goals, hindering the applicability of the current theoretical frameworks. The present research seeks to directly address this gap, analysing the value capture process within a manufacturer's ego-network at the initial transformation stage. Findings provide academics with a reference point regarding a specific transformation stage and help practitioners to better manage their position in the ego-network to efficiently capture the value of servitization.

Keywords: Servitization, Value, Ego-network

Cross-border e-commerce firms as supply chain integrator: A service dominant logic perspective

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Cross-border e-commerce is becoming more and more popular all over the world. With the development of technology, competition has gradually shifted from commodity to the supply chain service capacity of e-commerce. This paper adopted a multiple case study method and selected four typical cross-border e-commerce enterprises (OSELL, BizArk, LINCA and Zongteng). Data were collected from 20 interviews, observations and field visits. Adopting Service Dominant Logic in supply chains, three sets of propositions provided answer to how do cross-border e-commerce firms provide services to e-tailors and other platform users from the view of three flows, i.e. information, logistics and capital flow.

Keywords: Service supply chain, Cross-border e-commerce, Service dominant logic

Hunters and farmers: Unpacking the silo syndrome of product-service business units

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Industrial firms are increasingly servitizing their offerings by bundling products and services into solutions. This paper argues that a critical factor in the success of servitization is to structurally separate service and product business units. Yet, an integration that is close fitting and cross functional is also required since two businesses share resources and knowledge to a marked degree. This study explores the concept of functional 'silos' using pragmatic knowledge boundaries since they constrain the flow of knowledge between business units and contribute to the alienation of the units. Anchored in the empirical study of 10 subsidiaries of a major capital equipment provider, the findings of this study suggest that the product-service business unit silos are driven by the following alienation devices: the pricing process, the sales process, the installed-base factors, and the measurement process. While structural separation enables the service business to grow, it creates, at the same time, pragmatic knowledge boundaries around business units directly constrain the flow of knowledge and cross-functional integration. On the other hand, this study identifies two important collaboration devices in the context of servitization: a unified market approach and long-term customer orientation. First of all, senior leaders need to formulate a business unit strategy that is aligned with the corporate strategy and to put in place overarching performance metrics that will dictate priorities and resolve any situations where businesses are seen to act in opportunistic ways. Second, when senior leaders identify the long-term benefit of the customer as a key driver for the firm and transparently present the product and service options to the customer, knowledge flows between business units are enhanced.

Keywords: servitization, business unit silos, pragmatic knowledge boundaries

Telling tales of transformation: Towards a prescriptive framework for storytelling to engage stakeholders with advanced services

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This paper presents a framework for the use of storytelling to accelerate the engagement of various stakeholders with organizational transformation. Though storytelling is associated with organizational change, and research into organizational storytelling is extensive, it has yet to be adapted into a method for the practicing storyteller. To fill this knowledge gap, a review of the literature is conducted, which informs a framework for organizational storytelling adopting the practitioner's lens. This has been used in workshops with senior executives from large, small and medium-sized enterprises, who have expressed the need for stories to engage stakeholders with advanced services.

Keywords: Storytelling, Organizational Change, Servitization

How to design revenue models for smart connected products

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Manufacturing industry currently undergoes a transformation where digitalization through smart connected products enable new innovative service solutions. A key challenge for companies is capturing profits by designing appropriate revenue models for such service solutions. Through a case study of 11 companies, this study enhances knowledge about how to design revenue models for smart connected product-services. The paper provides novel insights about how to design new revenue models in a structured way by outlining a framework of key steps and activities. By doing so it bridges the emerging digitalization literature with literature on servitization, advanced services and service solutions.

Keywords: Revenue models, Smart connected products, Servitization

Ecosystems innovation for smart connected services

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Product-service systems (PSS) require ecosystem thinking to understand who and what is needed to keep the equipment working so that it supports the customer's or end-user's business (Kowalkowski, 2011). Often a product is designed and manufactured by one firm, packaged by another, shipped by a third, installed by another and then operated and maintained by others. Using an ecosystem approach, the actors and roles become more clearly visible, which, compared to the conventional value chain, makes it easier to manage and redesign. In the context of the Internet of Things (IoT) the complex and important aspects that need to be characterized and understood are: customer value co-creation, risk allocation, actor dominance within the ecosystem, and the knowledge of who provides what (Adner, 2010). With the IoT, and digitalization in general, data are becoming the new enablers, allowing more effective decision-making to take place (Porter & Heppelmann, 2014; Iansity & Lakhani, 2014). However, the data are often spread out among different actors in the ecosystem, and it is important to close information loops in order to analyze data and use the information effectively. In the past, the flow was considered to be in one direction, but this is an oversimplification of the reality. It makes it more necessary for business leaders to understand and navigate their way through the ecosystem, in order to deliver and capture customer value in a complex PSS in an efficient and effective way. This study aimed to develop and test an ecosystem innovation framework to support the development of new smart connected services for PSS. This work has been built upon the foundations of Service Design, in particular, the work of Peltoniemi & Vuori (2004). Starting from the existing product-service systems approach, through ecosystem mapping it became increasingly clear that the mapping process helps to visualizing the interrelationships and provides a new perspective. Features or characteristics of real-world processes become experiences that create value for each actor through their activity with others and in turn create options for common and smart services. In addition, this paper adds to Lusch & Nambisan's (2015) discussion about the A2A (actor-to-actor) network and the uncertainty factors within the network. Ecosystem mapping can offer an approach to support the development of guidelines in service innovation and aligns with the perspective of S-D logic on how to reconceptualize services, resources and value creation.

Keywords: ecosystem; customer value; digitalization; servitization; service design.



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STRATEGY

Formal strategy formulation and new technology anticipation: The role of internal communication

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This study analyzes the antecedents of ANT, emphasizing the role of strategy formulation (SF) as an enabler to identify new technological demands significant for production process in the future as well as its adoption. Additionally, it highlights the importance of communication to convey strategy and anticipate technological needs, since it facilitates the exchange of knowledge and the transmission of goals and strategy. Ordinary least squares multiple regressions were performed using data from the international High-Performance Manufacturing project, including European plants in the three sectors. The findings show that SF positively influences ANT, and intra-functional and shop-floor communication moderate this relationship.

Keywords: Internal communication, technologies anticipation, strategic process.

Outsourcing from a (theoretical) evolutionary perspective

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Outsourcing has been long considered from a number of theoretical perspectives, such as transaction cost economics and the resource-based view, but studies have not been informed by a (theoretical) evolutionary biological perspective. However, canonical theories have insufficiently accounted for its long-term effects, the risks associated with the decision and the phenomenon of back-sourcing. To this purpose, the paper presents a complementary view that counteracts some of the controversies raised in literature. This perspective leads to an outline of an evolutionary framework that could inform further research into the effectiveness of decision making on outsourcing.

Keywords: Evolutionary models, mutations, outsourcing.

Contextualising ambidexterity in small and mediumsized manufacturing enterprises

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The ability to balance exploration and exploitation is essential for small and mediumsized manufacturing enterprises (SMME) sustained growth and survival. The purpose of this research is to explore how SMME managers understand exploration and exploitation and manage organisational ambidexterity. The collected data was gathered during a workshop with in total eleven participants of the management teams from five SMMEs. The findings provide with the managers understanding of the topics and further indicates that unplanned tasks act as disturbances for planned tasks, and that daily operations often are higher prioritised than innovation work, affecting the employee's ability to work ambidextrous.

Keywords: Innovation, Organisational ambidexterity, SMME

The reconciliation process of market requirements and operations resources – an empirical view

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Firms are confronted with the challenge of designing strategy processes, which guide decision-making in a way that leads to high and sustainable performance. The purpose of this paper is to address this challenge, by delivering empirical insights on Slack & Lewis' concept of reconciliation in Operations Strategy from a process point-of-view. We argue that while this concept roots in the alignment literature of Operations Strategy it has not yet been subject to detailed and empirical research. We discuss the development of a survey that examines if and how reconciliation is carried out in companies and how this affects operations performance.

Keywords: Operations Strategy, Empirical Research in Operations Management

Sharing economy archetypes as service triads: Towards an integrated framework

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This study offers a multifaceted review of the literature on the sharing economy from a service-triad perspective and presents an integrated conceptual framework that characterizes service-triad archetypes of the access-based economy to guide future research. In building on social capital and balance theories, the conceptual framework presented proposes two types of strategies for access economy platforms (commitment- and control-based platform strategies) that reveal five service-triad structures/archetypes that lead to different outcomes (i.e., service quality and social capital). This may be the first study to explore the access-based economy from a service-triad perspective, thereby revealing a new avenue of sharing-economy research.

Keywords: Service triads; Structural hole; Access economy.

Interfaces between mission, purpose and orientation to serve in service companies

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One of the main tools for communicating organizational identity is the mission statement. Recently, the use of organizational purpose as a motivator of people's behavior has emerged in the business environment. This is of greater importance in service companies. The orientation to serve has oriented the organizational strategy, making a service-oriented company, willing to serve the customer, in which people adopt servant behavior. This research aimed to identify interfaces between the definitions of mission, purpose and servant behavior in service companies. For this study, they were considered reputed service companies in Brazil.

Keywords: Mission, Organizational Purpose, Servant Behavior.

Patent valuation and knowledge sourcing

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The paper links the patent valuation literature with the knowledge sourcing literature. The paper suggests “the shortness of claims method” for identifying new knowledge suppliers. The method is developed by comparing some of the most valuable patents in history with less valuable patents. The method can identify valuable patents earlier than existing patent analysis methods can and hence identify interesting knowledge suppliers. Unlike existing methods, the present method thereby enables identification of the most promising knowledge suppliers before the knowledge of these potential knowledge suppliers has become outdated and redundant.

Keywords: Patent value, Knowledge Sourcing, Patent Evaluation

The rise of logistics startups and their impact on the logistics industry

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Startups have become an important factor in the logistics market. Despite their enormous innovation potential, however, their role as partners or competitors for established logistics service providers (LSPs) has not been explored so far. In order to investigate this new phenomenon, this inductive study applies two different qualitative methods. First, we conduct a qualitative content analysis of 75 logistics startups' websites resulting in four major types of logistics startups. We use this classification for our second study, which collects case study data from 19 companies (logistics startups and LSPs) and investigates how logistics startups affect established LSPs.

Keywords: digitization, logistics startups, LSPs

Circular economy: Barriers to change from linear to circular business model

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This paper aims to identify barriers to changing sustainable industries from linear to circular business (circular economy - CE) models, through a literature review followed by two case studies. Several benefits in adopting circular business models can be cited, although, in practice, numerous barriers to their implementation exist, such as problems in estimating possible benefits, existing costs, knowledge requirements, policies, regulations, consumer demands for green products and lack of dissemination of the theme throughout businesses. It is important to recognize these barriers so that organizations can cope with the academy.

Keywords: Circular Economy, Sustainability, Barriers

Operations strategies in Brazilian e-waste recycling plants

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The aim of this paper is to identify and analyze the operations strategies of two Brazilian companies that recycle waste electrical and electronic equipment. We also investigate whether environmental concerns are considered as competitive priorities for operations and as practices implemented in the companies' structural and infrastructural decision areas. The results revealed that "environment" is a key competitive priority. The two companies studied have been implementing environmental programs and investing in cleaner production practices and life cycle assessment.

Keywords: Operations strategy, E-waste, Recycling plants

Is mass customisation suitable for every industry?

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The aim of this research is to examine the development of mass customisation across different industry sectors. Using a contingency lens, this study develops and tests an integrated model of mass customisation, industry sector and country competitiveness. The hypotheses are empirically tested using data collected from 5th round of Global Manufacturing Research Group and secondary data obtained from the World Economic Forum. Our results indicate that mass customisation is suitable for every industry. In addition, we found that mass customisation development is country-contingent. However, the relationship between mass customisation development and a country's global competitiveness is counterintuitive.

Keywords: Mass Customisation, Industry Sector, Global Competitiveness

On the origins and the applications of the Steady-State model

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Some publications have referred to the so-called steady-state model, a 'cybernetic model' that should not be confused with its namesake in mathematical systems; it is rooted in preceding publications about general systems theories, something that is explored in this paper. To this purpose, first the origins of steady-state and homeostasis as biological concepts are briefly addressed. Afterwards, the concepts of boundary zones from socio-economic theory, Shannon's information theory, control mechanisms and engineering principles are added as a multi-disciplinary amalgamation to primary processes. The resulting cybernetic steady-state model offers a generic transdisciplinary framework for depicting regulatory and control processes within organisational and engineering systems as well as interaction between agents in networks. In the latter sense, it provides an explanatory concept for self-criticality in complex adaptive systems. Hence, it does not only have a rich heritage but also a wide-ranging potential for research.

Keywords: Business processes modelling; general systems theory; homeostasis



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Circular economy in practice: Case study in a company from the electronics sector

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The Circular Economy (CE) is an economic model that emerges to face the challenge of resource scarcity and waste disposal in a win-win approach. The purpose of this research was to investigate the motivations and main aspects of a CE process in the electronics sector, to identify which factors can simplify the future creation or transformation of CE oriented business models. The single case study was conducted in a company that performs CE activities in Brazil since 2012. The model studied was raised as a partnership, in the context of the establishment of the National Solid Waste Policy.

Keywords: circular economy, business models, sustainability.

Is there value in the sustainable supply chain? A systematic literature review

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Aiming to identify the aspects that characterizes the value generated in the sustainable chain of supplies through a systematic review, it was identified 31 articles that discuss the chain value from the perspective of the sustainable chain of supplies. The analysis was divided into two dimensions, how the concept of value are used and value generation practices in the chain. The perspective of the predominant value chain in the analyzed literature is the relational value, through integration and cooperation. The main identified practices were the lifecycle analysis, governance and cooperation, planning and application of capabilities in the chain.

Keywords Value chain; sustainable supply chain; relational value; product life cycle.

The achievement of new Business Objectives Models for supply chain sustainability

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Sustainability is today a central topic both in academia and in the industrial world, and many scientific issues are still open and for which new insights are required, in particular by adopting a supply chain perspective. To better identify the value of sustainability practices along the supply chain, this study analyzes four successful case studies of companies that have been able to create new Business Objective Models (BOMs) wisely integrating the concept of sustainability with their supply chain partners. Results show that these BOMs are supported by a strong alignment towards sustainability within the of the whole supply chain.

Keywords: Sustainability, Supply Chain, Business Model

How can SMEs capitalise on supply chains to improve financial performance? A systematic review of the literature

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This paper aims to establish causal relationships between performance drivers in the supply chain and the financial performance of SMEs. Based on 78 articles included in the systematic literature review, a conceptual model is established, which demonstrates that six performance drivers in the supply chain contribute to the financial performance of SMEs directly or indirectly: purchasing, production, transport, inventory management, internal integration, and external integration. Additionally, two performance drivers, outsourcing and sustainable supply chain management, are found ineffective for SMEs in terms of financial performance because of the associated hidden costs.

Keywords: Supply chain management, Performance measurement, SMEs

Perspectives of operational additive manufacturing – Case studies from the Czech Aerospace industry

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This paper presents the output of the quantitative and qualitative survey on the additive manufacturing adoption in the Czech Republic, which was conducted at the end of 2016 and in 2017. The discussion concerns the aircraft industry. The results of a quantitative survey provide a general understanding of the current scope of additive manufacturing implementation. The in-depth semi-structured interviews are conducted with two selected aircraft first-tier suppliers. The interviews provide insight into the road map used for the adoption of additive manufacturing. It depicts the main issues that each company must resolve during the transition from traditional to additive manufacturing.

Keywords: Additive manufacturing, Efficiency, Obstacles, Aerospace, Czech Republic

Strategic factors driving manufacturing performance of Additive Manufacturing: An empirical analysis

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Additive Manufacturing (AM), as a leading technology contributing to the new paradigm shift Industry 4.0, is changing the way we produce and even consume. This emerging technology offers many advantages for companies to survive in the today's innovative and highly competitive business environment. Several researchers demonstrated the values of AM for supply chain, new product development, sustainability, and business opportunities. Apart from those values, the particular influence of AM on manufacturing performance needs to be carefully realized. This paper analyses the key factors driving AM manufacturing performance, and recognize the best performance areas of AM.

Keywords: Additive Manufacturing, Manufacturing performance, Theory building, Survey

How will additive manufacturing impact materials inventory? – A system dynamics simulation

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Additive Manufacturing (AM) is a manufacturing technique which allows the direct fabrication of three-dimensional design models using an additive approach by adding layer after layer. This does not only open new design possibilities but also constitutes a chance to reduce materials usage. The aim of this research paper is to simulate the potential reduction of materials inventories in the manufacturing industry and to point out possible implications for supply chains. For this purpose, a system dynamics model was created and applied on actual sales data of industrial AM units.

Keywords: Additive Manufacturing, Materials Inventory, System Dynamics

Additive manufacturing technology driving supply chain innovations in small and medium-sized firms

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Additive manufacturing (AM, 3Dprinting) means novel manufacturing technologies and the use of digital models to build up an object additively, making it fundamentally different from subtractive manufacturing. This novel manufacturing approach does not concern only technologies, but it also has implications on the firms' supply chains. Supply chain innovations related to AM deserve further research, particularly among small and medium-sized firms (SMEs). This exploratory interview-based study reveals practical changes in supply chains and requirements for AM-driven supply chain innovations in SMEs. To be leveraged fully, AM needs complementary supply chain innovations in the business processes, technology and structure.

Keywords: Additive manufacturing technology, supply chain innovation, SME

The influence of relationships on loss and food waste in agrifood chains

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This work aims to investigate the influence of interorganisational governance on losses and waste reduction in agrifood chains. The study consider dyadic relationships through Transaction Costs Economics (TCE) and Relational View (RV) theories, with by interviewing multiple stakeholders in regard food chain in Sao Paulo. First, a conventional perspective from chain members that integrate the process flow, and another one focusing on stakeholders that have the role of support in the prevention. The empirical evidence shows the need to create institutional and relational mechanisms and highlight the role of external stakeholders that stimulate chain integration to reduce food waste.

Keywords: Food loss and waste; Relationships; Multistakeholders approach.

Information sharing in multi-tier supply chains: A Delphi study on contingencies

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We conduct a Delphi study with 29 supply chain experts, to explore contingencies for implementing information sharing across multiple supply chain tiers. Twelve contextual factors are identified, and are categorised as either product and market aspects or supply chain aspects. The Delphi study identified importance and feasibility as two key perspectives, and a quantitative assessment round revealed that these exhibit a negative relationship for most contingency factors, such that information sharing is difficult to achieve in important contexts, but is unimportant in feasible contexts. Herein lies a paradox, which is discussed.

Keywords: Feasibility, Importance, Paradox.

The impact of supply chain relationship on food safety management in global food supply chains

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The paper explores the interrelationships among firms' food safety management system (FSMS) performance with (1) criteria of supplier selection, (2) quality of supply relationships, (3) level of collaboration, (4) level of external supports. Then, hierarchical cluster analysis is performed to classify firms based on the scores of each group of FSMS activities and compare these aspects of supply relationship between groups of firms that perform "best practice" FSMS and the rest. The results suggest that the higher scores of these aspects could lead to the higher scores of FSMS activities of food firms and highlight the differences between firms.

Keywords: food safety management, supply chain relationship

No fairness, no trust: A qualitative study of supply chain relationships from the social exchange and equity theory perspective

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Companies that are perceived to be fair are usually far more successful than those that aren't. In an age where economic conditions are challenging, it has never been more important to keep customers happy. It's generally perceived that strong buyer-supplier relationships depend on high levels of mutual trust and respect, which in turn can boost business and help a company to generate profits. This paper examines the repercussions of fairness in supply chain relationships through in-depth executive interviews. Findings show that fairness is a double edged sword with positive and negative effects on relationship development process between supply chain partners.

Keywords: Fairness, Trust, Social exchange theory, Equity theory

Mapping requirements in a sustainable packaging decision for actors of the supply chain

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Decision-making is a crucial part to sustainable packaging area which needs stakeholders to select the best solution amongst alternatives. Different needs and constraints embedded from different actors of supply chain create a trade-off in packaging decision. This research, therefore, is seeking to understand the nature of that trade-off, and mapping all requirements from actors of supply chain on the sustainable packaging decision based on a holistic view in order to select an optimal trade-off which can reduce the total cost, mitigate total impact on the environment and social dimension, and identify the opportunities for a win-win solution of a whole supply chain further.

Keywords: Sustainable packaging, Decision making, Supply chain

Value distribution in Food Supply Chain (FSC): Cases of Thai rice chains

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This research aims to understand how value is being distributed in food supply chains to understand FSC resilience, within the context of food security. Farmers are leaving agricultural sector because farming has become increasingly unsustainable commercially – low profitability and high risk (Agarwal and Agrawal, 2017). To increase profit/value for farmers in the chain, the study of the distributed value within FSCs is required. However, to date, the concepts of applying costs/profits to Value Chain Analysis in food sector are yet to be explored (Medeiros et al., 2017). Hence, this research aims to develop a more comprehensive costing tool for food sector and consequently using the tool to explore how the value is being distributed across the chain.

Keyword: Food supply chain, Value distribution, Value chain

Role of social media analytics in understanding the impact of institutional pressures on sustainable practices: A case study of Indian automotive industry

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The study uses the data from the microblogging site 'Twitter' to understand the impact of institutional pressures on the sustainable practices adopted by companies in Indian automotive industry. A significant change in the environmental policy to upgrade the emission standards of vehicles is analysed to understand how different stakeholders responded to this change. Findings of this study highlighted that most companies adopted the strategy to discount noncompliant vehicles and increased the prices of the compliant ones. The paper argues that the institutional pressures to implement sustainable practices may not always have a positive impact in short-term.

Keywords: Social media analytics, Sustainable practices, Automotive industry.

Understanding your supply chain: Dynamic value stream mapping for business improvement

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The "Bullwhip effect" is a well-studied phenomenon in SCM. However, despite the large amount of work in the field, mainly simulation based, the number of empirical studies exploring the causes of bullwhip behaviour and their impact is limited. Our paper presents a study of a dairy manufacturer with a distinctive set of characteristics: short shelf life, weekly heartbeat-shaped demand, a multi-product wheel with limited production capacity, short lead-time requirements. By using dynamic Value Stream Mapping, we demonstrated the extent to which poor SC dynamic behaviour can create and amplify the bullwhip effect. We then explore the causes of this behaviour and identify opportunities for improvement.

Keywords: Value stream mapping, System dynamics, Bullwhip effect

Supply network design for Industry 4.0: Lessons learned from German manufacturing industries

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Industry 4.0 presupposes full flexibility in supply network design to fulfil vastly individualized customer requests. While Industry 4.0 can open new business models, the supply network design is challenging: the role of the focal firm as principal coordinator becomes increasingly decentralized, interface standards are missing, and big data analysis for the necessary real-time coordination bears algorithmic challenges. This paper presents results of a longitudinal meta-study on development and current state of Industry 4.0 in the German manufacturing industries. The author derives lessons learned and best practices for supply network design in Industry 4.0 settings.

Keywords: Industry 4.0, platforms, manufacturing industries

Supply chain resilience in IoT context -Focus on innovation of food supply chains with traceability systems

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In this paper, we conduct a systematic research on the characteristics of food supply chains in IoT context and analyse current status and problems of food supply chain, which has been attached higher importance in supply chain research in recent years. Then, we introduce and explain the establishment of food supply chains and their traceability systems through case studies in order to illustrate the availability and robustness of traceability systems. After this, we investigate the feasibility and effectivity of blockchain technology which to innovate supply chain systems based on the studies of traceability system in food supply chain.

Keywords: Supply Chain Management in Food Industry; Innovative Technologies as Enablers of Sustainable Operations

The relationship between IIoT and Supply Chain Integration

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IIoT may influence supplier, internal and customer integration. However, the influence may not be described with the usual items of SCI but instead needs to be adapted.

The analysis is based on 11 IIoT initiatives and reveals that the overarching changes related to people, data and technologies can be summarized into measures concerning condition monitoring and predictive maintenance. Thus, the respective factors seem to be relevant in order to analyse the influence of IIoT initiatives on SCI. Despite the decision where to start (internal or external), the IIoT initiatives seem to lead to a higher level in both dimensions.

Keywords: Industrial Internet of Things, technologies, Supply Chain Integration

The impact of digital evolution on Mass Customization towards industry 4.0: A new transition for supply chains in manufacturing industries

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Companies that manage to adopt a successful strategy in the customization field get a double benefit: they increase customers' willingness to pay more and they manage to make the same customers purchase more products of the same brand. Here are presented the main impacts (positive and negative) at different levels that could come as result of its implementation. Our study brings some hints to answer some recent open questions about the need of matching the theory bases on supply chain evolution among operations management, supply chain management, and procurement areas (MacCarthy, Bart L. et al., 2016).

Keywords: mass customization, industry 4.0, supply chain

The impact on organizational performance of linking green supply chain management with supply-chain integration: A conceptual model

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This study proposes that supply chain integration (SCI) has the key relational capability to support the strategic employment of green supply chain management (GSCM) practices. This conceptual paper will further the understanding of the employment of GSCM practices and SCI mechanisms, in addition to providing a comprehensive review of the literature on the interdependent relationship of GSCM practices and SCI with respect to organizational performance. Manufacturing firms are expected to benefit from learning of a helpful approach to applying GSCM practices, which will improve their overall organizational performance.

Keywords: Supply chain integration, green supply management

Product quality, eco-friendly improvement and pricing decisions in a two-echelon supply chain under consumer environmental awareness

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This paper explores the effects of consumers' environmental and quality awareness on supply chain management. We consider a manufacturer-retailer supply chain where the demand depends on price, quality, and eco-friendly level of the product. Both centralized and decentralized models are developed to maximize the total supply chain and individual members' profit respectively. Decentralized decisions are determined under Stackelberg game setting. Price, quality level, and eco-friendly level of the product are considered as decision variables. Finally, a two part tariff contract is used to coordinate the supply chain and eliminate inefficiencies of decentralized decisions.

Keywords: Eco-friendly Supply Chain, Product quality, Coordination

Sustainable supply chain practices-motives, drivers and challenges

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This paper examines the adoption of sustainable supply chain practices (SSCP) within firms. This research argues that the process of SSCP adaption is not gradual and continuous, as often argued in the innovation literature, but is instead is highly discontinuous. The paper discusses the challenges and drivers for the adoption of sustainable supply chain practices from an intestinal theory perspective. Preliminary results from one case study illustrate that the firm delayed adoption for a several year but has made great progress in the past four year. Further analysis is need to develop results that are more conclusive.

Keywords: Sustainability, Supply Chains, Case Study

Stakeholder pressures and Chinese manufacturing firms' green supply chain management: A configuration approach

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Drawing upon stakeholder theory, this study applies a configuration approach to acquire a deep understanding of how the pressures of different stakeholder groups work together with Chinese manufacturers to promote the adoption of GSCM practices. We test the hypotheses by a configuration approach with 418 responses from Chinese manufacturing sector. In doing so, several statistic techniques were applied such as factor analysis, cluster analysis, ANOVA test to investigate the heterogeneity between stakeholder pressures and the adoption of GSCM practices. Our results suggest that varying stakeholders are related to varying levels of the adoption of GSCM practices for Chinese manufacturers. Specifically, the results from cluster analysis categories three Chinese manufacturers with respect to the level in responding to the stakeholder pressures: sensible, cognizant and conscious manufacturers. This research contributes to stakeholder theory at a more detailed level than before in the related literature. By doing so, this research represents an important step toward refining the stakeholder theory and the adoption of GSCM practice in manufacturing companies in emerging economies.

Keywords: green supply chain management, stakeholder theory, configuration approach

The effects of relational embeddedness on the manufacturer's rent. The study of triadic supply chains with the structural hole

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The goal of the study is to investigate whether manufacturer relational embeddedness contributes to the higher increase of network rent. In order to address this aim, we define manufacturer embeddedness as the effects of the quality of relationships in two dyads (supplier-manufacturer and manufacturer-customer) on the economic performance of actors. We employ the concept of network rent, to be depicted as the outcome of interplay between relational performance generated by two dyads. In general, the study shows that strong manufacturer relational embeddedness contributes to the increase of network rent for the manufacturer sitting on the structural hole.

Keywords: triad, supply chain, structural hole

The relationship between ambidexterity, supply flexibility and supply chain performance: An empirical analysis

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The purpose of this paper is to examine the relationship between Supply Chain (SC) ambidexterity, Supply Flexibility (SF), and SC performance, and to analyze the combination of SC exploration and exploitation associated with the different levels (low and high) of SF. The proposed research models and hypotheses are tested using cross-sectional survey data from a sample of 302 Spanish manufacturing firms. Our results suggest that the deployment of SC ambidexterity has a positive impact on performance through SF when the company has a high level of SF.

Keywords: Supply chain management, supply flexibility, ambidexterity.

Triad perspective of global supply chain integration among R&D, production and marketing

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This paper aims to examine how to implement the global integration among R&D, production, and marketing activities in Multinational Company (MNC) that are not clearly identified. Previous studies focus on supply chain integration from dyadic perspective such as R&D and production, production and marketing, and R&D and marketing that could not help to clarify a complex supply chain integration. We provide empirical support from triad perspective to explore how to well implement the global integration of interrelated activities among R&D, production, and marketing.

Keywords: Global supply chain management, supply chain integration

Supply chain gain/pain sharing contracts with asymmetric and full transparency

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This case study investigates a subcontractor's multi-year service contract agreement with a primary contractor. The subcontractor used lifecycle costing methodologies to estimate future costs. To motivate cost saving, a gain-sharing percentage was proposed by the primary contractor. The subcontractor had no visibility of margin/terms between the primary contractor and client. The contractual terms motivated the subcontractor to mitigate the risk of cost overrun by artificially inflating the contract price from sub-suppliers with a rebate. Simulation of full and asymmetric information show that the subcontractor should receive 90% of the gain-share for assuming all pain risks.

Keywords: Gain/pain sharing; Supply chain contracts; Service.

Horizontal versus vertical structural holes in supply networks: Contrasting performance implications for focal firms

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Our study investigates the relationship between structural characteristics of the supply network and firm financial performance. In particular, we introduce a novel approach to understanding structural holes in supply networks and examine the performance implications of the disconnections between the focal firm's suppliers and the disconnections between the focal firm's customers and suppliers. Our analysis based on the longitudinal supply network reveals contrasting effects of horizontal versus vertical structural holes on focal firms' financial performances. We also find that these contrasting influences of the two types of structural holes are more salient for the firms with high innovation capability.

Keywords: Structural hole theory, Supply network, Social network analysis

Managing supply chain collaborations in international joint ventures: Case study in the Chinese automotive industry

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The international joint venture (IJV) strategy brings the challenges of managing the interrelated horizontal and vertical supply chain collaboration (SCCs) in Chinese automotive industry. To explore the multi-level interrelated relationships including cross-cultural SCCs and IJVs, a multi-case study approach is employed in the paper. Best practices of SCC in IJVs are identified and investigated, where multicultural collaborations as well as monitoring and control of SCC tasks are discussed. The paper reveals the reconfiguration and development of SCCs in a multicultural-IJV context, addressing the question of how multi-level SCC is influenced by the cultural differences among the collaborators.

Keywords: supply chain collaborations, international joint ventures, automotive industry

An empirical re-evaluation of the impact of supply chain integration on firm performance

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This paper conducts a replication and extension study of Frohlich and Westbrook's (2001) (FW2001 hereafter) paper with multiple quasi-independent datasets to test the impact of SCI on firm performance. The results only provide partial support for the benefits of SCI. Our ANOVA approach generally indicates that the levels of integration are positively related to operational performance, such as quality, delivery, flexibility, and cost. However, greater integration does not necessarily lead to superior financial performance, such as sales and profitability. Furthermore, the regression results do not show a universal linear or curvilinear relationship between SCI and firm performance indicators.

Keywords: Supply chain integration, theory development, non-linear relationships

The buyer-supplier relationship quality impact on supply risk through the lens of buyer-supplier interdependence

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The supply chain literature identifies relationship quality (RQ) as a key concept that firms should consider in their relationship with partners. However, the literature lacks insights on how RQ can help reducing supply-side risk. The present study empirically examines the impact of RQ on supply risk using interdependence matrix. Data from a survey of 143 Iranian manufacturing firms are employed to test the hypotheses using multivariate regression and cluster analyses. We found some complex sets of relationships between RQ and supply risk based on the level of interdependence between buyers and suppliers, which presents important implication for theory and practice.

Keywords: Buyer-Supplier Interdependence, Supply Risk, Relationship Quality

Impacts of triadic collaborations on supply chain performance

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In supply networks, to fulfil a common set of tasks, parties come from different industries are connected and linked functionally across multiple tiers, which can be labelled as collaborations. The efforts of collaboration have been frequently observed and discussed in various business activities like R&D, production, distribution, and delivery. The triadic collaboration is the smallest unit of network which made of connected dyads, is said essential to a successful network. In this research, a case study is adopted as the methodology to reveal how does each dyad in triadic collaborations contribute to relevant business fulfilment and achievement.

Keywords: triadic collaboration, supply chain, performance

Discovering isomorphism in supply management: Institutional fit and organizational performance

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The goal of the study is to analyse isomorphic practices in the context of supply management, evaluating how the level of isomorphism with leading organizations affect performance. We consider three key business variables: structure, culture and technology. We used a sample with data from 200 Spanish companies, in the high technology sector. Hierarchical regression analysis is used to test the hypotheses. The results show that the impact of institutional fit on performance depends on the type of variable used, which suggests the possibility of stratification of isomorphism. We discuss the implications of these findings for institutional theory and supply management.

Keywords: Isomorphism, Institutional fit, Supply management

The influence of risk pooling and allocation policies on supply chain performance

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The bullwhip effect suggests that the variability of orders increases as we move upstream in the supply chain. Its existence and negative impact on supply chain performance has mutually been recognized in academia and industrial practice. We use system dynamics modelling and simulation to study the impact of structural supply chain dimensions and allocation policies on increasing order variability. We show, that a linear supply chain structure leads to a significantly higher increase of order variability than a network structure with multiple entities per tier. Moreover, we show, that allocation policies do not have a significant impact on this effect.

Keywords: Bullwhip effect, Supply chain structure, Allocation policy

Benefit allocations of the strategic alliance in a logistics industry

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This study investigates a logistics alliance in terms of various sharing rules in a cooperative game theory. Through high efficiency of resource utilization with collective market demand, carriers gain extra profits. In our study, the model conceptualizes the characteristic function of cost savings by coalitions considering the hub-spoke network. To share the improved profits fairly between members, we use different allocation schemes of a cooperative game theory. Analytical results with a numerical example demonstrate when coalitions can be formed measuring the satisfaction. Our interesting results with respect to fair allocation schemes provide a practical and academic intuition for further research.

Keywords: Cooperative game theory, Strategic alliance, Cost allocation

Development of capabilities, operational practices and interorganisational collaboration

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Our study presents the development of operational capabilities in the process of practices adoption and interorganisational relationships. Qualitative study with a multiple-case approach was employed. Then we developed a quantitative study to validate the variables and corroborate the results of the case studies using research hypotheses. 146 firms completed the questionnaire. We tested the hypotheses using ordinary least squares regression. Our study found that TQM has a positive and direct effect on capabilities of improvement, responsiveness and cooperation. Information technology practices showed positive and significant effects on responsiveness. The moderating effects of interorganisational collaboration on the relationship between operational practices and capabilities were positive and significant for IT and capabilities of customization, responsiveness and cooperation.

Keywords: supply chain management, case studies, survey, interorganisational relationships, interorganisational collaboration, operational capabilities

Supplying for champions: A winning strategy?

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Through the analysis of a Formula One Drivers' Championship win's financial impact to official, engine and tyre suppliers, this study contributes to the assessment of firms' sports sponsorship return on investment (ROI). Event studies were conducted over 52 cases (24 engine and 28 tyre suppliers) within 35 championships. Contrary to initial expectations, results demonstrated no positive return for engine suppliers, with the same holding true for 26 analysed tyre suppliers. For proprietary teams, however, significantly positive returns were detected in two subsequent years. Further analysis also suggests no impact of supplier category, geographical provenience and proprietary teams' participation on returns.

Keywords: Sports sponsorship, buyer-supplier relationship, event study

Some Common and fundamental characteristics of four supply chain strategies – customization, leagility, postponement and segmentation

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Balancing efficiency and responsiveness has been identified as an overall challenge for decision makers in supply chain management. The literature offers several strategies for managing this balance challenge. From a decision-making perspective this is a significant contribution but in combination the strategies also result in complexity related to the different alternatives offered. This study does, however, show that the strategies share a common foundation in terms of content related to decoupling thinking, which is based on flow discontinuities. Using the strategies' individual strengths, a process is outlined that takes advantage of these strengths through a four-phase ongoing process.

Keywords: Supply chain strategy, decoupling point, strategic lead-time

Urban legends in model specification for testing Supply Chain Integration theories

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This paper tests whether the effects of SCI on operations performance vary when different models are specified. Based on data from a survey of 348 Thai manufacturers, four models were tested using multiple regressions, structural question modelling and latent class analysis. Each SCI dimension (supplier, internal and customer integration) and its higher-order SCI construct are significantly and positively associated with all operational performance dimensions. With interaction terms added, the effects of SCI dimensions become insignificant and the signs turned negative. The latent class analysis classes with lower SCI strength had more number of positive performance links.

Keywords: Supply chain integration, Model specification, Theory testing.

The impact of Private Equity investments on firms' supply chain: Evidence from 6 Italian cases

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Private equity (PE) funds have started looking beyond their original short-term horizon. They have expanded their investment time-frame and gradually moved their focus from exploiting leverage and market timing of the deals to generating structural value in their portfolio companies. The impact of their takeovers has been largely studied in terms of operating and financial performance, but not in the set of action programs implemented in the supply chain (SC). This case-based research provides a first investigation of the SC areas where PE intervene, based on the in-depth analysis of the activities and impacts of six Italian PE funds.

Keywords: supply chain management, private equity, operational impacts, supply chain finance.

A framework for technology selection to support sales and operations planning in German medical technology organisations

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Original Equipment Manufacturers (OEMs) of the German medical technology sector are being challenged with competition from low-wage countries. Considering the importance of Sales and Operations Planning (S&OP) in these organisations, the current trend of Smart Manufacturing (Industry 4.0), and the dearth of empirical research on both medical technology supply chains and technology-selection processes, this paper presents the outcomes of an action research (AR) study to develop and practically test a technology-selection framework to support S&OP from both intra-organisational and inter-organisational perspectives. The cooperation with the case organisation provided insights into the operational issues faced by the organisation during its implementation.

Keywords: Enterprise Information Management, Industry 4.0. Medical technology sector

Sales and operations planning maturity models: Literature review and application in a consumer goods company in Brazil

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There is much interest in S&OP by academics and practitioners, and many companies have implemented the process worldwide. However, the academic literature can still benefit from more empirical studies. This paper assesses the S&OP maturity level in the Brazilian subsidiary of a consumer goods global corporation. A review of S&OP maturity is performed, and one framework is applied to the subsidiary case. The investigation indicates that S&OP has been key to align the subsidiary's efforts to pursue its targets. Research findings also position the subsidiary in an intermediate maturity level. Suggestions for future research are offered at the end.

Keywords: S&OP, case study, framework

Theorizing in sales and operations planning

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Although there is a significant increase in the number of empirical studies in Sales and Operations Planning (S&OP), there is a need to understand how these studies can contribute to theorising in S&OP. Therefore, this paper's main goal is to offer a conceptual synthesis framework to review empirical research on S&OP from a theoretical perspective, aiming to offer a novel approach towards contributing to theorising in S&OP. The paper builds on the systematic literature review approach and guides its findings on the analytical steps of realist synthesis. The paper offers a first attempt to provide preliminary S&OP context-mechanisms-outcome configurations.

Keywords: Realist synthesis, Middle-range theory, Cross-functional integration

Supply chain failure: The effects of short term quick fixes

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Supply chain failure occurs when a supplier fails to provide the level of quality and/or delivery performance originally specified. The literature focuses on failure avoidance and approaches to de-risk a supply chain. Here we focus on how supply chain actors respond to, and manage failure when it occurs. In particular, we examine the tendency to engage in short-term quick fixes rather than addressing the root causes of failure. Based on an extensive empirical study in the gas turbine industry, we capture the effects of short-term quick fixes. We use causal loop diagrams to show why supply chain failure may persist.

Keywords: Persistent Failure, Supply Chain Management, System Dynamics

The dissemination of negative events in supply chain networks: Circular waves as a metaphorical transfer

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Negative events hold the potential not only to compromise companies' operations but also to significantly damage their images, identities and reputations. Cases of the most distinct nature such as product recalls, oil spills, disclosure of modern slavery, child labor, fraud, and corruption, among others, have been linked to severe penalization in the market value of the companies involved. Building on empirical evidence on the impact of negative events to supply chain partners, we develop a metaphorical transfer as an initial effort in the theorization of such phenomenon, expanding the idea that the dissemination of negative events through the inertial effect.

Keywords: Dissemination, metaphorical transfer, the inertial effect

The impact of supply uncertainty on supply chain planning processes: Reflections from a whitefish case study

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This paper investigates supply uncertainty and supply chain planning (SCP) in a whitefish supply chain, aiming to explore how supply uncertainty impacts SCP and to propose management interventions accounting for uncertainty. The majority of the uncertainties identified were related to suppliers and external sources, caused by factors such as late delivery of catch, fishers selling to other buyers, regulations and weather. By integrating suppliers in planning and supplier development programs uncertainty can be mitigated. External and inherent related uncertainty such as changes in catch quotas and weather conditions must be managed by monitoring, forecasting, and preparedness.

Keywords: supply uncertainty, white fish raw material, supply chain planning, tactical planning.

Supply chain integration and risk management: The moderating effect of manufacturing networks

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This paper examines the enabling role of supply chain integration (SCI) in the implementation of supply chain risk management (SCRM). Moreover, this study explores the moderating effects of different configurations of manufacturing network (MN) on the relationship between SCI and SCRM as well as on the effectiveness of SCRM on operational performance. The results indicate the negative moderating effects of the geographic scope of MN on the SCI-SCRM and SCRM-operational performance relationships. This paper broadens the study of manufacturing networks and provides managerial insights for SCRM.

Keywords: Supply chain integration, Risk management, Manufacturing network

Implementation of parametric analysis of OFC and RHS parameters of LP models to support operations management decisions using AIMMS

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Although LP sensitivity analysis provides good inside on the effect of small changes in OFC or RHS parameters, in some cases the resulted ranges may be too tight for decision support, thus information about a wider range may be useful. For this purpose, a parametric analysis of the parameters must be considered. For doing this a good practical tool is provided by the AIMMS mathematical modelling system which is widely used for solving commercial optimization problems.

The objective of this paper is to show, how parametric analysis of the OFC and RHS parameters can be performed correctly using AIMMS.

Keywords: Decision support, LP Sensitivity analysis, AIMMS

Buffers in capacity management: A multiple case study

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A competitive delivery capability is dependent on a balance between supply and demand, a challenge that increase due to variations. This inevitably leads to a need for proper management of buffers. The purpose of this research is to investigate buffers utilized in practice in relation to a framework of buffers for capacity management. Twelve different kinds of buffers from the conceptual framework are identified in the multiple case study. The experiences from eleven respondents highlights the purposes and procedures of buffer capacity management (BCM).

Keywords: Buffers, Capacity Management, Case Study

Visualizing and mitigating delivery schedule deficiencies and inaccuracies using big data analytics

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The purpose of this paper is to describe and categorize deficiencies and inaccuracies in delivery schedules shared in European automotive supply chains, and to propose how to monitor and mitigate delivery schedule deficiencies and inaccuracies. We analyse 2.9 million schedule records received by a supplier during two years. Findings do not identify any critical data deficiencies but describes the existence of time and volume related schedule inaccuracies. It proposes mitigation strategies for monitoring these two inaccuracy types, and strategies for handling inaccuracies and schedule groups with perfect forecasts.

Keywords: Big data, Information sharing, delivery schedules, Supply chain management

Determining optimal manufacturing order quantitz by the method of monitoring production cycle time in small and medium enterprises

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Achieving manufacturing excellence today is critical for the success of manufacturing companies, especially for SMEs. It is even more complicated in developing countries without high-tech industrial base, but with a large number of knowledge and resources constraints. This paper deals with the problem of simultaneous determination of the economic manufacturing quantity and the production cycle time and proposes a simple and low cost approach for manufacturing order quantity determination. Proposed method is checked in automotive components producer company, during 4 years, by applying a modified method of current observations and by monitoring the elements of production cycle time. Mathematical criteria for the trends of all elements of productive t_p and non-productive time t_{np} (idle time), control limits CL and standard deviation SD have confirmed the feasibility of the method application. Optimal order quantity is a horizontal asymptote of productive time trend per piece, and for the year 2011 t_p amounts to 20 min while order quantity is 10 pieces, for 2012 t_p is 13 min for 12 pieces, for 2013 it is 14 min for 9 pieces, and for 2014 it is 25 min per piece, due to launching a new operation, and 8 pieces per lot. It is possible to describe given dependencies using the dependency $t_p = a/n + b$, where n is the number of pieces per lot and t_p is productive time.

Keywords: Optimal manufacturing order quantity, production cycle, small and medium enterprises

S&OP and budgeting: Living apart together?

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This study investigates the interaction between the supply chain planning process and the budgeting process. While this interaction is key to an effective supply chain, this topic has not yet explicitly been studied in academic supply chain or financial control literature. We employ a case study method, where we look at two business units within a large multinational in the chemical sector. We show that the sales and operation planning (S&OP) and budgeting processes interact and influence each other, yet are not fully integrated nor perfectly aligned.

Keywords: S&OP, budgeting, financial planning

Exploring the role of logistics service provider in supporting the supply chain strategy using supply chain finance instruments

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In order to serve different global markets, firms are revisiting the available logistics service providers' (LSPs) expertise and their supply chain (SC) activities. The firms are increasingly focusing on outsourcing their logistics activities as they grow, thereby, driving LSPs to offer a variety of increasingly complex services such as supply chain finance. The aim of this paper is to interrelate SC activities, SC financing and LSPs' roles in SC to support a global SC strategy. The findings illustrate three outsourcing scenarios that a firm can undertake to develop a sustainable relationship with the LSPs to facilitate their global role.

Keywords: Supply Chain Finance, logistics service providers, global supply chain

The role of customer leverage in process innovation: Moderating effect from market dynamics

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With the current unpredictable and turbulent business environment, manufacturers are leveraging customer knowledge as the source of innovation and competitive advantage. Drawing upon the knowledge-based view, this study argues that customer leverage is the source of firms' process innovation. The empirical results from 650 manufacturers showed a strong association between a manufacturing firm's customer leverage and its process innovation and performance. Process innovation acts as a mediating role in absorbing and transforming customer knowledge in improving costs and financial outcomes. In a more dynamic market, customer leverage strengthens the positive impact on process innovation. These findings are important for managers who have to stretch their needs to accommodate resources for sustainable innovation strategies.

Keywords: Customer leverage, process innovation, market dynamics

Investigating the barriers and opportunities of circular economy in the manufacturing sector

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In recent years Circular Economy (CE) has come to prominence as an alternative to the classic approach of "make-use-dispose". How companies can exploit the opportunities of CE to position themselves better are not well articulated in literature. This paper therefore aims to identify the barriers and opportunities of CE in the manufacturing sector through a socio-political, economic and environmental lens. The study reports the findings based on 64 responses from a survey questionnaire. The study identifies a number of barriers to CE implementation as well as a number of opportunities that it presents from socio-political, economic and environmental lens.

Keywords: Circular Economy, Barriers, Opportunities

Flexible and scalable production logistics for technology-oriented start-ups

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Technology-oriented start-ups often consider problems of production logistics in a late development phase, when a lot of money, capacity and manpower have already been spent on special processes or inefficient material provisions. However, this can be prevented if aspects of production logistics are considered at an early stage. But existing concepts are often not usable for start-ups. These concepts are mostly designed for a steady state of production and require a long familiarization. Therefore this paper presents a flexible and scalable concept for the production logistics of technology-oriented start-ups, which grows with them and is especially tailored to their requirements.

Keywords: production logistics, production planning, entrepreneurship

Remanufacturing: A relational view perspective

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This manuscript examines how do resource-sharing relationships occur and how are they preserved in remanufacturing. Using the relational rents can be generated from the joint efforts of alliance partners, concerning invest in relation-specific assets, share knowledge, combine complementary resources and use effective governance mechanisms. A systematic review was used to investigate in literature. The manuscript provides recent information on the current state to fill the gaps in the literature of the relational view and buyer-supplier relationships. Finally, the discussion also provides contributions to understand the collaborative processes of relational rents concerning to product recovery of remanufacturing industry.

Keywords: Relational views of strategy, Relational rent, Remanufacturing.

Environmental practices in UK breweries

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This paper uncovers the motivations, practices, measurement and barriers to environmental sustainability within UK brewers. Whilst much of the current literature draws on the practices of the top companies, this paper looks across a single supply chain tier and looks at the realities for companies of all shapes and sizes. Through site visits and workshops a picture is created of how brewers are managing their operations and how they can enhance their environmental performance. A model is developed which captures the key factors that influence the uptake of environmental practices in the brewing sector. This model may have wider application.

Keywords: Environmental practices, eco-efficient operations, organisational barriers, breweries

How electrified car concepts effect automotive logistics

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Current trends, in particular the electrification of the car – as a sustainable concept within the automotive industry – cause changes of many components beside battery systems or power electronics as key components in the field of e-mobility. The analysis of scientific literature and interviews processed in cooperation with OEMs, suppliers, research institutes on characteristics of electric cars have shown radical changes in the “future car”. As these changes effect the supply chain of a car, impacts concerning the logistics-relevant characteristics have to be identified.

Keywords: Car characteristics, automotive logistics, e-mobility

Classification of traceability information in textile and clothing supply chain: A Delphi-based approach

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The study explores empirically the need and requirement of traceability system in Textile and Clothing (T&C) supply chain. A Delphi based survey was conducted with 28 supply chain experts (industry professionals and academicians) to collect qualitative and quantitative data in order to identify and prioritize various factors that influence traceability adoption in T&C supply chains. Based on these factors the study further explores, classifies and suggests information that can be recorded and shared for a complete traceability among T&C supply chain actors, both business-to-business and business-to-customers.

Keywords: Traceability, Delphi Study, Supply Chain

The role of knowledge acquisition and knowledge exploitation in driving proactive environmental sustainability

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Firms are increasingly focusing on sustainable product and process designs so as to improve their environmental performance (Blome et al., 2014; Paulraj, 2011). Against this backdrop, this paper aspires to study the importance of knowledge acquisition and knowledge exploitation capabilities in driving proactive environmental sustainability practices in firms. Knowledge acquisition is recognized as a key capability that could result in developing sustainable product and process designs. Additionally, knowledge exploitation is recognized as a firm capability that could play a key moderating role along with knowledge acquisition in enabling sustainable product and process design.

Keywords: Sustainable design, knowledge acquisition, knowledge exploitation

Towards a conceptual model of manufacturing supply chain configuration for EU textile and apparel industry

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This article presents the development of a conceptual model for configuration of supply chains/networks for small series textile and apparel production, in contexts such as the EU. This configurational approach is needed due to the significant mismatch between current industry structures and the demand for small series production. The model, consisting of four elements with resulting themes and groupings, was developed through a systematic approach of the literature on the related types of production. The themes highlight the complexities and interdependencies that must be considered by managers. The linkages between the elements, in line with 3DCE, need to be further addressed.

Keywords: Supply Network Configuration, Textile and Apparel, Literature Review

The art of negotiating: Designing competition through mechanism design theory

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Buying organizations increasingly apply mechanism design theory in negotiations to improve purchasing prices. By designing an individual set of mechanisms, purchasers can incentivize suppliers to reveal their reservation prices. Such negotiation designs typically consist of diverse mechanisms, for instance re-quotes, auctions, and exclusive offers. However, current purchasing literature lacks an analysis of negotiation elements and associated incentive systems to provide insights into the development of optimal negotiation designs. Based on action research conducted at an automotive OEM, common negotiation elements are identified, underlying rationales are elaborated upon, and guidance is provided on how to implement these elements in practice.

Keywords: Mechanism design theory, Negotiation, Purchasing

Proposing a framework to minimize challenges in the South African construction industry

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Research in supply chain management barriers in the construction industries in developing countries such as South Africa has largely been overlooked. The aim of this paper is to propose a framework to minimize the supply chain constraints in the South African construction industry. To that end, fifteen (15) senior managers drawn from firms in the construction industry for their intimate knowledge and experience of the South African construction industry were interviewed. Five themes emerged from the primary data. These included supply chain collaboration, supply chain integration and coordination, logistics management, people related constraints, and systems and processes. In light of the primary data and the literature review, a framework for minimizing supply chain constraints in the South African construction industry was proposed.

Keywords: South African construction industry, supply chain management, supply chain constraints

End-to-End supply chain strategy: A consumer packaged goods industry perspective

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The giant retailers has become the sole channel to the market for many consumer goods. Retailers usually dictate the sale strategy of consumer-packaged goods (CPG) companies. However, CPG manufacturers can choose between two sale strategies determined by retailers: everyday lower price (EDLP) vs. promotion/SKU proliferation (PP). For sourcing packaging material there are two alternatives of Make (M) and Buy (B). This work analyzes the impact of sale (i.e., EDLP and PP) and sourcing (i.e., M and B) strategies on total supply chain costs. An analytical approach is adopted to model total supply chain costs (i.e. physical, marketability and transactional costs). By analyzing the CPG manufacturer's cost to serve we attempted to analyze the tradeoffs and determine the best combination of two strategies. A Monte Carlo simulation is conducted to generate data and analyze the model results.

Keywords: Sales strategy, sourcing strategy, supply chain strategy, consumer-packaged goods industry.

The ambidextrous organization in regional and global manufacturing networks – explorative enough?

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The present study aims at shedding light on how an industry with long tradition in a high-cost country has handled the tension between cost efficiency and increasing needs for delivering innovative products to the market when being part of networks at different scales. We argue that in order to stay competitive, manufacturing firms need to be able to achieve ambidexterity as well as crossing firm boundaries for stimulating its innovation activity. Cases from a high cost location are presented to demonstrate how innovation and ambidexterity unfolds in regional and global manufacturing networks.

Keywords: Innovation, the ambidextrous organization, manufacturing networks

Planning product design & development: Resource-influencing factors based on experience

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Time is the universal resource for Product Design and Development (PDD) projects which has a range of factors that influence its length. By sharing their perceptions on such factors, designers can provide insight to those who estimate/schedule. Understanding which factors are most influential may result in improvements in such estimations, offering improved organisational understanding of product development and a perspective to evaluate initial project briefs. This paper examines the factors that influence PDD project length found in literature, comparing them to those considered influential by design teams.

Keywords: Innovation, Product and Service Development, Project Management

Supply chain quality management and product recall: A multi-method research

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This study empirically investigates the impact of supply chain quality management on product recalls. Combining the methods of case study and quantitative survey, we find that a company's product recall system includes both tracking and traceability and process management. We also find that quality management teamwork and supplier selection are positively associated with product recall systems. Quality management teamwork is positively associated with supplier selection and involvement. In addition, both quality management teamwork and supplier involvement enhance product recall systems indirectly through supplier selection. The findings improve current understandings on how to manage product recalls in globalized supply chains.

Keywords: Product recall, supply chain quality management, multi-methodological research



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Cover: Chain Bridge by night
Picture: Tamás Thaler

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ISBN 978-615-5270-43-7

25th International EurOMA 2018 Conference Book of abstracts

Organised by

European Operation Management Association

Place De Brouckère Plein 31.

B-1000 Brussels, Belgium

<http://www.euroma-online.org>

Hosted by

Budapest University of Technology and Economics

Műegyetem rkp. 3.

H-1111 Budapest, Hungary

<https://www.bme.hu>

Hungarian Academy of Sciences

Institute for Computer Science and Control

Kende u. 13-17.

H-1111 Budapest, Hungary

<https://www.sztaki.hu>

Technical editors:

Róbert Hohol

Gergely Szakáts

Gabriella Bánfalvi

Diamond Congress Ltd.

Csalogány utca 28.

H-1015 Budapest, Hungary

<http://www.diamond-congress.hu>

Printed by

OOK-Press Ltd.

Csillag utca 5.

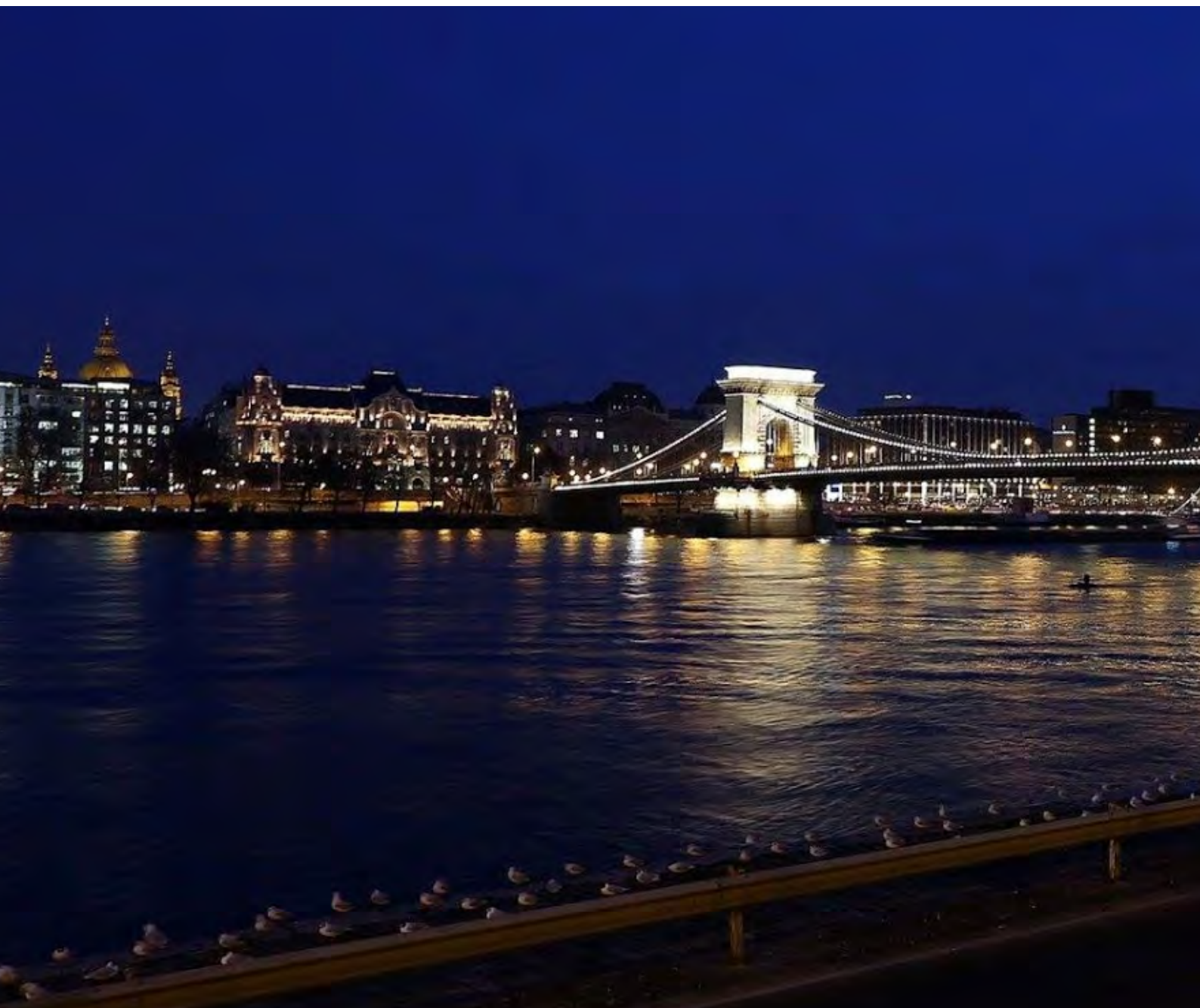
H-8200 Veszprém, Hungary

<http://www.ookpress.hu>

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